abmc 2011

Proceedings

iafor

Official Conference Proceedings ISSN: 2186-5914

The Asian Business and Management Conference

Osaka, Japan, 2011

The Asian Business and Management Conference

Conference Proceedings 2011

The International Academic Forum (IAFOR)
Aza Katahira 23-4 801, Ouaza Nagakute
Aichi-gun, Aichi-ken, Nagakute-cho
480-1131 Japan
ISSN: 2186-5914
http://iafor.org/abmc_proceedings.html

iafor

The Asian Business and Management Conference

Official Conference Proceedings 2011

THE DETERMINANTS OF LEVERAGE AT THE NAIROBI STOCK EXCHANGE, KENYA

By;
Bitok Kibet[1], Kibet Leonard[2], Tenai Joel[3] and Mutwol Milcah[4]

[1] Senior Lecturer, Accounting and Finance Department, Moi University, Kenya

[2] Researcher, Research department, Kenya Bureau of standards, Kenya

[3] Senior Lecturer, Accounting and Finance Department Moi University, Kenya

[4] Chief Finance Officer, Moi University, Kenya

Contact author: hezkibet@yahoo.com

ABSTRACT

This paper examines the determinants of leverage for companies listed at the Nairobi Stock Exchange (NSE). This study considered all the 54 firms listed in the Nairobi Stock Exchange. However, financial firms and utilities were excluded in the analysis because they are considered highly regulated and their leverage levels are heavily influenced by regulation. The three leading theories of capital structure were reviewed; static trade off theory, pecking order theory and agency cost theory. In addition, the researchers also tried to find out which theory adequately explains the financial behavior of the sampled firms. The static trade-off theory which suggests that optimal capital structure exists and is a trade-off between net tax benefit of debt financing and bankruptcy cost, provides the most robust explanation of leverage for Kenyan listed firms for the period 2003 to 2008. It is found that firms with more tangible assets are in a position to provide collateral for debts, so these firms raise more debt. Further, larger and more profitable firms maintain high debt ratios, while firms with higher growth rate use less debt financing. Pecking order theory which states that firms prefer internal financing to external financing and risky debt to equity due to information asymmetries between insiders and outsiders of a firm is found not to explain adequately the financing behavior of the sample. Agency cost theory illustrates the financial behavior of firms in context of agent and principle relationship does not clearly explain leverage preference at NSE. In summary, the findings are that firm leverage is positively associated with both asset tangibility, profit, macro-economic and size, and negatively associated with firm-level profitability and non-tax debt tax shield. Leverage across the sample was typically lower for alternative investment market segment. These results are generally consistent across pooling and panel models that used GLS and SUR techniques, respectively.

Key word;
Leverage, Nairobi Stock Exchange, capital structure

INTRODUCTION

1.1. Background

Financial leverage (LEV) of a firm is the ratio of total debt to total assets. Rationale behind using total debt rather than long term or short term debt is to avoid their contradictory relations with leverage mostly witnessed in the Banking sector. These inconsistent relations are shown by Myer's (2002) [investigation, positive association of short term debt with financial leverage and negative with long term debt]. As nearly all covenants in loan settlements and accounting numbers are reported in terms of book value rather than market value. There is theoretical elucidation about preference of book value in Myer, which suggests that book values are related to the values of assets already in place which are used to support debt. While market value of firm depends on present value of growth opportunities, supports less debt. Hence in debt contracts, firms are likely to use book value. So debt is measure in terms of book values rather than market values.

Thus, a firm with high leverage need to allocate an efficient mix of capital that will finally reduce its cost. One of the strategies a firm should look into is to lower the weighted cost of capital. This will increase net economic return which eventually, increases the firm's value; hence, maximizing the firm's value, which is the focal point for every financing decision made by the management of a company. The management of a firm operating in very uncertain world has a tough task in achieving the best capital structure. However the key to choosing appropriate and acceptable level of financial leverage is still debatable by top management of a firm. Still there is no conclusive assistance to managers and practitioners for choosing between debt and equity in attaining optimal financing decision.

Flannery (1994), Myers and Rajan (1998), Diamond and Rajan (2000) and Allen et al. (2006), developed theories of optimal bank capital structure, in which capital requirements were not necessarily binding. In Flannery (1994) debt counters the risk shifting incentives of the management of financial firms. Myers and Rajan (1998) show that a financial firm will have an optimal interior level of leverage that depends on the liquidity of its assets. Diamond and Rajan (2000) argue that optimal bank capital structure is the result of a trade-off between liquidity creation, costs of bank distress, and the ability to force borrower repayment. Banks may also hold equity in order to commit to monitoring their loans in a competitive environment (Allen *et al*., 2007).

The development of agency theory in the 1980´s, coupled with detailed research into the extent and effects of bankruptcy costs during the 1980´s, leads to a yet more detailed view of the utility of the basic M&M capital structure theory. Finally, cross-cultural examination of observed capital structure patterns in non-U.S. industrialized countries has lead to the current mainstream view that corporations act as if there is a unique, optimal debt level for individual firms. This results from a trade-off between the tax benefits of increasing leverage and increasing agency and bankruptcy costs that higher debt entails.

The fact that there seems to be an optimal debt level for each individual firm is very interesting, due to the fact that a company's result to a large extent depends on what structure it has. This creates incentives for companies to revise their current debt level. Many theories and empirical evidence in providing optimal capital structure exists in the real world. Yet, it still remains a cloudy area and with no specific guidelines to assist financial officers in attaining efficient mix of debt and equity. Thus, only clues and calculated judgment plus some understanding of financial theory are possible tool to be applied in facilitation of how the financing mix does affect the firm's value and its stock price. Throughout history and experience, most of world's most severe financial crisis have had their causes traced to poor management of the debt.

The debt to Equity ratio relationship varies according to industries involved, a company's line of business and its stage of development. Different firms in various industries exhibit varying characteristics due to their nature of operation and trading. Studies have been done by scholars including the famous duo coined as founders of Finance, Miller and Modigliani famously referred to as MM (1958-1963) who at first they proposed that, in a world of no income taxes and transaction costs, a firm's capital structure is irrelevant to its value. Hence the evolution of the notion of optimal capital structure where the debt/equity mix would be such that the firm's weighted average cost of capital would be minimized and its value would be maximized. DeAngelo and Masulis in their famous 1980 article had articulated in such a way that the proposition came to be known as the "optimal debt level."

1.2. Listed Companies in Kenya

Kenya has only one Stock Exchange, the Nairobi Stock Exchange (NSE). Dealings in shares and stocks started in Kenya way back in the 1920's when the country was still a British colony. There was however, no formal market, no rules and no regulations to govern stock broking activities. In the circumstances, trading took place on gentlemen's agreements in which standard commissions were charged with clients being obligated to honor their contractual commitments. At the time, stock broking was a sideline business conducted by accountants, auctioneers, estate agents and lawyers who met to exchange prices over a cup of coffee. Because these firms were engaged in other areas of specialization, the need for association did not arise.

In 1951, Francis Drummond, an Estate Agent, established the first stock brokerage firm in Kenya. By 1953, the London Stock Exchange accepted to recognize the setting up of the Nairobi Stock Exchange as their overseas stock exchange. Finally in 1954 the Nairobi Stock Exchange was constituted as a voluntary association of stock brokers registered under the Societies Act (it was transferred to the Companies Act with effect from 1991). Since Africans and Asians were not permitted to trade in securities until after the attainment of independence in 1963, the business of dealing in shares was then confined to the resident European community

1.3. Problem Statement

Substantial parts of the literature concerning Leverage have dealt with issues regarding the leverage ratios. These leverage ratios have been analyzed in many different ways. These models are unfortunately not applicable in practice because of their inability to deal with important factors such as the firm's asset structure; this therefore forms the research problem. The research would therefore investigate how companies determine their Leverage. It will determine whether companies have developed their own models. The difference in the decision process between big and small companies within the same industry will be examined. Does the highest levered company have a totally different procedure from the lowest levered company? The research will investigate whether Leverage theories are relevant in Kenyan listed firms. To be able to examine this kind of questions companies that are as comparable as possible within the same industry should be investigated. This research will therefore investigate all listed companies in the NSE with the exception of financial companies, since this approach enables a fair comparison.

1.4. Objectives of the Study

The main objective of this research is to determine the firm's characteristics that affect leverage and their relationships. The specific objectives are; to determine the relationship between Size, Non-debt tax shield, Tangibility, Micro-economic conditions, Profit and leverage.

LITERATURE REVIEW

2.1. Theory of Leverage

Corporate finance theory bases on the Modigliani and Miller (1958) propositions that specify certain conditions under which various corporate financing decisions are irrelevant. The MM propositions provide a base for analyzing how financing decisions can create and destroy the value for a corporation. Theory of irrelevancy was presented in an era when research was dominated by assumption that there is no interaction between the firm's investment and financial decisions of the firm. This theory seems to be consistent with static trade off theory.

It states that in a perfect competitive market the value of a firm depends on its operating income and level of business risk. Simply put, value of firm does not relate to its leverage. Financing and risk management choices will not affect firm's value if the capital market is perfect. A neutral tax means that the tax system is unbiased. Same tax rate for each tax payers and for all income sources. But in general it is assumed that tax rate is zero. Modigliani and Miller grouped every firm to a certain risk class and a risk class is described as an array of firms each of which has a matching pattern of earnings payoffs. Further, no transaction costs and no institutional restrictions create frictionless capital markets in which every investor can undertake the same financial transactions as firms. Firm's financial choices do not give any signals to investors about firm's financial position. If, on the contrary, leverage can signal the firm's profitability by altering investor's beliefs about the firm's payoffs, then its choice would affect investors' decisions and the firm's market value. That contradicts with MM proposition-1. In perfect market assumption, investors can form a portfolio with any desired cash flow pattern so there is no need for corporations to design their leverage in ways that tailor their securities to satisfy these desires. In start, MM propositions were considered as, for firm's debt equity choices. But applications of propositions have since expended to debt maturity, risk management, mergers and spin-offs.

Jensen and Meckling are most prominent figures in research of agency cost domain. They started their model with identification of two types of interest conflicts that can be possible: conflict between manager and shareholders, conflict between debt holder and shareholders. They suggest that as manager possess less than 100% residual claims and it causes conflicts between shareholder and managers. Subsequent type of conflict between debt holder and shareholder can arise when issuance of debt gives more incentive to shareholder. More explicitly, debt investment is inclined towards shareholders, if an investment yields large return, well above the face value of debt, shareholders captures most of the gain. But if investment fails the firm stares at bankruptcy, equity holder just skip away and debt holders bear the whole consequences.

According to Jensen and Meckling, agency relationship is an agreement between two parties. One of them (agent) performs certain services on the behalf of other (principal). The problem of stirring an agent to behave as if he were maximizing the principal's welfare is rather common. In this relationship both parties are utility maximizers, therefore there is always a chance that agent will not always performs its responsibilities to maximize the benefits of principal. Principal have to restrain this problem by fixing an appropriate level of incentives for agent and to monitor the agent's actions (by incurring monitoring cost). In this relation principal incur certain cost, called "agency cost", which can be explained as the sum of following activities: (a) The monitoring expenditures by the principal.(b)The bonding expenditures by the agent. (c)The residual loss.

Principal incurs monitoring cost to limit the unexpected activities of agent. Bonding expense can be describe as "in some conditions it will pay the agent to expend resources (bonding costs) to guarantee that he will not take certain actions which would harm the principal or to ensure that the principal will be compensated if he does take such actions." In some cases, even both parties incur the agency cost but still agent's certain decision for profit maximization would not increase the welfare of agent. This loss is termed as" residual lost" and it can be defined as "the dollar equivalent of the reduction in welfare experienced by the principal as a result of agent's divergence from principal's expectation is also a cost of the agency relationship and that is referred as the residual loss".

According to Grossman and Hart (1982) use of debt, reduces the conflict between managers and shareholders. Their model spotlights the bankruptcy cost in debt scenario and shows that manager can prefer between investing in lucrative projects and consuming perks that benefits managers only. The additional perks managers use, are more likely to bankrupt the firm. It seems bankruptcy is costly to managers because they lose benefits, so debt can create an enticement for managers to make better investment decisions and consume less perks. Narayanan (1987) brought up a new factor to extend Grossman and Hart's investigation, usage of convertible debt. Harris and Raviv agree that managers like to continue the current operations of the firm even when investors prefer liquidation. In this situation the optimal leverage tradeoff between liquidation cost and investigation cost (that incur on firm's performance inspection). As M&M propositions suggested that in perfect market, there is no bankruptcy cost and tax shield but these have been shown to be significant factor of leverage. The static trade-off theory shows that optimal debt level is obtained when present value of tax shield with debt financing is just offset by increase in the present value of cost of distress.

Trade-off theory, deals with financial distress and tax advantage of debt financing. Financial distress indicates a condition when promises to creditors are broken or honored with difficulty and it can leads to bankruptcy. Cost of financial distress depends on the likelihood of distress and cost of bankruptcy. Since according to MM's propositions , firm can have 100 % debt in its capital structure for receiving utmost benefit of tax shield but in reality capital structure compose of entirely with debt is not possible. Consequently, STT suggests the limited amount of debt and proposes that the optimal leverage ratio of the firm is determined by the trade-off between tax shields with debt financing against higher bankruptcy cost.

According to STT, optimal debt ratio varies from firm to firm. Firm having safe and tangible assets and plenty of taxable income have high debt ratio. Such firms will be in a position to provide collateral for debts and in case of default, tangible assets will be apprehended but still firm may be in a place to avoid bankruptcy. According to theory profitable firms take more benefit of the tax shield by debt financing because there is fewer chance for them to go bankrupt therefore profitable firms are capable to raise its debt ratio more than a less profitable firm. This theory contrast MM theory.

According to Ross (1977), managers often use leverage as a signal of firm to investors. Ross elucidates that; debt issuance is positive signal to capital market about firm's better prospects and more debt signifies the confidence of manager in firm's future returns. Thus outside investors view the level of debt as a positive signal, but over exceeded debt leads to bankruptcy. As MM claims that mangers and investors have same information but in reality it does not true, mangers can sell stock if stock is overvalued or sell bond if bond is undervalued and by knowing this, investors take new stock sale as negative signal.

In the Rose model, managers know the true distribution of firm's returns, but investors do not, mangers benefit if firm's securities are more highly valued by the market but are penalized if the firm goes bankrupt. Firms with higher value are predicted to issue more debt as a signal to investors in order to differentiate them from lower value firms. Further model shows positive relation between profitability, debt level, and bankruptcy probability.

Idea of prioritizing the different sources of finance was initiated by Donaldson (1961) and proposed that firms should prefer internal financing over external financing and debt to equity. In 1984 Myers and Majluf argued that that if a firm maintain its liquid financial resources (cash and market securities), issue no new securities and use only its available retained earnings for financing new investment then information disparity can be disappeared. POT is proposed by Myers and Majluf by explaining the affects of information asymmetries between insiders and outsiders of firm. Their model contradicts the MM's proposition that, all market participants have same information and proposes that, due to information costs, managers prefer to finance corporate investment by first tapping less agency costly sources. More specifically, they prefer internal financing to external financing and risky debt to equity. The usage of internal and external funds hierarchically, based on certain hypothetical foundations "firm has no well defined debt to equity ratio" Myers that's why firm should prefer to finance new investments first with retained earnings, then issue debt and finally with issue of equity. Second foundation is "market value of firm's existing shares decrease with announcement of equity issue. If firms issue equity for financing new investment, the value loss of existing shareholder's assets could increase the Net Present Value (NPV) of new investment. In this situation new project even with positive NPV may be rejected. POT argues this way of sourcing new investment and recommends securities (internal funds or low risk debts) that are not undervalued by the market.

This theory explains that why most profitable firms use source of internal funding and low profitable firms use debt financing due to insufficient internal funds. Unlike MM's theory, POT weighted less to tax shield in leverage. Profitable firms with limited investment opportunities work down to low debt ratios. In firm's financial deficient, debt ratio goes up and in surplus it goes down.

Various research studies have been conducted to test the POT and found more or less empirical support. For instance, Krasker confirms the results of POT by studying the relationship between stock issue and stock price. He shows that larger the stock issue the worse the signal to firm in form of tumble of stock price. De Haan et al study the information asymmetry for Dutch firms. They show that 75% of his interviewed firms have a definite financial hierarchy, 54% give preference to internal funding over external and 18% prefer debt source. Further, most of firms responded in his study that they do not have a target debt level. This study gives sound support to POT and information asymmetry, as determinant of leverage. In Shyam Sunder and Myers propose the new POT with time-series explanatory power.

Narayanan (1998) uses slightly different approach to show the consistent results with PTO and claims that firms either issue debt or reject new investment to be financed. Fama et al. disagree with POT and explain the trend that "why firms go after POT's last resort first, equity issue when they can utilize internal funds or issue debt". Most large listed companies raise funds by issue equity, which is a violation of POT. Large companies prefer internal funding, due to being more profitable and strikingly, even in presence of more access to debt financing due to high tangibility. Fan et al show that firms use equity financing as a first choice especially in firm's calamity period. They observe the financial decisions of managers in Hon Kong under the Asian Crisis. Ihamuotila oppose the POT argument by saying that if old shareholders (and large shareholders) are better informed than others then it is expected that equity will not tremble and equity will be more attractive compared to debt.

Market timing, a relatively old idea (see Myers, 1984), is having a renewed surge of popularity in the academic literature. In surveys, such as those by Graham and Harvey (2001), managers continue to offer at least some support for the idea. Consistent with market timing behavior, firms tend to issue equity following a stock price run-up. In addition, studies that analyze long-run stock returns following corporate financing events find evidence consistent with market timing. Lucasand McDonald (1990) analyze a dynamic adverse selection model that combines elements of the pecking order with the market timing idea, which can explain pre issue run-ups but not post issue underperformance. Baker and Wurgler (2002) argue that leverage is best understood as the cumulative effect of past attempts to time the market.

The basic idea is that managers look at current conditions in both debt and equity markets. If they need financing, they use whichever market currently looks more favorable. If neither market looks favorable, they may defer issuances. Alternatively, if current conditions look unusually favorable, funds may be raised even if the firm has no need for funds currently. While this idea seems plausible, it has nothing to say about most of the factors traditionally considered in studies of corporate leverage. However, it does suggest that stock returns and debt market conditions will play an important role in leverage decisions.

2.2. Empirical Studies
The following are the empirical literature based on previous research

2.2.1. International Evidence
Drobetz and Fix (2003), tests leverage predictions of the trade-off and pecking order models using Swiss data. At an aggregate level, leverage of Swiss firms is comparatively low, but the results depend crucially on the exact definition of leverage. Confirming the pecking order model but contradicting the trade-off model, more profitable firms use less leverage. Firms with more investment opportunities apply less leverage, which supports both the trade-off model and a complex version of the pecking order model. Leverage is very closely related to the tangibility of assets and the volatility of a firm's earnings. Finally, estimating a dynamic panel model, they find that Swiss firms tend to maintain target leverage ratio. Their findings are robust for several alternative estimation techniques. Allen (1991) investigates the financial managers' perceptions of the broad determinants of listed Australian company leverage decisions. The research method involves a series of field interviews undertaken with the company secretaries and senior financial personnel of 48 listed Australian companies.

The results show that companies appear to follow a pecking order with respect to funding sources and also report policies of maintaining spare debt capacity. Bevan and Danbolt (2004) analyze the determinants of the leverage of 1,054 UK companies from 1991 to 1997, and the extent to which the influence of these determinants are affected by time-invariant firm-specific heterogeneity. Comparing the results of pooled OLS and fixed effects panel estimation, they find significant differences in the results. While their OLS results are generally consistent with prior literature, the results of their fixed effects panel estimation contradict many of the traditional theories of the determinants of corporate financial structure. This suggests that results of traditional studies may be biased owing to a failure to control for firm-specific, time-invariant heterogeneity. Titman and Wessels (1988) investigate determinants of leverage choice using data from United States from 1974 to 1982. They reported that debt levels are negatively related to the "uniqueness" of a firm's line of business. This evidence is consistent with the implications of Titman (1984) that firms can potentially impose high costs on their customers, workers, and suppliers in the event of liquidation have lower debt ratios. They conclude that transaction costs may be an important determinant of leverage choice.

2.2.2. Malaysian Evidence

Pandey (2004) examines the relationship between leverage and market structure using data from 208 Malaysian companies for the period from 1994 to 2000. It provides new insights into the way in which leverage and market power and leverage and profitability are related. leverage and market power, as measured by Tobin's Q, are shown to have a cubic relationship, due to the complex interaction of market conditions, agency problems and bankruptcy costs. The study finds a saucer shaped relation between leverage and profitability, due to the interplay of agency costs, costs of external financing and debt tax shield. An empirical study analyzing the corporate finance and governance structure in Malaysia before and after the financial crisis of 1997, utilizing the agency cost approach is done by Sato (2002). The researcher link the corporate governance mechanism with the role of banks and corporate ownership structure taking into account the institutional framework and historical background of the Malaysian financial system. Based on the data for 375 non-financial KLSE listed companies during fiscal years 1995-99, the empirical result shows that the commitment of banks to finance corporate debt as well as lending obviously increased debt ratios. Ownership concentration mitigates conflict between managers and owners.

Foreign ownership also contributed to a reduction in the agency costs of equity financing. However, increasing ownership by native Malays (Bumiputera), both the direct and indirect holding of corporate shares, played no significant role in disciplining corporate management. Finally, high dependency on debt led to excessive corporate investment before the crisis. These results imply that the concentration of risks on the banking sector and social policy advocating the dispersion of corporate ownership weakened the corporate governance mechanism, thereby exacerbating the distress of Malaysia's corporate sector during the financial crisis. Pratomo and Ismail (2006), study the Islamic bank performance and leverage based on 15 Malaysia Islamic Banks' Annual Report from 1997 until 2004. They consider the choice between debt and equity financing that has been directed to seek the optimal leverage. Under the agency costs hypothesis, a high leverage tends to have an optimal leverage and therefore it leads to produce a good performance, while the Modigliani-Miller theorem proves that it has no effect on the value of the firm. The importance of these issues has only motivated researches to examine the presence of agency costs in the non-financial firms. In financial firms, agency costs may also be particularly large because banks are by their very nature informationally opaque – holding private information on their loan customers and other credit counterparties. In addition, regulators that set minimums for equity capital and other types of regulatory capital in order to deter excessive risk taking and perhaps affecting agency cost hypothesis of Islamic Banks in Malaysia, under which high leverage firm tends to reduce agency costs. They set the profit efficiency of a bank as an indicator of reducing agency costs and the ratio equity of a bank as an indicator of leverage. Their findings are consistent with the agency hypothesis. The higher leverage or a lower equity capital ratio is associated with higher profit efficiency.

2.2.3. Ghanaian Evidence

Publicly quoted and large unquoted firms were found to have higher debt ratios than SMEs. Overall, listed and unquoted firms exhibit different financing behavior from that of SMEs. Short term debt constitutes a relatively high proportion of total debt of Ghanaian firms. The results indicate that older SMEs are more likely to rely on long-term debt finance. This is because they are often perceived to have better reputations with debt finance providers. Listed firms are better positioned to raise equity finance from the stock market, and large unquoted firms are also able to access equity finance from institutional investors usually through private placements. Firm size was found to have a positive relationship to short-term debt ratio of SMEs and debt ratios of quoted firms, but negative with respect to long-term debt ratio in the case of unquoted firms. We also found that fixed assets are important in obtaining long term debt. Clearly, firms tend to match their duration of assets and liabilities by financing their fixed assets with long-term debt and their current assets with short-term debt. The results of this research seem to support the pecking order hypothesis, given that both long term and short-term debts have inverse associations with profitability in all the sample groups.

Firm growth was found to have a positive association with long-term debt for the unquoted firms' sample and short-term debt ratio for SMEs. It was found that firms with high risk profile avoid taking more financial risk by using less long-term debt. However, they are more likely to use short-term debt. SMEs with high managerial shareholding rely less on short-term debt. In order to avoid the pressure and risk associated with debt use, quoted and unquoted firms with high managerial ownership depend less on long-term debt but rely more on short-term debt. Male-owned and exporting SMEs depend more on long-term debt finance than female-owned SMEs and non-exporting firms. Industry was found to be important in explaining the SMEs' leverage. SMEs located outside the capital city depend less on debt finance. Limited liability companies are more likely to obtain long-term debt finance relative to sole-proprietorship businesses.

The issue of leverage is an important strategic financing decision that firms have to make. Clearly, the pecking order theory appears to dominate the Ghanaian leverage story. It is therefore important for policy to be directed at improving the information environment. Firms, especially SMEs, are encouraged to maintain proper records. Policy makers should place greater emphasis on the facilitation of equity capital since it provides a base for further borrowing, reduces businesses' sensitivity to economic cycles, and provides unquoted firms with access to syndicates of private and institutional venture capital suppliers. There could also be policies intended to encourage unquoted firms to access public equity capital by, for example, reducing listing requirements and subsidizing flotation cost. It is appropriate to establish financing schemes to assist SMEs in specific industries, those owned by women and those located outside the capital. Considering that export-oriented firms and limited liability companies have easier access to finance, firms should think about entering the international markets and sole-proprietorships are encouraged to consider more organized forms of business.

Table 2.2.1.Empirical Results

Variable	Expected sign	Prior Study.
Market to Book Ratio	-	Myers(1997), Rajan and Zingales(1995) Gaud et al(2005);Prashanth & Narayan (2005);Alti (2006) Leary & Roberts (2005)
Size (Log Sales)	+	Rajan & Zingales (1995);Baker & Wrugler (2002);Bevan & Danbolt(2004);Gaud et al(2005)
	-	Titman & Wessels (1988);Leary & Roberts (2005); Alti(2006); Ditmar & Thakor (2007) Huang & Song(2005);Prashanth & Narayanan (2005)
Non Debt Tax shield	-	Titman & Wessels(1988); Miguel Pindado(2001);Huang & Song(2005) Chem & Xue (2005) Prashanth & Narayanan (2005); Rao & Lukose(2003)
Profitability(EBIT DA/Sales)	-	Titman & Wessels (1989); Rajan & Zingales (1995);Leary & Roberts (2005)Alti (2006) Rao & Lakose(2003), Prashanth & Rayananan (2005);Guha-Khasnobis & kar(2006) Li, Yue & Zhao (2006);Bevan & Danbolt (2004); Gaud Et al (2005);Feidakis & Rovolis (2007);

RESEARCH METHODOLOGY

3.1. Sample

This research predominantly targets listed companies in the Nairobi stock exchange. Samples of 29 companies have been selected for this research. Furthermore, selected explanatory attributes and used regression model taken from most prominent research studies in the area of leverage. Results are shown with used data for providing validity and are ensured by showing the related research work on determinants of leverage. This research covers 29 listed firms in Nairobi stock exchange and excludes financial institution listed in the Nairobi stock exchange. Stratified sampling is therefore applicable in this research. The data set analyzed in this research is composed of both market and accounting data of publicly listed companies in Nairobi stock exchange, from 2003-2008. To conduct panel regression, firms of which there are at least five consecutive years of data are included, so this leaves an appropriate sample.

3.2. Data Analysis

For the purpose of this research, E-views statistical tool is used to arrive at the results.E-Views can be used for general statistical analysis and econometric analyses, such as cross-section and panel data analysis and time series estimation and forecasting-Views combines spreadsheet and relational database technology with the traditional tasks found in statistical software, and uses a Windows. This is combined with a programming language which displays limited object orientation.

Panel data analysis performed by regression model was used in this research; this method is preferable because it gives similar results that can be obtained by using other similar techniques, for instance Tobit model. Panel data involves the pooling of observations on a cross-section of units over several time periods. A panel data approach is more useful than either cross-section or time-series data alone. One advantage of using the panel data set is that, because of the several data points, degrees of freedom are increased and collinearity among the explanatory variables is reduced, thus the efficiency of economic estimates is improved. Generalized form of the regression model is as under

$$LEV_{it} = \alpha + \sum_{i}^{n} \beta_i x_{it} \varepsilon_{it} \quad (1)$$

Where LEV_{it} is the dependent variable and it is the leverage of firm from (i) to the period t. α is intercept of equation, β_i is the slope coefficient for X_{it} independent variables. X_{it} denotes the different independent variables in general but in this case it represents up to five independent variables. ε_{it} represents the error term.
By transferring equation (1) to be more specific to the data then the new equation is as follow:

$$Leverage\ Measure_{it} = \alpha + \beta_1\ NDTS_{it} + \beta_2 Size_{it} + \beta_3 Profit_{it} + \beta_4\ Growth_{it} + \beta_5 TAN_{it} + \beta_5 \mathbf{Macr}_{it} + \varepsilon_{it} \quad (2)$$

Where i=1… 4 and t=1… 5. NDTS is non debt tax shield and TAN is Tangibility, MACR is macro-economic condition. Leverage measure is dependent variable and size, profit; growths, non debt tax shield and Tangibility are independent variables.

RESULTS

4.1. Introduction

This research targeted all the 54 firms listed in the Nairobi Stock Exchange, which were in operation in 2008. However, as already explained under section 3.2 (Population of Study), financial and investment sector firms were excluded, five of the firms were listed at the bourse in the course of 2006, and were therefore, expected to submit their first performance statistics in 2007. The five firms were rendered ineligible for this study on account of lack of the required data. Also excluded from this research was Uchumi Supermarket that had since been suspended from the bourse at the time of data collection. The criteria left us with 38 firms that were eligible for research, out of which 29 were found to be valid for purposes of this analysis. This represents a response rate of 83.5 per cent.

Table 4.2: Descriptive Statistics

	Growth	Leverage	Macro-economic conditions	Non Debt Tax Shield	Profit	Size	Tangibility
Mean	1.864080	0.169667	1.806661	291087.7	619965.9	6.532412	6.200057
Median	1.265000	0.131300	0.283500	83231.50	175670.5	6.529750	6.279200
Maximum	9.300000	0.614400	38.89000	3106880.	7528891.	7.888100	7.755700

Minimum	0.130000	0.000000	-3.160000	0.000000	-104346.0	5.353700	4.418800
Std. Dev.	1.745006	0.145199	5.263391	520434.7	1167448.	0.541509	0.674960
Skewness	1.534294	1.328850	4.979122	3.044277	3.404737	0.130765	-0.404708
Kurtosis	5.339046	4.256502	31.32571	13.10415	16.02630	2.563797	3.400150
Jarque-Bera	107.9334	62.65569	6535.968	1008.941	1566.388	1.875365	5.910740
Probability	0.000000	0.000000	0.000000	0.000000	0.000000	0.391534	0.052059
Observations	174	174	174	174	174	174	174
Cross sections	29	29	29	29	29	29	29

4.3. Correlation analysis.

Collinearity is the term used to explain the dependence of one variable to other. When variables are highly correlated they both express basically the same information. Statistically multicollinearity is not needed because if they exist, then independent variables are redundant and do not add any predictive value over each other. In general, independent variables having collinearity at 0.70 or greater would not be included in regression analysis. In the data the highest correlation value as 0.708964 (in table 4.4.1) that means collinearity should not constitute a problem in the regression analysis.

Table 4.3.1: Correlation Matrix

	LEV	MCR	NDT	PRF	SIZ	TAN	GRT
LEV	1.000000	-0.045067	0.046163	0.122731	-0.000338	0.349944	-0.086547
MCR	-0.045067	1.000000	0.039367	0.111244	-0.030597	0.024547	-0.066252
NDT	0.046163	0.039367	1.000000	0.708964	-0.148852	0.103988	0.052421
PRF	0.122731	0.111244	0.708964	1.000000	-0.092922	0.066401	-0.060399
SIZ	-0.000338	-0.030597	-0.148852	-0.092922	1.000000	-0.006256	0.050362
TAN	0.349944	0.024547	0.103988	0.066401	-0.006256	1.000000	0.006658
GRT	-0.086547	-0.066252	0.052421	-0.060399	0.050362	0.006658	1.000000

4.4. Regression Analysis

To test the hypothesizes regression test are performed .Intercept is α in the equation. Standard error measures the variability in the approximation of the coefficient and lower standard error means coefficient is closer to the true value of coefficient. Leverage is dependent variable and Tangibility, size, growth, profit, micro-economic condition and Non Debt Tax Shield are independent variables. Result shows that micro-economic condition is not statistically significant, tangibility; profit, growth, Non Debt Tax shield and Size are significant at 5%. R square represents the percent of the movement of the dependent variable captured by the intercept and the dependent variable(s). The results explain roughly 84% of the variation in leverage which is captured by independent variables. F-value shows that overall model is satisfied at the 1% level.

Table 4.4.1: Regression Results

Dependent Variable: LEV
Method: Panel EGLS (Period weights)

Sample: 2003 2008
Cross-sections included: 29
Total panel (balanced) observations: 174
Linear estimation after one-step weighting matrix
Cross-section SUR (PCSE) standard errors & covariance (d.f. corrected)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
MCR	0.000149	0.000712	0.208949	0.8348
NDT	-1.07E-07	3.86E-08	-2.783844	0.0061
PRF	4.51E-08	1.65E-08	2.733368	0.0071
SIZ	0.207006	0.043858	4.719940	0.0000
TAN	0.092256	0.027798	3.318797	0.0012
GRT	-0.010292	0.005744	-1.791799	0.0754
C	-1.732407	0.233898	-7.406686	0.0000

Effects Specification

Cross-section fixed (dummy variables)
Period fixed (dummy variables)

Weighted Statistics

R-squared	0.862065	Mean dependent var	0.177702
Adjusted R-squared	0.821919	S.D. dependent var	0.153954
S.E. of regression	0.064968	Sum squared resid	0.565594
F-statistic	21.47357	Durbin-Watson stat	1.286568
Prob(F-statistic)	0.000000		

Unweighted Statistics

R-squared	0.843802	Mean dependent var	0.169667
Sum squared resid	0.569705	Durbin-Watson stat	1.123523

4.5.1. Fixed Effects

The fixed effects specification preserves the time series variation in leverage, but ignores most of the cross-sectional differences among firms. There is one caveat to mention. A firm with higher-than-predicted leverage in one year is likely to have higher-than predicted leverage in the next year. However, this stickiness in financial policy may lead to inflated t-statistics. The combined time and firm fixed effects model eliminates omitted variables bias arising both from unobserved variables that are constant over time and from unobserved variables that are constant across firms.

4.5.2. Testing for Heteroskedasticity

By selecting Cross section weights, the results will estimate a feasible GLS specification assuming the presence of cross-section heteroskedasticity. And by selecting Cross-section SUR, the results estimates a feasible GLS specification correcting for both cross-section heteroskedasticity and contemporaneous correlation. Similarly, Period weights allows for period heteroskedasticity, while Period SUR corrects for both period heteroskedasticity and general correlation of observations within a given cross-section. Note that the SUR specifications are each examples of what is sometimes referred to as the Parks estimator.

The graph below shows the results of standardized residual, showing a normal distribution on the skewness figure of 0.937558. Jarque-Bera statistic is used to test the null of whether the standardized residuals are normally distributed. The skewness of a symmetric distribution, such as the normal distribution, is zero. Positive skewness means that the distribution has a long right tail and negative skewness implies that the distribution has a long left tail.

4.6. Discussion of results

Results obtained from analysis, expressed in terms of the signs and statistical significance of the coefficients for the selected six independent variables are presented in table 4.5.1.Result discussion below is categorized on the basis of these independent variables and focuses on their associations with capital structure theories.

4.6.1. Size

Size is found to be statistically significant at a positive relation with Leverage as by the co-efficient .This suggests that larger financial firms tend to have higher leverage ratios and large firms borrow more than small firms. This results is consistent with pecking order theory which suggest that for obtaining the optimal leverage a firms needs a change in the debt level it involves substantial fixed costs. This cost is relatively small for larger firms and it makes it easy for them to go for debt. Therefore high bankruptcy is a big threat for listed companies in Kenya. Majority of the empirical studies indicate that data from developing countries have always found positive relation between size and financial leverage .For instance: Titman and Wessels , Rajan and Zingales and Booth et al provide the evidence of significant direct relationship between size and financial leverage. Since the observation has a significant statistics it can be claimed that size does have a significant role in making debt ratio and determining the leverage of financial sector firms. Larger firms use less debt rather than equity to raise their financing.

4.6.2. Growth

Growth is estimated to have a negative impact on leverage and is insignificant. The results supports with STT and Agency cost theory but contradicts Pecking order theory suggesting that firms prefer debt over equity. These results imply that with higher growth rate, financial firms maintain lower leverage ratios. Growth increases costs of financial distress, reduces free cash flow problems, and exacerbates debt-related agency problems." Growing firms place a greater value on stakeholder co-investment. Thus, the trade-off theory predicts that growth reduces leverage.

By contrast, the pecking order theory implies that firms with more investments—holding profitability fixed—should accumulate more debt over time. Thus, growth opportunities and leverage are positively related under the pecking order theory. The market-to-book asset ratio is the most commonly used proxy for growth opportunities. Adam and Goyal (2008) show that it is also the most reliable. A higher market-to-book ratio, however, may also be influenced by stock mispricing. If market timing drives leverage decisions, a higher market-to-book ratio should reduce leverage as firms exploit equity mispricing through equity issuances. Furthermore, a mechanical negative relation may exist between a market-based definition of leverage and the market-to book assets ratio.

Capital expenditures and the change in log assets, which are also proxies for growth, represent outflows. They directly increase the financing deficit as discussed in Shyam-Sunder and Myers (1999). These variables should therefore be positively related to debt under the pecking order theory. Myers (1977), however, holds the view that firms with growth opportunities will have a smaller proportion of debt in their capital structure. This is because conflicts of interest between debt and equity holders are especially serious for assets that give the firm the option to undertake such growth opportunities in the future. He argues further that growth opportunities can produce moral hazard situations and small-scale entrepreneurs have an incentive to take risks to grow. The benefits of this growth, if realized, will not be enjoyed by lenders who will only recover the amount of their loans, resulting in a clear agency problem. This will be reflected in increased costs of long-term debt that can be mitigated by the use of short term debt.

4.6.3. Profit

Profit is estimated to be positively associated with leverage ratios and this association is found to be statistically insignificant. It implies that profitable firms in Nairobi stock exchange sector maintain high debt ratios. This result is inconsistent with implication of Pecking order theory that firms prefer to finance first with internal funds before raising external finances. Further the outcome is also consistent with Titman and Wessels.

Profitable firms face lower expected costs of financial distress and find interest tax shields more valuable. Thus, the tax and the bankruptcy costs perspective predicts that profitable firms use more debt. In addition, the agency costs perspective predicts that the discipline provided by debt is more valuable for profitable firms as these firms are likely to have severe free cash flow problems (Jensen, 1986).

Recent research, however, suggest that the trade-off theory predictions on profitability are more complex than those based on static models (Strebulaev, 2007). In a dynamic trade-off model, leverage can appear to be negatively related to profitability in the data due to various frictions. Empirically, the response has been to argue that leverage and profitability are negatively related because firms passively accumulate profits (see Kayhan and Titman, (2007).'

4.6.4. Non Debt Tax Shield

NDTS is found to have a positive relationship with leverage and is not statistically significant. This result is consistent with static trade-off theory for short term loans but contradicts with long term loans. Thus, NDTS does not influence on debt ratio and leverage in Kenyan Listed companies but direct relationship between financial leverage and NDTS support short term STT. There are few studies that predict the same relation:Brandley and et al (1984). Makkie-Mason(1980 and Sharpe and Pooley (1980)

Ross (1985) argues that if a firm in this position issues excessive debt, it may become ”tax-exhausted” in the sense that it is unable to use all its potential tax shields. In other words, debt is “crowded out” and the incentive to use debt financing diminishes as non-debt tax shields increase. Accordingly, in the framework of the trade-off theory, one hypothesizes a negative relationship between leverage and non-debt tax shields. In contrast, Scott (1977) and Moore (1986) argue that firms with substantial non-debt tax shields should also have considerable collateral assets which can be used to secure debt. It has been argued above that secured debt is less risky than unsecured debt. Therefore, from a theoretical point of view, one could also argue for a positive relationship between leverage and non-debt shield. In fact, the empirical evidence is mixed. For example, Shenoy and Koch (1996) find a negative relationship between leverage and non-debt tax shield, while Gardner and Trcinka (1992) find a positive one.

4.6.5. Tangibility

Tangibility is estimated to have a positive relation with leverage. Bradley et al. (1984) assert that firms that invest heavily in tangible assets also have higher financial leverage since they borrow at lower interest rates if their debt is secured with such assets. It is believed that debt may be more readily used if there are durable assets to serve as collateral (Wedig et al., 1988). By pledging the firm’s assets as collateral, the costs associated with adverse selection and moral hazards are reduced. This will result in firms with assets that have greater liquidation value having relatively easier access to finance at lower cost, consequently leading to higher debt or outside financing in their capital structure. In the case of small firms, the concession of collateral reduces the under-investment problem in the firms by increasing the probability of obtaining credit –functioning also as a management instrument in conflicts between entrepreneur and financiers, since the degree of the entrepreneurs’ involvement in sharing business risk, by granting personal collateral, is clearly evident. It is further suggested that bank financing will depend upon whether the lending can be secured by tangible assets (Storey 1994; Berger and Udell 1998).

Galai and Masulis (1976), Jensen and Meckling (1976) and Myers (1977) argue that stockholders of levered firms are prone to overinvest, which gives rise to the classical shareholder-bondholder conflict. However, if debt can be secured against assets, the borrower is restricted to using debt funds for specific projects. Creditors have an improved guarantee of repayment, and the recovery rate is higher, i.e., assets retain more value in liquidation. Without collateralized assets, such a guarantee does not exist, i.e., the debt capacity should increase with the proportion of tangible assets on the balance sheet. Hence, the tradeoff theory predicts a positive relationship between measures of leverage and the proportion of tangible assets.

4.6.6. Macro-Economic Condition

Micro-economic condition seems to have a positive relation with leverage. During expansions, stock prices go up, expected bankruptcy costs go down, taxable income goes up, and cash increases. Thus, firms borrow more during expansions. Collateral values are likely to be procyclical too. If firms borrow against collateral, leverage should again be procyclical. However, agency problems are likely to be more severe during downturns as manager's wealth is reduced relative to that of shareholders. If debt aligns managers incentives with those of shareholders, leverage should be countercyclical. If pecking order theory holds, leverage should decline during expansions since internal funds increase during expansions, all else equal. If corporate profits have shown an increase in the recent past, agency problems between shareholders and managers are less severe. Consequently, firms should issue less debt.

CONCLUSIONS AND RECOMMENDATIONS

5.1. Introduction

The overall objective of the research was to investigate the determinants of leverage and its relationship with leverage. Six specific objectives were drawn from the broad objective.

The research analyzed six years panel data of listed firms in the financial sector between 2003-2008. For analysis panel data regression model was selected. Foremost intention was to test if listed firms in the follow any capital structure theory during the period 2003-2008. To measure this, six attributes that are most accredited in academic and literacy sphere of corporate leverage were selected. Afterwards this attributes were regressed using panel regression model so as to answer the proposed question.

5.2. Summary of Findings

Three theories were considered: Static trade off theory, Pecking order theory and Agency cost theory. All these theories poses different traits to explain the leverage .This research also tried to find out which one explains better the financial behavior of the sampled firms. All these theories possess different traits to explain the corporate leverage. Static trade-off theory suggests that optimal capital structure is a trade-off between net tax benefit of debt financing and bankruptcy cost. Firms with high tangible assets will be in a position to provide collateral for debts, so these firms can raise more debt. Larger and more profitable firms maintain their high debt ratio, while firms with higher growth rate uses less debt financing. Pecking order theory states that firms prefer internal financing to external financing and risky debt to equity due to information asymmetries between insiders and outsiders of a firm. Agency cost theory illustrates the financial behavior of firms in context of agent and principle relationship.

To achieve the intended goal the research formulated six hypotheses. For the purpose of testing this hypothesis six explanatory attributes from array of renowned previous research works on the leverage were selected. In addition, sample is taken from listed firms in the financial sector during the period 2003-2008.

5.3. Conclusion

The result shows that Size has positive relation with financial leverage and is found to be the most determinant of corporate financing patterns. Larger financial firms maintain high leverage ratios. Size's association with financial leverage supports static trade-off theory and Agency cost theory but contradicts with Pecking order theory. Negative relation between growth and leverage also found out as important determinant of firm's financial behavior. This implies that firms with a higher growth rate use less debt financing source. This negative relation between growth and financial leverage supports only Trade off theory of capital structure. For Non Debt Tax Shield an inverse relation that supports Trade off theory but opposes static trade-off theory. Besides that the results of relationship between debt and interest coverage ratio which is expressed as net income before taxes divided by interest payment support the findings of previous studies. Firms that maintain high interest coverage ratio tend to employ more debt and this implies the ability of firms to generate high earnings. This therefore implies that listed companies do not following the pecking order theory in obtaining finance.

The most robust findings are that firm leverage was: 1) positively associated with both asset Tangibility, profit, macro-economic and size, 2) negatively associated with firm-level profitability and non-tax debt tax shield. Leverage across the sample was typically lower for non- Alternative investment market segment (AIMS).These results were generally consistent across pooling and panel models that used GLS and SUR techniques, respectively. Finally, this research suggests that the static trade-off hypothesis provides the most robust explanation of leverage for Kenyan listed firms from 2003 to 2008.

5.4. Recommendation.

There were fifty five companies listed at the NSE. After all the Financial and Investment Companies were eliminated only forty were eligible for the research. Out of the forty, eleven could not be considered for the research because either, they did not have the requisite five years results or either were not considered to be levered, leaving only twenty nine companies. The small number of companies made it difficult to include many more variables since data analysis would have been very difficult. Future research should consider bigger samples and also assess non listed firms. Secondly, in future work it would be appropriate to focus on ownership structure and inflation to find out the actual economic depreciation.

REFERENCES

Abubakr Saeed Blekinge (2006).Institute of Technology the Determinants of Capital Structure in Energy Sector (A study of Pakistani listed firms)

Atta Shah and Syed Hijazi,(2005) AGM& conference of Pak Society of Development Economics, 2005 “The Determinants of Capital Structure in Pakistani Listed Non-Financial Firms”,

Alams Heshmati(2001) The Dynamics of Capital Structure: Evidence from Swedish Micro and Small Firms”,by, working paper no. 440, 2001

Kai Li, Heng Yue and Longkai Zhao (2006) “Ownership, Institutions, and Capital Structure: Evidence from Chinese Firms”, by, 2006

Lind Chen, Robert Lensink and Elmer Sterken (1998) The Determinants of Capital Structure: Evidence from Dutch Panel data”, by, European economics association annualcongress, 1998

L., V. Aivazian, A. Demirguc- Kunt, and V. Maksmivoc(2001) “Capital Structures in Developing Countries”, Booth, Journal of Finance 56, 87-130, 2001

Modigliani, F. and M.H. Miller School of Management SE-371 79, Karlskrona SWEDEN. (2007) Pp8-25,. 1958. The Cost of Capital, Corporation Finance, and the Theory of Investments," American Economic Review 48, 261-297.p.

Myers, S. C. and Majluf, N. S (1984)Corporate financing and investment decisions when firms have information thatinvestors do not have”, by, Journal of FinancialEconomics, Vol. 13, 1984, pp. 187–221.

Myers, S. and Rajan, R. (1998) the paradox of liquidity, *Quarterly Journal of Economics* Pages (113, 733-771).

NSE HANDBOOK (2008), The Nairobi Stock Exchange
Business Development Department Nation Centre, 1st floor, Kimathi Street
Tel: 254-20-2831000, 2831256, 2831292 E-mail: info@nse.co.ke
Website: www.nse.co.ke

NSE HANDBOOK (2009), The Nairobi Stock Exchange
Business Development Department Nation Centre, 1st floor, Kimathi Street
Tel: 254-20-2831000, 2831256, 2831292 E-mail: info@nse.co.ke
Website: www.nse.co.ke

Philippe Gaud, Elion Jani, Martin Hoesli and Andre´ Bender,(2005)The Capital Structure of Swiss Companies: an Empirical Analysis Using DynamicPanel Data”, European Financial Management, Vol. 11, No. 1, 51–69, 2005

Petersen, M. (2009) Estimating standard errors in finance panel data sets: comparing approaches, *Review of Financial Studies* 22, 435-480.

Peura, S. and Keppo, J. (2006) Optimal bank capital with costly recapitalization, *Journal of Business* 79, 2162-2201.

Rajan, R. and Zingales, L. (1995) What do we know about capital structure? Some evidence from international data, *Journal of Finance* 50, 1421-1460.

Rauh, J. and Sufi, A. (2008) Capital structure and debt structure, unpublished working paper, University of Chicago.

Rajan, R. G. and Zingales (1995), What do we know about capital structure? Some evidence from international data",by, L., Journal of Finance, Vol. 50, (1995), pp. 1421–1460

Suhaila, Mat Kila and Wan Mahmood, Wan Mansor(2008). Capital Structure and Firm, Characteristics: Some Evidence fromMalaysian Companies. University Technology MARA Terengganu.pp23-42. April(2008).

Staffan Hansen, Nationalekonomiska institutionen, (1994)Ser A Test of The Pecking Order Theory of Capital Structure: The Case of Finish Firms", A: 417, (1994)

Santos, J. (2001) Bank capital regulation in contemporary banking theory: A review of the literature, *Financial Markets, Institutions & Instruments* 10, 41-84.

Titman, S. and Wessels, (1988) The determinants of capital structure choice, *Journal of Finance* 43, 1-19.

Yanmin Qian, Yao Tian, and Tony S. Wirjanto, (2007)
"An Empirical Investigation into the Capital-Structure Determinants of Publicly Listed Chinese Companies: A Static Analysis",

Welch, I. (2004) Stock returns and capital structure, *Journal of Political Economy* 112, 106-131. Welch, I. (2007) Common flaws in empirical capital structure research, unpublished working

TECHNIQUES AND BENEFITS OF ENVIRONMENTAL MANAGEMENT ACCOUNTING:

Abstract

Increased public green awareness has encouraged business to consider environmental effects of their activities and also to take environmental matters into decision making. This paper addresses this concern by discussing environmental management accounting (EMA) as a means to separately identify, quantify, analyse and interpret corporate environmental aspects. EMA technique outlined in this study was initially set up by the United Nations Divisions for Sustainable Development (UN DSD). It focuses on technique to quantifying corporate environmental expenditures or costs for the purpose of better controlling and benchmarking. Meanwhile external costs for which firms do not legally responsible are not calculated. In addition, EMA techniques for costing analysis, investment evaluation and performance measurement also presented.

EMA has been acknowledged to deliver many benefits to the users. Cost saving, better product pricing, optimal use of resources, innovation, cleaner production, increased shareholder value and improved reputation, including green public profile are potential benefits noted in literatures to date. Some case studies to date examining the benefits of EMA are also presented in this study.

Keywords: Environmental management accounting, Technique, Benefit

1. INTRODUCTIONS

Public green awareness has been considerably increasing over time (Medley, 1997) towards a sustainable business (United Nations Division for Sustainable Development[1], 2001). Sustainable can be reached when current needs are met without jeopardizing the needs of future generations (Hansen and Mowen, 2005). The acknowledged green notion leads to the development of environmental accounting (Ullman, 1976; Burritt, Hahn and Schaltegger, 2002). Environmental management accounting (EMA), as a part of environmental accounting, has been claimed as a beneficial tool to overcome limitation of conventional management accounting to better understanding and quantifying environment-related issue for decision making process (Burritt et al., 2002; de Beer and Friend, 2006). EMA, therefore, not only assists firms to manage cost better, but also offers green public profile.

Accordingly, this paper attempts to discuss the environmental management accounting (EMA) which its use has been considered to deliver many benefits to business of the now generally accepted global warming phenomenon. In particular, this paper aims to provide a brief development of environmental management accounting, a basic framework of identifying environmental costs, a discussion on available techniques to implement EMA, and an identification of the benefits gained from implementing EMA. This study adds to the literature by providing EMA concept, sound EMA techniques and potential benefits of EMA, thus shedding light into the importance of EMA. Providing a clear picture of implementing EMA as well as its benefits is expected to encourage more corporate to engage in sustainable business.

The balance of the paper is organised as follows. It commences with a section presenting definition and development of EMA. The next section discusses environmental costs. It is followed by some techniques for EMA application. Potential benefits of EMA, along with empirical studies that investigated the impacts of EMA implementation are provided in the penultimate section. The final section provides conclusion.

2. ENVIRONMENTAL MANAGEMENT ACCOUNTING (EMA)

2.1 Definitions

EMA is environmental accounting which focuses mainly on providing information for internal decision making purpose (United States Environmental Protection Agency, 1995a). According to Burritt (2004:13), "EMA is concerned with the accounting information needs of managers in relation to corporate activities that affect the environment as well as environment-related impacts on the corporation". Meanwhile, UN DSD (2001) contends that EMA information will provide data to support organizational calculations for environmental management and comprehensive decision making processes. By considering environmental concerns in business decision making, corporate can also link financial and environmental performance indicators for benchmarking process. As such, in general environmental management accounting serves managers with environmental-related information which supports decision making processes that lead to improved environmental and financial performance.

EMA covers both physical and monetary procedures which are later named as physical EMA (PEMA) and monetary EMA (MEMA). The former refers to procedures for the utilization, flows and ultimate disposal of material and energy. Whereas the later involves procedures for quantifying costs, savings and revenues relate to activities with potential environmental effects (UN DSD, 2001).

Similarly, Burritt et al. (2002) also further categorized EMA into two main elements: MEMA and PEMA. MEMA focuses on "environmental aspects of corporate activities expressed in monetary units" such as "measures expressed in expenditure on cleaner production, costs of fines for breaking environmental laws, investment in capital projects that improve the environment and monetary values of environmental assets" (Burritt et al., 2002:41). Meanwhile PEMA refers to "a company's impact on the natural environment, expressed in terms of physical units such as kilograms, cubic metres or joules (eg. kilograms of material per customer served, joules of energy used per unit product) (Burritt et al., 2002:41).

It can be underlined that a key difference in MEMA and PEMA is the type of measurement used and information resulted, namely financial and non-financial measures and information, respectively. In short, MEMA seems to be about the impact about the environment on the firm's financial performance and PEMA is about direct affects on the environment. The EMA categorisation by UN DSD (2001) and Burritt et al. (2002) has broadened our perspectives on management accounting analysis, not only focusing on monetary aspect but also considering physical one. UN DSD (2001) depicts EMA as follows:

<table>
<tr><th colspan="2">Accounting in Monetary Units</th><th colspan="2">Accounting in Physical Units</th></tr>
<tr><td rowspan="2">Conventional Accounting</td><td colspan="2">Environmental Management Accounting</td><td rowspan="2">Other Assessment Tools</td></tr>
<tr><td>MEMA
Monetary EMA</td><td>PEMA
Physical EMA</td></tr>
</table>

Figure 1. EMA elements (UN DSD, 2001:8)

2.2 Development Of EMA

Medley (1997) acknowledged that organizations have faced mounting pressure to change, including increased environmental legislations and growing environmental awareness from consumers, bankers, investors, employees and senior managements. Some researchers, such as UN DSD (2001), Burritt et al. (2002) and de Beer and Friend (2006), claimed that conventional financial and cost accounting has been argued to be incapable to meet this pressure. Burritt (2004:14) argues that conventional management accounting mostly neglects "separate identification, classification, measurement and reporting of environmental information, especially environmental costs". Therefore most corporate do not incorporate their environmental costs into business decision making (Burrit, 2004). As acknowledged by UN DSD (2001), information on environmental performance is, in fact, available to some extent but most firms do not link it to economic variables and seldom utilize it in decision making. Accordingly it can be argued that management accounting do not unable to capture environmental costs as beneficial information for making decision, but rather it do not a lot apply yet to costing and planning environmental issues.

Development of environmental accounting has commenced since 1970s (Matthews, 1997). Preliminary studies which are widely known includes Ullman (1976) and Dierkes and Preston (1977). Ullman (1976) contends that corporate environmental accounting system (CEAS) plays a key role in assessing environmental effects of a firm's regular business activities. Meanwhile Dierkes and Preston (1977) focus in an attempt to demonstrate accounting reporting as to physical environment and finally proposed a framework for analysing environmental impacts systematically.

Schaltegger and Burritt (2001) argue that EMA represents internal environmental accounting. They propose a comprehensive framework of EMA by broadening the concept of environmental accounting. With regard to environmental accounting, they emphasize that there are two main groups of environmental impacts related to company activities: "environmentally related impacts on the economic situation of companies, and company-related impacts on environmental systems" (Schaltegger and Burritt, 2000:58). Similar to UN DSD (2001), a later study by Burritt et al (2002) termed the previous as MEMA while the later as PEMA as discussed above.

3. UNCOVERING ENVIRONMENTAL COSTS

This study chooses to initially outline the basic EMA principles and procedures[2] published by The EMA Expert Working Group of the UN DSD (2001). The EMA approach covers the basic framework to assess corporate environmental costs as well as material flows and their costs. Providing a clear notion of what constitutes environmental costs is a critical step towards EMA application. Definition and the scope of environmental costs may vary in practice. Notwithstanding, the users need not to be confused with varied definitions but should ensure to incorporate all significant and relevant costs in decision making.

Environmental costs constitute all costs regarding environmental damage and protection. The UN DSD exemplifies corporate environmental costs with costs of “contaminated sites, effluent control technologies, and waste disposal” (2001:11). It should be noted that ‘waste’ should be considered in a broader meaning which refers to “all materials (including water and energy) that have been purchased and paid for but have not been turned into marketable products” (UN DSD, 2001:12). Waste, therefore, comprises all ‘non product output’ including solid waste, waste water and air emissions. Accordingly, corporate environmental costs can be formulated as follows:

Environmental protection costs (Emission treatment and pollution prevention)
+ Cost of wasted material
+ Cost of wasted capital and labour
= Total corporate environmental costs

Figure 2. Total corporate environmental costs (UN DSD, 2001:12)

The UN DSD further offers a detailed EMA cost scheme assessment as depicted in Figure 3 below.

Environmental media Environmental cost/expenditure categories	Air/Climate	Wastewater	Waste	Soil/ Groundwate	Noise/ Vibration	Biodiversity / Landscape	Radiation	Other	Total
1. Waste and emission treatment									
1.1 Depreciation for related equipment									
1.2 Maintenance and operating materials and services									
1.3 Related personnel									
1.4 Fees, taxes, charges									
1.5 Fines and penalties									
1.6 Insurance for environmental liabilities									
1.7 Provisions for clean up costs, remediation									
2. Prevention and environmental management									

2.1 External services for environmental management									
2.2 Personnel for general environmental management activities									
2.3 Research and development									
2.4 Extra expenditures for cleaner technologies									
2.5 Other environmental management costs									
3. Material purchases value of non- Product output									
3.1 Raw materials									
3.2 Packaging									
3.3 Auxiliary materials									
3.4 Operating materials									
3.5 Energy									
3.6 Water									
4. Processing costs of non-product output									
∑ **Environmental expenditures**									
5. Environmental revenues									
5.1 Subsidies, awards									
5.2 Other earnings									
∑ **Environmental revenues**									

Figure 3. Environmental expenditure/costs and revenue/earnings (UN DSD, 2001: 19)

The environmental cost/expenditures are classified according to the historic development of awareness for environmental cost categories as follows (UN DSD, 2001:17-18):

1. Waste disposal and emission treatment.
   The first category consists of all costs to conventionally treat, dispose and clean-up extant waste and emissions.
2. Prevention and environmental management.
   The second class covers annual costs incurred for preventing waste and emissions.
3. Material purchases value of non-product output
   The third block constitutes the costs of wasted material because of inefficient production. Wasted materials are assessed based on their purchase value or material consumed value.
4. Processing costs of non-product output.
   The last category comprises labor hours, depreciation of machinery and operating materials, and financing costs. They will be added to environmental cost scheme based on the respective production cost pro rata

charges.

5. Environmental revenues.
   Environmental revenues draw from sales of waste or grants of subsidies.

All costs incurred outside firms that are not internalized via regulations and prices, or that are relevant to customers and suppliers, referred as externalities, are not considered as part of corporate environmental costs above (UN DSD, 2001). EMA developed by UN DSD mainly intends to incorporate real material and environmental efficiency loss for internal decision making purpose instead of focuses on external effects. Externalities, however, may need to be considered in evaluating investment projects (Jasch, 2003).
In common practices, such corporate environmental costs are not traced and assigned to relevant processes and products but simply summed up to general overheads. The aggregation of environmental and non-environmental costs in overhead account leads to distorted calculation that hinders improvement options and achieved savings. Measuring environmental costs enables management to better utilize raw and auxiliary materials with less harmful operating materials for lessening emissions and waste (Jasch, 2003). Material flow is important to be identified for systematically tracing environmental costs. However, traditional cost-accounting system is unable to identify the relevant information. In particular, the non-product output (waste) has not been separately quantified and monetarised (UN DSD, 2001). Several assessment methods to overcome this shortcoming are discussed in the next section.

4. EMA TECHNIQUES

This section presents some available techniques of EMA provided by studies to date. The techniques can be further categorised into three main groups according to their focus: costing analysis, investment appraisal and performance management. The first category includes life cycle assessment (LCA), activity based costing (ABC), and material flow cost accounting. An EMA tool for investment appraisal is total cost assessment (TCA) which is basically an analysis based on capital budgeting. Meanwhile balanced scorecard assists entities to measure comprehensively, including environmental concerns, in terms of performance management or evaluation.

4.1 EMA Tools for Costing Analysis

4.1.1 Life Cycle Assessment (LCA)

Environment professionals have acknowledged that production activities may affect supplies of natural resources and the environment quality (US Environment Protection Agency, 1995b). The adverse environmental impacts may occur at each stage in product

life cycle. A means to examine the environmental impacts of a product or activity across its entire life cycle from raw materials until disposal called life cycle analysis (LCA) (US Environment Protection Agency, 1995b). Bennet and James (1997:34) defined the LCA as "a systematic process for evaluating the lifecycle costs of a product or service by identifying environmental consequences and assigning measures of monetary value to those consequences". Kreuze and Newell (1994:39) emphasized that the LCA should comprise the full cost analysis of the products' life cycle, including both the operation and the system of the life cycle, "from research through disposal, from cradle to grave". The LCA includes "identifying and quantifying energy and materials used and wastes released to the environment, assess their environmental impact, and evaluating opportunities for improvement" (US Environment Protection Agency, 1995b:24). The LCA will generate data on environmental releases and their effects which in turn enable entities to identify pollution prevention opportunities.

4.1.2 Activity Based Costing

Medley (1997) and Scavone (2006) contended that activity based costing (ABC) is a good tool for calculating comprehensive cost. The ABC enables entities to allocate all cost, including environmental cost, to the cost centres and cost drivers based on the activities (Scavone, 2006). Five main allocation to be considered in the ABC includes volume of emissions or waste, toxicity of emission and waste treated, environmental impact added (volume x input per unit of volume), volume of the emissions treated and relative costs for treating different kinds of emissions" (Schaltegger and Muller, 1997, cited in Scavone, 2006:1279). In addition, the ABC can be linked with the LCA, as acknowledged by Beer and Firned (2006:551), "activity-based costing improves internal cost calculation by allocating costs typically found in overhead accounts to the polluting activities and products that are determined by quantitative life cycle assessment procedures”.

Bennet and James (1997) claimed that another essential role of the ABC is to uncover the major-part of environment-related costs such as energy, water, waste disposal and the salaries of environmental staff which are commonly recognised as overheads. These costs are more likely to be hidden from managers’ evaluation particularly on cost reduction strategies. The ABC, hence, will create more accurate cost information not only for better product pricing but also for reducing entire cost and supporting pollution prevention projects (Bennet and James, 1997).

4.1.3 Flow Cost Accounting

Flow cost accounting refers to material and energy flow analysis (Staniskis and Stasiskiene, 2006). Gibson and Martin (2004:49) contended that material flow analysis is basically “intended to define the material and energy flows moving through a valuecreating system (such as business) over a certain period”. Incorporating EMA perspective, the flow cost accounting includes “evaluation of cleaner production potential at the plant level, preliminary estimate of waste generation costs, in-depth analysis of selected assessment focuses (quantification of the volume and composition of various waste and energy streams and emissions as well as a detailed understanding of the causes of these waste and energy streams and emissions)” (Staniskis and Stasiskiene, 2006:1255).

Flow cost accounting basically views a company as a material flow system which is divided into various production steps and cost centers. This includes the classical material flows along the value-added chain, from raw materials into finished product. It also comprises all material losses along the logistic chains, such as rejects, scraps, chipping, expired items, or damaged products, which then leave the firm as environmentally and economically undesirable value (solid waste, effluent, emissions) (UN DSD, 2001).

4.2 EMA Tool for Investment Appraisal

4.2.1 Total Cost Assessment (TCA)

Similar to LCA, total cost assessment (TCA) assists companies in terms of pollution prevention (US Environment Protection Agency, 1995b; Medley, 1997). The TCA, however, includes environmental costs into capital budgeting analysis. It identifies economic cost and areas of cost savings from pollution prevention in traditional costing analysis. As defined by US Environment Protection Agency (1995b:10), the TCA is “the long-term, comprehensive financial analysis of the full range of costs and savings of an investment experienced by the organization making the investment”. The TCA is beneficial in assessing an investment project and conducting budgeting analysis.

4.3 EMA Tool for Performance Management

4.3.1 Environmental Balance Scorecard (EBS) or Sustainability Balance Scorecard (SBSC)

Environmental perspectives can be incorporated in balance scorecard (Scavone, 2006). Environmental balanced scorecard (EBS) can act as a comprehensive performance management tool in an organisation. Scavone (2006:1281) defines EBS as “a set of measurements that give top managers a fast, but comprehensive view of the business including the effects of operational and environmental measures on different company perspectives such as: customer satisfaction, internal improvement, research and training, and financial and other perspectives related to business strategy”. The EBS integrates environmental specific indicators into each of four aspects of balanced scorecard. Bennett and James (1997: 33) asserted that environmental integration in balance scorecard can be intended to ensure that “financial performance measures reflect environmental considerations: for example, by ensuring that environmental costs are identified and allocated to budgets”

A previous study has also recommended employing balanced scorecard, termed sustainability balance scorecard (SBSC), to link EMA with strategic management (Figge, Hahn, Schaltegger and Wagner, 2002). They suggested integrating environmental management aspect into balance scorecard as a single firm management tool. The SBSC may align all corporate activities, including ones that may be affected by and may impact on environment, to implement corporate strategies.

EMA tools discussed above have been claimed to provide considerable benefits for implementing companies. Several experimental studies which identified the advantages of EMA implementation will be presented in the following section.

5. BENEFITS OF EMA APPLICATION

Some researchers have attempted to examine benefits of EMA implementation. Benefits derived from EMA application include cost reduction (Burrit and Saka, 2006; US Environmental Protection Agency, 2000), innovation (US Environmental Protection Agency, 2000; Hendro, Ferreira and Moulang, 2008), cleaner production (Gale, 2006; Staniskis and Stasiskiane, 2006; Burrit, Herzig and Tardeo, 2009), better product pricing and increased shareholder value (Staniskis and Stasiskiane, 2006). These benefits will in turn improve corporate reputation from launching environmentally-friendly products into the market and performing corporate activities with less harmful affects on surrounded environment. Some studies discussed in this section comprises Buritt and Saka (2006) which evaluated EMA implementation in Japan, US Environmental Protection Agency (2000) which presented some examples of corporate that have benefited from innovations in supply chain management, and Staniskis and Stasiskiane (2006) which investigated EMA application in Lithuania.

Burritt and Saka (2006) assess benefits of EMA implementation as to eco-efficiency in some companies in Japan[3]. Utilising material cost flow analysis enabled Tanabe Seiyaku to identify costs of waste processing and losses from processes on large raw material. The cost analysis has benefited Tanabe Seiyaku on cost saving as well as relevant monetary and physical environmental information. Evaluation on Nippon Oil, Ricoh, Canon Schweiz and Hitachi revealed that they have employed eco-efficiency measures to further improve their environmental management. In addition, Hitachi and Fujitsu have factored in eco-efficiency measures into product development stage. Implementing eco-efficiency indicator has assisted them to use more efficient energy and resources in developing their products.

US Environment Protection Agency (2000) assess implementation of EMA in terms of innovations within lean and green supply chain. Some companies worked closely with their suppliers to identify environmental cost saving. In purchasing innovation, Nortel and Intel, electronic companies, have experienced considerable saving and reduced waste. GM cut its disposal costs by $12 million during 1987-1992 from materials handling innovation, particularly in developing reusable packaging system with suppliers. Public Service Electric and Gas Company saved more than $2 million in 1997 by decreasing storage requirements and reducing carrying costs of disposal, which was previously hidden as component of overhead cost. Andersen Corporation benefited a 50% return on investment of wood waste innovation in its manufacturing process. Commonwealth Edison, electric utility company, gained $2 million annually for reducing its landfill disposal volume. Kodak recycled 77 to 86 percent of camera materials from return products and saved significant costs. These examples provide evidence that innovations toward lean and green supply chain have enabled companies and their partners in the supply chain to gain significant cost saving form environmental consideration.

Staniskis and Stasiskiene (2006) investigate EMA implementation in Lithuania[4]. EMA acts as a link between environmental aspects and shareholder value. Lithuanian companies utilised total cost assessment (TCA), flow cost accounting and other types of comprehensive, long term financial analyses of cleaner production to identify financial indicators of cleaner product investment. Evaluation on EMA program in Lithuanian companies and analysis of 38 cleaner production investment projects revealed that EMA assisted companies to reduce their operating costs, better price the products as well as save natural resources. They concluded that EMA enable companies to uncover environmental costs which commonly are hidden in overhead costs and neglected by managers.

6. CONCLUSIONS

Increasing awareness of environmental issues by stakeholder implies that organisations can no longer ignore environmental impacts of their activities. Environmental management accounting, as part of environmental accounting, may assist managements to address this issue, particularly by providing related environmental information for decision making purpose. Environmental management accounting is not totally different from conventional management accounting. It is a better management accounting which focuses on incorporating environmental aspects of firm activities, both physical and monetary portions.

Environmental costs cover all costs incurred concerning environmental protection such as emissions treatment as well as wasted material, capital and labour which so called 'non product output' as a result of inefficiency production activities. Based on their historic development of awareness, environmental costs can be further classified into four categories: waste disposal and emission treatment, prevention and environmental management, wasted material purchase value and production cost of non-product cost. Different firms may consider different elements into environmental costs but it is important that all significant and relevant costs are incorporated for sound decision making purpose.

Some available techniques of EMA can be employed to meet specific need of entities, namely costing analysis, investment appraisal and performance management. The EMA tools include life cycle assessment (LCA), activity based costing (ABC), and material flow accounting, total cost assessment (TCA), and environmental balance scorecard (EBS) or sustainability balance scorecard (SBSC).
Cost saving, resources saving and better cost pricing are obvious advantages that experienced by EMA implementing companies. Moreover, some studies have noted that EMA associates with innovation and cleaner production. EMA, therefore, leads to increased shareholder value and improved firm reputation.

REFERENCES

Bennett, M. & James, P. (1997), Environment related management accounting: current practice and future trends, Greener Management International, Spring, 17: 33-51

Burritt, R.L. (2004), Environmental management accounting: Roadblocks on the way to the green and pleasant land, *Business, Strategy and the Environment*, 13: 13-32

Burritt, R.L., Hahn, T. & Schaltegger, S. (2002), Towards a comprehensive framework for environmental management accounting – Links between business actors and environmental management accounting tools, *Australian Accounting Review*, 12(2): 39-50

Burritt, R.L. & Saka, C. (2006), Environmental management accounting applications and eco-efficiency: Case studies from Japan, *Journal of Cleaner Production*, 14: 1262-1275

Burritt, R.L., Herzig, C., & Tadeo, B.D. (2009), Environmental management accounting for cleaner production: The case of a Philippine rice mill, *Journal of Cleaner Production*, 17: 431-439.

Dierkes, M. & Preston, L.E. (1977), Corporate social accounting reporting for the physical environment: A critical review and implementation proposal, *Accounting, Organizations and Society*, 2(1): 3-22

de Beer, P. & Friend, F. (2006), Environmental accounting: A management tool for enhancing corporate environmental and economic performance, *Ecological Economics*, 58: 548-600

Figge, F., Hahn, T., Schaltegger, S. & Wagner, M. (2002), The sustainability balanced scorecard – linking sustainability management to business strategy, *Business, Strategy and the Environment*, 11: 269-284

Gale, R. (2006), Environmental management accounting as a reflexive modernization strategy in cleaner production, *Journal of Cleaner Production*, 14: 1228-1236

Gibson, K.C. & Martin, B.A. (2004), Demonstrating value through the use of environmental management accounting, *Environmental Quality Management*, Spring: 45-52

Hendro, B., Ferreira, A. & Moulang, C. (2008), Does the use of environmental management accounting affect innovation? An exploratory analysis, *31st Annual Congress of the European Accounting Association*, Rotterdam, 23-25 April 20

Kreuze, J.G. & Newell, G.E. (1994), ABC and life cycle costing for environment expenditures, *Management Accounting*, February: 38-42

Mathew, M.R. (1997), Twenty-five years of social and environmental accounting research: Is there a silver jubilee to celebrate?, *Accounting, Auditing & Accountability Journal*, 10(4): 481-531

Medley, P. (1997), Environmental accounting – what does it mean to professional accountants?, *Accounting, Auditing & Accountability Journal*, 10(4): 594-600

Ullman, A.A. (1976), The Corporate environmental accounting system: A management tool for fighting environmental degradation, *Accounting, Organizations and Society*, 1(1): 71-79

United Nations Division for Sustainable Development (2001), *Environmental Management Accounting Procedures and Principles*, Prepared for the Expert Working Group on "Improving the role of government in the promotion of environmental management accounting", New York

Unites States Environmental Protection Agency (1995a), *An Introduction to Environmental Accounting as a Business Management Tool: Key Concepts and Terms*, June, EPA, Washington D.C.

United States Environmental Protection Agency (1995b), *Federal Facility Pollution Prevention Project Analysis: A Primer for Applying Life Cycle and Total Cost Assessment Concepts*, EPA, July, Washington D.C.

United States Environmental Protection Agency (2000), *The Lean and Green Supply Chain: A Practical Guide for Materials Managers and Supply Chain managers to Reduce Costs and Improve Environmental Performance*, January, Washington D.C.

Scavone, G.M. (2006), Challenges in internal environmental management reporting in Argentina, *Journal of Cleaner Production*, 14: 1276-1285

Schaltegger, S. & Burritt, R.L. (2000), *Contemporary Environmental Accounting – Issues, Concepts and Practice*, Greenleaf Publishing, Sheffield, UK

TOPIC:

MACROECONOMICS AND MONETARY ECONOMICS

MARLIZA MOHAMED

PRINCIPAL ASSISSTANT DIRECTOR OF INLAND REVENUE BOARD OF MALAYSIA

POST GRADUATE STUDENT OF UNIVERSITY OF MALAYA

eMAIL: marlizamrmd@yahoo.com

TITLE:

THE UNDERGROUND ECONOMY (UE) AND INCOME INEQUALITY BY THE CHARACTERISTICS OF DIRECT TAX EVASION

TITLE:

THE UNDERGROUND ECONOMY (UE) AND INCOME INEQUALITY BY THE CHARACTERISTICS OF DIRECT TAX EVASION

MARLIZA MOHAMED

PRINCIPAL ASSISSTANT DIRECTOR OF INLAND REVENUE BOARD OF MALAYSIA

Presenter: 0020

THE UNDERGROUND ECONOMY (UE) AND INCOME INEQUALITY BY THE CHARACTERISTICS OF DIRECT TAX EVASION

Abstract

Despite of Malaysia's impressive reduction in poverty rate, rising per capita income and increased human development index, less than 10% of households pay income tax, with less than 5% contributing to more than 70% tax revenue. These disproportionate figures with moderate growth of consumer price index, a sharp rising private consumption and barely improved inequality Gini index spur calls for "unfair wealth" examination. This paper examines the characteristics of direct tax evasion as the unreported income to infer the features of the underground economy and its interrelationship with income inequality. The unreported income is economically selective and correlate positively with income levels (income earned and GDP contribution). Its distribution is skewed more when compared to the reported income and is relatively large in the construction and manufacturing industries; timber logging, petroleum and vehicle sectors; jobs in the construction and at managerial level; and businesses with more tax deduction opportunities. The institutional unreported income is at least two folds of individual unreported income, but their non-compliant rates are identical, with about 50% of income earned not reported. The low to moderate enforcement ability (20%) and low tax evasion risk (8%) provide a note of urgency to the enforcement agencies. To summarize, the substantial economically selective left skew income distribution has to some extent contributed to an overall income inequality and the proliferation of a "spendthrift society". This "unfair wealth", is not easy to tackle but if left unchecked, will lead to a wider income disparity.

JELclassification code: E26, H26, H50 O41

Keywords: Underground economy, Income distribution, Tax evasion, Enforcement

Introduction

Economists believed that part of the economic activities are not covered by GDP measurement because people would conceal prohibited activities to avoid detection. This leads to the conceptualization of an economic gap between the "potential economy" and the official economy (GDP). This economic gap is studied as a "second economy" in various notions, with intermixed definition, plagued in wide scope and vague concepts. Its long term considerable socio-economic impacts have led the economists employing many studies on the issues of UE. The anecdotal evidences of UE in Malaysia motivate this study to estimate the size and its features relating to income inequality. The findings reveal that the size of UE is substantial, prominent in upper income level and economically selective in left skew income distribution within and across economic industries, business and job sectors. The "private benefit" is an unfair wealth that partly contributes to an overall income inequality and "spendthrift society". This paper begins with an overview on the UE internationally and its visibility in Malaysia.

Section 2 discusses the literature on the association between tax evasion and the UE. The objectives, hypotheses, conceptual framework and methodology are laid out in Section 3. Section 4 illustrates the statistical analyses and interprets the results. Section 5 qualifies estimations with some concluding remarks.

Overview: The underground economy (UE) and its visibility in Malaysia

From a rational view; a rising GDP per capita would create more desire wish and materialistic attitude towards life, causing people to seek as much "private gains", which are incentives for underground activities. By nature the GDP per capita would associate with the living standards and "material wish" that push people entering activities of earning as much profit. The (UE) is a natural phenomenon with participants ranging from poor to rich people. People use rational thinking when make decision whether to remain in the official economy (OE) or enter the UE for various reasons such as for survival needs, avail "opportunities" that should not be missed, out of greed or to express some owns dissatisfaction or simply a "Spiro effect habit". Its presence is acceptable, but its size and impacts such as tax loss and income inequality are immense socio-economic problem if not attended.

The Malaysia's direct tax reform towards a lower tax burden characterized by narrower tax scope, lower tax rates, more tax deductions and lucrative tax incentives, has partly contribute to the tremendous growth of the OE. Since its independence in 1957, the economic structure has transformed from a resource-based to market-based with GDP composition mix from 29.1%, 24.63% and 43.2% (1972) to 9.1%, 41.6% and 49.3% (2010) in agricultural, industrial and service sectors respectively. Over these decades, the income from government sectors dropped from 0.12 % to 0.067% as share of GDP meaning about half was displaced by income from private sectors. The 2.22 million tertiary educated labor force with 75% employees in 2010 is comparable with the tax base structure consisting of 2.5 million individual tax payers with 72% reported salary income. The indicators of economic development over 1957 to 2010 are impressive; there was a large reduction in the poverty rate from 50% to 3.5%; a 32-fold increase of per capita income from USD 250 to USD 8,000; the human development index increase at 1.1% per annum from 0.542 (1980) to 0.744 (2010), placing Malaysia above the regional average; and a sharp rising private consumption. The economic performance is viewed well by the overwhelming positive indicators. However, if inequality is not an economic remote issue, the economic health is questionable. Inequality indexes remain or worsen; the Gini coefficients over the last 6 decades has never restored to its origin of independence, hovering around 0.5 index, (Figure 1); and the individual tax payers are only at the top 10% household; with less than 2% and 5% institutional and individual tax payers contribute to more than 80% and 70% of the tax revenue respectively.

Section 2: Literature on tax evasion and the underground economy (UE).

The UE is studied by the observable traces of related economic incidences as proxy indicators, the common one is tax evasion. Naturally people reduce tax liability by not reporting income earned to tax authority because tax is felt as an additional cost of doing business and accumulating wealth. The theoretical association between tax evasion and UE is that they both evade tax law. The participants of UE would conceal their prohibited activities from any authority including tax authority, to avoid detection and punishment. They both impair the distributional quality of the tax system towards tax loss and skew the allocation of resources towards non productive economy.

These common features justify why tax evasion is often used as proxy indicators; the magnitude of tax evasion is an indirect indicator of the size of HE (Tanzi (1983)); tax non compliance is a sign of UE (Feige (1979)); and Slemrod (2007) points out that tax evasion complements the UE. Empirical evidence of proportionate correlation is from Schneider & Enste (2000) and Silvani & Brondolo (1993); as share of GDP, the size of tax evasion is 45% and the UE is 65% in undeveloped country (Bolivia) whereas the size of tax evasion is 5% and the UE is 12% in developed country (New Zealand).

Among remarkable findings of tax evasion are the negative interrelationship between transaction visibility and unreported income, the skew income distribution and the association with income level and types. The common features of their operations are conducted on cash basis (minor audit trails); large tax grants (incentive for “creative accounting”); receipts that are not subject to withholding system (delayed collection); and profitable factors (large private benefit over participation risk). There are also consensus views that these associations are partly due to unequal opportunities and profitable factors

Bloomquist (2003) showed that income inequality associate negatively with income transaction visibility, based on the regression of the size of the shadow economy of 23 developed and developing nations on their Gini Coefficients. He explains for the rising unreported income as partly due to the widening variation in tax payer incomes and the associated decline in transaction visibility. Farzanegan, (2008) points out that the smuggling activities would affect GDP and income distribution, as well. Gupta (1992) concludes that the inequalities in the distribution of income and wealth have grown overtime because black incomes are relatively more unevenly distributed in favor of the rich. Vogel (1974) based on more tax evasion among people with an improvement in economic status than those with deterioration in economic status, concludes that its change could sometimes be a consequence rather than a cause of tax evasion.

Tax evasion is reported to increase with income level include; a steady decline of USA declared income as a proportion of reported income with income rises Mork (1975)); a positive association between the progressive income tax structure and tax evasion due to higher private benefit (Jackson Milliron (1986)); and high income earners in Australia evade more Wallschutzky (1984).

Tax evasion propensity varies across income source, occupation and economic sectors that are inversely associated with transaction visibility. Educated areas have generally low levels of compliance, due to knowledge of evasion opportunities (Witte & Woodbury (1985)); higher unreported income in "massive unregulated" construction industry (Kasipillai (1998)); "self employment" (Mirus and Smith (1997)); business sectors with large tax grants (Clotfelter (1983)); positive relationship between transaction visibility and reporting compliance (Klepper and Nagin, (1989)); evasion propensity that varies inversely with transaction visibility (Roth, Scholz, and Witte, 1989); self employed professions (Wong (2000)); income sources that are not subject to third-party information (Christian (1994)); and income sources that are not subject to withholding tax system (Cowell (1985)). Kirchler (1999) and Andreoni, Erard, and Feinstein (1998) indicate that the professional groups who are self-employed have more opportunities and greater freedom to decide about their finances, including evasion.

Studies that support the "profitable factors" are; Lewis (1982) who describes human as a rational calculator whose concerns is maximizing his or her own utility; people would balance between the "gains" from tax evasion and losses out as the "costs" when detected and punished by the tax authority based on Becker (1968) on the economic crime model; and the work on the economics of risk and uncertainty of Arrow (1970). However, tax law enforcement deters tax evasion only to some extent; it is negatively associated with the probability of detection and fine with consensus view that it is also moderated by other factors such as tax morale, social interactions or other motivation that exploit opportunities, Allingham and Sandmo (1972), Cowell (1989), Alm, Sanchez, and Juan (1995). Though there were some positive lessons learnt from prior audits," (Tversky & Kahneman, (1974)), audits are not adequate to curb tax evasion because the "experience" from the weakness of the prior audits has allow them to predict audits (Andreoni et al. (1998), Bayer (2006) and Slemrod (2007)) and the insignificant change in compliance behavior due to various factors that influence tax attitude; (Baldry (1987), Alm, McClelland, and Schulze (1992) and Chen (2003)). Spiro (1993) points out, "once this habit is developed, it is unlikely that it will be abandoned.

Section 3: Objectives, hypotheses, conceptual framework and methodology

The aim of this study is to explore the issues of the UE relating to income inequality. For this purpose there are four main objectives which are; to estimate the size of the UE; to identify the features of the income distribution in the UE; to estimate the enforcement ability in curbing the UE; and to estimate the enforcement efficiency.

The main components in the conceptual framework are the GDP, tax evasion as the proxy indicator and the wealth (poverty rate, GDP per capita and human development index) and unequal wealth (index of inequality i.e. Gini coefficient, disproportionate GDP per capita [household income bracket and tax contribution]), either as a consequence or causal of UE. Figure 2 illustrates a schematic presentation of the conceptual framework.

Following the objectives, the underlying hypotheses are as follows:

i. H1: The size of UE is substantial
ii. H2: The distribution of the UE is unequal
iii. H3: The enforcement ability to curb UE is inadequate
iv. H4: The detection risk of the UE is low

This study adopts the methodology of past studies where; tax evasion is measured by the difference between the taxable income calculated by audits and individuals (Clotfelter (1983)); Frey and Pomnrehne (1984) are of the opinion that information on UE may be derived from the efforts of tax authorities to uncover concealed income; and Slemrod (2007) indicate that 80% of tax evasion comes from understating of income rather than overstating deductions. It examines the tax audits (mild fraud activities) and tax investigations (serious fraud activities) in time series aggregate and disaggregates data over 2000 to 2009.

Section 4: Results and Interpretation

<u>How unreported income is presented: tax evasion scheme</u>

The unreported taxable income is examined by how it is wrongly presented, as the tax evasion scheme, whether samples are reliable unreported taxable income to infer the unreported economy. They are categorized as income omission; overstating expenses; inflating deduction, allowances and stocks; and the remaining as technical errors (Table 1). About 55% individuals' unreported taxable income and 25% institutional unreported taxable income are presented as income omission.

Considering that 82.78% individuals' and 73.05% institutional unreported taxable income are due to manipulation of both receipts and expenses, with the remaining as technical errors, give some comforts of estimating discrepancy due to unreported economy. This is based on both "concealed income" (income omission) and "converted income" [over stating expenses and inflating deduction/allowances]) are "missing taxable income", that led to a common output ie. a lower tax liability. Although the unreported taxable income (an empirical understatement of federal taxable income) and country's unreported income (an underestimation of total economic income) are not synonymous, they are assumed to represent value added income rather than re-distributional income to compensate for the narrow sample coverage of a likely larger size of UE.

<u>Unreported income by income level and economic sectors</u>

The number of tax evaders and amount of unreported taxable income are examined by income level and economic sectors to infer the same for the UE.

- <u>Institutional</u>

Figure 3 illustrates that over the period of 2000 to 2009, the percentage proportion of unreported income both in total and its components (individual [the most 34%] and institutional [at least 66%]) are higher in states of higher GDP level and GDP per capita. Figure 4 shows the consistent trend supporting that UE positively corresponds to state's wealth. The percentage proportion of institutional and unreported income vary across economic industries (Figures 5 and 6), with about 90% majority within the top 5 major industries (also the country's major GDP contribution); manufacturing, construction, wholesale/retail trade, finance and real estate. The percentage proportion of institutional and unreported income are disproportionate with ratios between 0.1 and 24 (Figures 7 and 8), and relatively large unreported income in the, financial services, manufacturing and construction industries, compared to number of institutional. It implies that most institutional participate in small amount and few in large amount, and is economically selective, large in financial services, manufacturing and construction industries. Apparently, there is a shift of UE mix from construction to manufacturing industries, and real estate and business services (Figures 7 to 8). In general, the UE grew in tandem with GDP contribution by economic industries as summarized in Table 2 and Table 3.

- Individual

As illustrated in Figures 9 and 10, compared to institutional, the business individuals' UE which is four times larger than employees is also within the top five major economic industries with the construction and sales industries gradually displaced by real estates and business services. However, the percentage proportion of participants and unreported taxable income are more proportionate. The UE is further examined into narrower business sectors, categorized into 21 items of business by cross tabulating the economic industries and business sectors, as summarized in Tables 5 and 6. The UE is relatively large in business of vehicles, petroleum, food, timber and real property and lower in voluminous business of food and business on commission income. It is also more prominent in occupation and professions that are related to construction services (engineers, surveyors and architects), compared to doctors and legal/accountants.

Income distribution

As a measure of relative income distribution, the skew is estimated by the mean to median ratio.

- Institutional

The income distribution of both institutional reported and unreported taxable incomes are in left skew with mean to median ratio from 1 : 9.83 to 1: 20.04 (Table 6) and 1: 18.84 to 1: 28.09 respectively (Table 7). The average mean to median ratio of the reported income is 1: 14.36 and 1: 22.73 for unreported income. The left skew income distribution implies that the distribution of tax base for both reported and unreported incomes are unequal. But the more left skew distribution of the UE compared to the reported income suggests that that in addition to the already left skew income distribution in the official economy, the more skew income distribution in the UE worsens the overall income inequality.

- Individual

Like institutional, most individuals participate in the UE in small amount and few in large amount. The mean to median ratios of the individual unreported income are examined by economic industries, business and job sectors. For simplification, the ratios of the 21 items of business are categorized into five groups with the lowest approximating the normal distribution and the largest representing the largest left skew distribution (Table 8).

By states wealth, the unreported income approximates a "normal distribution" in the states of lower GDP level, "moderate to moderate upper skew" in states of average GDP level, "larger skew" in states of upper GDP level, and "largest skew" in states of Pahang, Sabah and Sarawak, where logging sectors are common.

By economic industries and business sectors, the unreported income approximates a "moderate to moderate upper left skew" distribution in most economic industries (low in business on commission) and "large skew" in certain sectors (construction industry, rental in real property and sectors dealing with vehicles [sales and services]). The unreported income in director services and timber sectors (logging contractors and sawmills) is in "large and largest skew" distribution (an average ratio of more than 10), consistent with the "largest skew" distribution in the states of Pahang, Sabah and Sarawak and in the agricultural industry.

The asymmetrical links between the number and amount, number of enforcement forces and effective audit framework are two critical factors. We need less number of forces with knowledge and experience to tackle prominent sectors. At the same time we need appropriate audit selection and effective audit framework to uncover as much unreported income. For cost effective enforcement, the following ratios provide some guidance for designing audit framework selection:

i. Need to audit a large number of cases for a "substantial" tax revenue
   - Unreported commission income: the percentage proportion of participants is 4 times larger than the unreported income (1 : 4)
   - Unreported income in business of food: the percentage proportion of participants is 2 times larger than the unreported income (1 : 2)

ii. Need to audit few cases for a "substantial" tax revenue
   - Unreported income in business of petroleum (kiosks): the percentage proportion of participants is 3 times smaller than the unreported income (1/3 : 1)
   - Unreported income business of timber (sawmills): the percentage proportion of participants is 13 times smaller than the unreported income (1/13 : 1)

As the income tax rate is in progressive of 9 bands, the tax raised on individuals may be at any rates depending on the corresponding income level. The average income level of the individuals in the UE is estimated based on the average tax rate of the additional tax raised in audits, using disaggregate and aggregate data. The disaggregate unreported income of 2008 and the aggregate unreported income of 2000-2009 are divided by the corresponding additional tax raised. Both estimates generate tax rates between 19% and 24%. The mid-point of the range (21.5%) is assumed the average tax rate and it approximates the second top marginal progressive tax rate (22%), that corresponds to a taxable income of RM50,000 to RM100,000. After incorporating for the probable range of total personal reliefs ranging from RM20,000 to RM70,000, the average annual income of individual tax evaders is around RM70,000 to RM170,000, approximating the country's top 10% income bracket. This "upper income level" correlation synchronizes with states wealth and economic sector correlations (by GDP level contribution). It is also consistent with priori studies where tax evasion was highest in the high-tax group and lowest in the low-tax group, and is explained as more profitable "private gains" in the upper income level, based on tax attitudes of taxpayers at different tax rates as the standard tax rate, Lewis (1982).

<u>Unreported income in fraud cases</u>

The more serious degree of fraud operations were audited by investigation forces. The high degree of fraud is assumed to reflect a more serious UE. These serious cases are examined separately from ordinary audit cases (mild cheating) to determine whether the characteristics of unreported income differ by "intense" participation efforts.

The results are summarized in Table 10. Like the income distribution in the "mild fraud" evaders, the largest skew in the "serious fraud" evaders as proxy for "intense" UE is also in the construction and manufacturing industries; and timber business. Business of vehicles, food, electrical products and accommodation (rental income) are also the prominent underground sectors. As the characteristics of investigation and audit cases are alike, the features of the UE are assumed identical regardless of whether the prohibited activities are attempted vigorously or not.

The individual participants of UE are likely male (90.21%) with 52.77% within the age group of 40 to 49 or 76.38% within the age group of 40 to 59. The ratio of the percentage proportion of the labor force to participants of UE within this age group is 1 : 1.4, a 40% evidence of age group association. The "maturity" association synchronizes with the prominence of managerial and upper income level. From a rational view, this position post corresponds to more desire and earnest wishes for better living, creating financial pressures as "opportunities" for underground activities.

Maturity is also likely to increase with age, as rational viewers would mould their decision to fit opportunities and are able to evaluate the country policy and purchasing power, questioning whether their taxes are spent wisely and efficiently with high expectation on quality public service in return. Any dissatisfaction against poor government regulation and services would be argued as to starve the government by the unwilling sharing of earnings to tax, Brownlee (1996)

Size

The UE size is estimated by regression where the reported income (Rptinc) is regressed on unreported income (Unrptinc) of disaggregate audit data in OLS double log models. The equations of the output are summarized below followed by the interpretations on the UE size.

- Institutional (n=348 of 2005-2009 data)

Ln Unrptinc = 10.5775 + 0.4786 Ln Rptinc - Equation (1)

t - value (16.0132) (10.8434)

R^2= 0.2769 F=117.5786 DW = 1.8336

The reported and unreported income is from low to moderate positive correlation. The variable coefficient indicate that; a 10% increase of reported income will cause 4.786% of unreported income, holding other variables constant; meaning about 47.86% of income earned is not reported.

- Individual (n= 2,420 of 2005 data)

LnUnrptinc = 4.8205 + (0.4129) LnRptinc - Equation (2)

t-value (22.8260) (26.0132)

R^2= 0.4126 F=780.2810 AR(1) of inv AR roots 0.3445 (t=17.0775)

AIC = 3.3355 SIC = 3.3432

The reported and unreported income is from low to moderate positive correlation, in short run. The variable coefficient indicate that; a 10% increase of reported income will cause 4.129% of unreported income, holding other variables constant; meaning about 41.29% of income earned is not reported

- Individual (n= 658 of 2008 data)

LnUnrptinc = 3.9620 + (0.4856) LnRptinc - Equation (3)

t-value (4.0545) (6.2418)

R^2= 0.2174 F=37.8032 AR(1) of inv AR roots 0.2040 (t=17.0775)

AIC = 3.6822 SIC = 3.7397

The reported and unreported income is from low to moderate positive correlation, in short run. The variable coefficient indicate that a 10% increase of reported income will cause 4.856% of unreported income, holding other variables constant; meaning about 48.56% of income earned is not reported. The average sum of institutional (47.86%) and individual (41.61%-55.46%) unreported income correlation indicate that about 50% of income earned is not reported. Hence, for cost effective enforcement, audit designing selection must consider both economic association as well as the amount of reported income.

Enforcement ability

UE is likely a recurring phenomenon because people enter the UE when it is felt that the "private benefit" (lower tax liability) outweigh the losses to taxes (tax evasion risk – detection, enforcement success rate and fines). To curb the UE it is believed that enforcement would be the dominant method. To determine the capability of curbing UE, the audited income (reported plus unreported income – [Pre-taxinc]) is compared with the average reported income in three adjacent post audit years [Post-rep], by OLS in double log models. The results are as follows:

- Institutional; n=194

Pre-taxinc = 12.9935 + 0.0561 Post-rep - Equation 4

t-value (29.6720) (1.6555) $R^2 = 0.0141$ DW=1.8486

- Individual; n=72

Pre-taxinc = 12.4329 + 0.01194 Post-rep - Equation 5

t-value (23.730) (0.2263) $R^2 = 0.0007$ DW=2.2585

The insignificant Pre-taxinc and Post-rep income relationship for both institutional and individuals indicate that the future reported incomes are not predictable based on the current taxable income. This is consistent with priori tax evasion models. The poor enforcement ability may be explained by negative tax morale where people continue to evade either because they have learnt the tax authority "weakness" from audit experience or they gamble the risk of immediate audit likelihood is unlikely (low immediate detection). This poor response implies that audit is not adequate to educate or threaten tax evaders to comply with tax rules. Alternative to negative attitudes towards compliance, the fines on tax evasion could have adequately burden the operating cost and dampen the future business profit. The naturally "lessons never learnt" phenomenon would have craved people to live beyond their means either by "hook or by crook", demanding "private benefit" in this case evading tax liability. It follows that if enforcement does not deter enough, tax evasion, UE and income inequality is likely to increase and widens.

Participation risk of entering the UE

The participation risk of entering the UE is determined by computing the enforcement efficiency which is the product of audit probability (detection rate), success capture generating taxes and enforcement success rates (ESR). Annually, about 15% to 20% (a midpoint of 17.5%) of tax files in the tax base are selected for audit, based on some discrepancy of gross profit margin ratio or other gap indexes. In general audit selection is based on large turnover, gross profit margin ratio and some income gap. The success captured cases are the finalised audit or investigation cases and more than 90% generate tax with tax evasion fines. The ESR is based on the proportion of finalized cases over total audit or investigation cases.

The audit ESR is; between 37.44% and 70.18% (average of 54.96%) for individuals; and between 30.21% and 63.07% (average of 45.65%) for institutional. Considering both audit and investigation cases, the overall investigation ESR is between 37.04% and 43.13%, (average of 40%). In total, ESR is between 30% and 70% (midpoint of 50%). The product of audit probability (17.5%) by ESR (50%) and success capture generating tax (90%) gives an estimate for enforcement efficiency as 8% (17.5% x 90% x 50% ~ 8%). The amount of fines imposed is based on the degree of tax evasion (amount of unreported income and evasion scheme). The mean range is; within 28.36% to 61.58% for institutional; and within 38.36% to 58.45% for individuals. The fines for "serious frauds" can be as high as 100% on the amount of tax raised.

To summarise, the participation risk of having to pay the "tax on the unreported income" plus an amount of "30% to 100% (as fines) on the additional tax raised" is fairly low (8%). In other words, a person who participates in the underground activities has 92% chance of gaining "private income" as benefit of UE by escaping tax liability. He would only face 8% risk of losing income up to twice the amount of tax if he had complied with the tax rules.

Concluding remarks

Several assumptions were made to justify the inference drawn from tax evasion data as reliable samples. The unreported taxable income is synonymous to unreported income; the unreported taxable income constitutes a large portion of the UE; tax evasion is largely due to income omission that gives some comfort as value added income rather than redistribution; and the country's labor force approximates the tax base structure.

The UE size is substantial (about 50% of GDP), relatively larger in states and economic industries with higher GDP contribution and individuals in the managerial and upper income level. The business unreported income is four times larger than employment income. The income distribution in the UE is more left skew than the official economy and is also economically selective within and across sectors (extreme skew in logging, petrol kiosks, electrical and food dealers). Although institutional UE constitutes a larger portion of the UE than individual UE, both do not report about half of the income earned, for at least in short run. Its substantial size is partly due to the shift of income level as seen by a rising per capita income and the shift of taxpayer's income towards reducing "transactions visibility" (economic transform from employment towards business sectors that may be potentially complex). These findings are consistent with past international studies, where their consensus views on the rising UE are due to income invisibility, opportunity and profitable factors.

The large and selective left skew income distribution of the unreported taxable income reflects an unfair “tax burden” and unfair “private income” (the UE). This unfair wealth setting is incidental and partly contributes to an overall income inequality and the sharp rising private consumption. An equal society is considered a lunatic expectation but a society of reducing inequality is a country excellence.

For cost effective and efficient enforcement, audit selection framework must account collectively for income level, less “visible” sectors and the varying disproportionate links between number of participants and amount. The low detection risk (8%), moderate enforcement efficiency (50%) and low enforcement ability (20%) highlights the urgency for better services and enforcement forces. Rationally, tax evasion risk could be increased by higher detection probability, early detection and intelligent gathering. Resources of knowhow, experience auditors, effective law and efficient system are essential to fit the dynamic economy. With regards to fines, the judiciary should consider the inflation rate and degree of offence to fit the crime.

Tables and Figures:

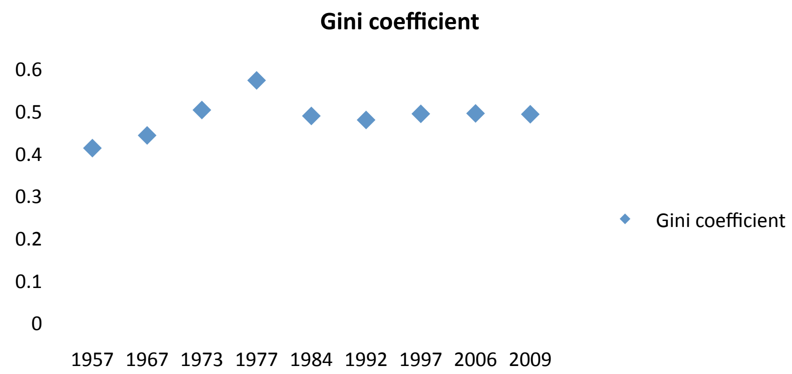


Figure 1: Trend of Gini coefficient since Malaysian's independence (1957)

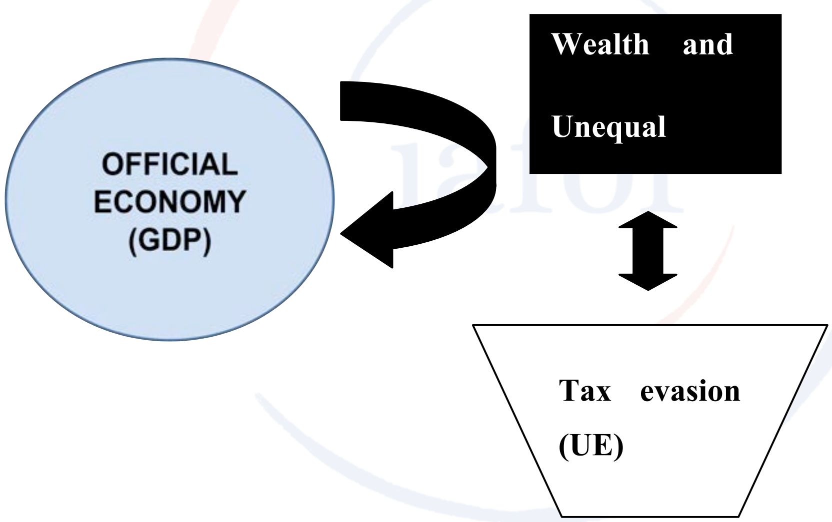


Figure 2: Conceptual framework

Table 1: Methods employed (tax evasion scheme) to reduce taxable income – in percentage proportion of tax evaders

Tax evasion scheme	Individual evaders (n=2,943 of 2008 data)	Institutional evaders (n=11,653 of 2003-2008 data)

No findings and technical solution	12.73	20.56
Income omissions	55.57	24.18
Fictitious expenditure	15.38	30.17
Omissions and expenditure	11.83	18.70
Incentive and allowance	4.09	5.29
Fictitious stocks	0.4	1.1
Total	100	100

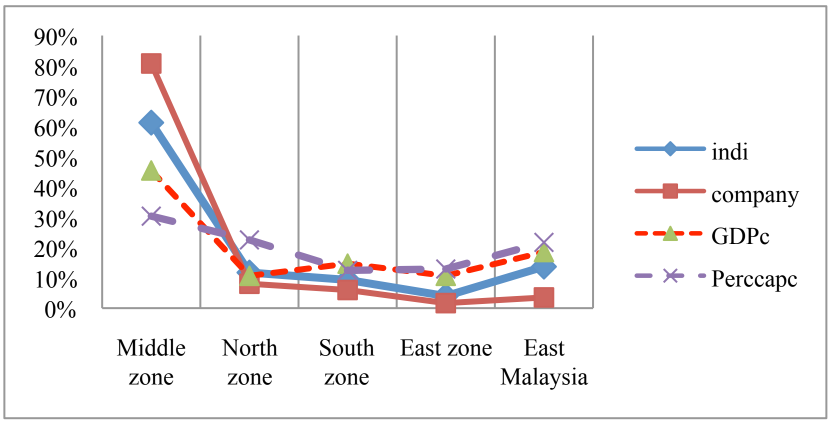
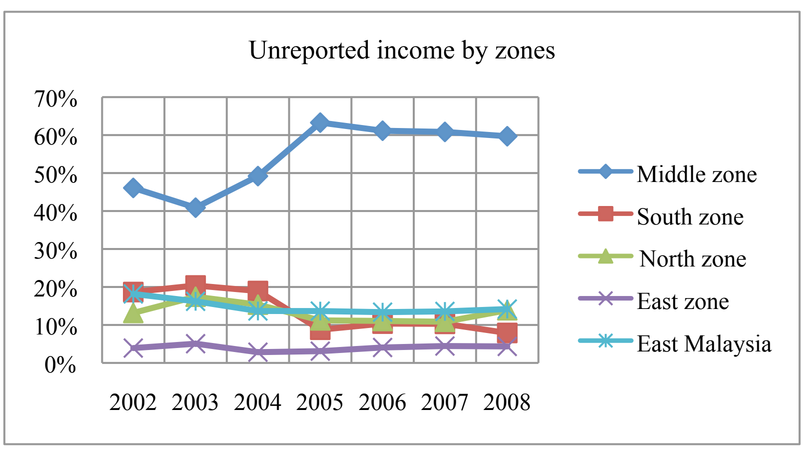


Figure 3: Percentage proportion of unreported income (institutional and individuals) compared to GDP and GDP percapita, by states categorized by GDP contribution



*** States in the middle zone has the highest GDP, followed by South and North zones.**

Figure 4: Trend of percentage proportion of unreported income by states categorized by GDP contribution

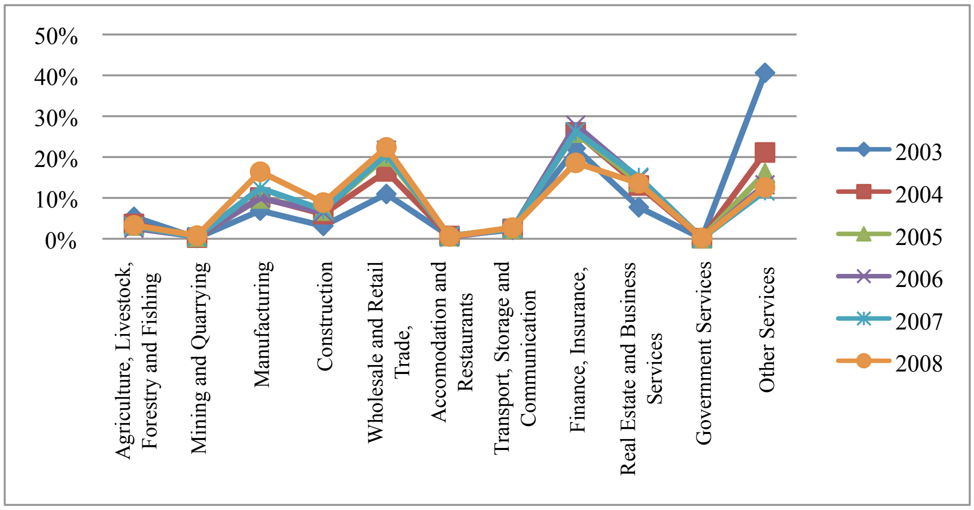


Figure 5: Percentage proportion of institutional tax evaders across economic industries

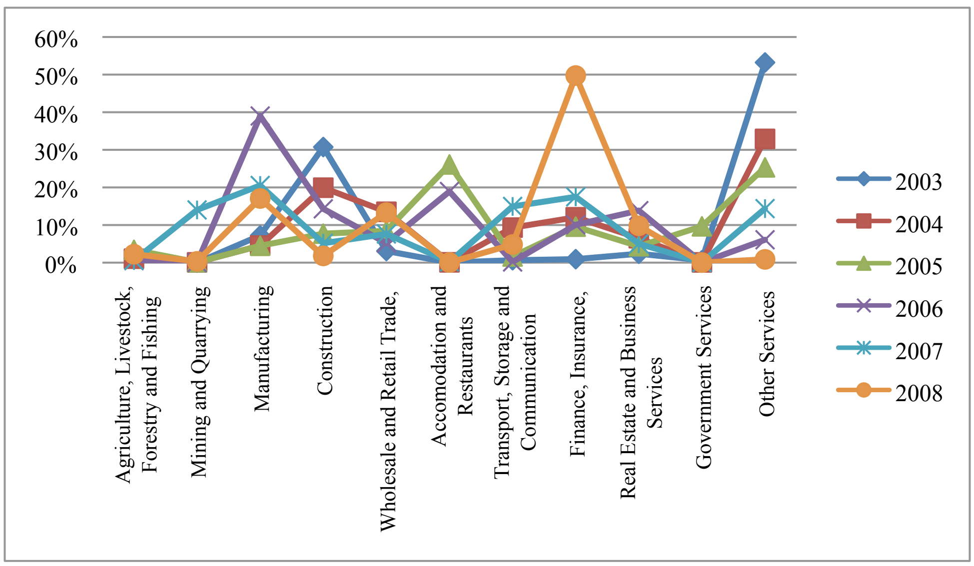


Figure 6: Percentage proportion of institutional unreported income across economic industries

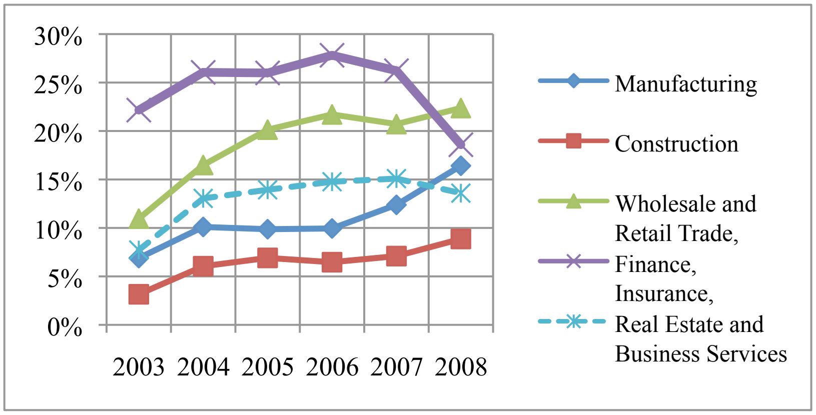


Figure 7: Percentage proportion of institutional tax evaders in the first top five industries

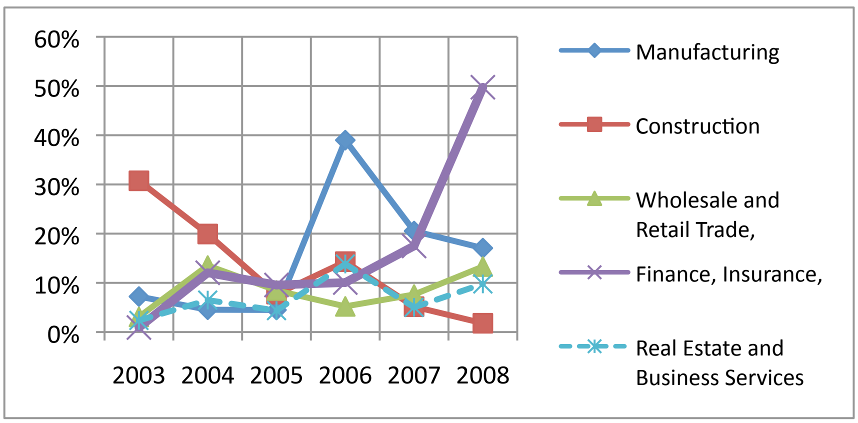


Figure 8: Percentage proportion of institutional unreported income in the first top five industries

Table 2: Percentage of institutional tax evasion by economic industries

Economic sector	2003	2004	2005	2006	2007	2008
Agriculture, Livestock, Forestry and Fishing	1.15%	1.05%	3.41%	0.57%	0.57%	2.23%
Mining and Quarrying	0.00%	0.07%	0.11%	0.01%	14.01%	0.34%
Manufacturing	7.22%	4.54%	4.49%	39.00%	20.53%	17.06%
Construction	30.74%	19.92%	7.71%	14.31%	5.16%	1.79%
Wholesale and Retail Trade,	3.09%	13.52%	8.46%	5.22%	7.63%	13.31%
Accomodation and Restaurants	0.03%	0.08%	26.11%	18.92%	0.20%	0.04%
Transport, Storage and Communication	0.64%	9.31%	1.63%	0.17%	14.95%	4.81%

Finance, Insurance,	**0.92%**	**12.05%**	**9.56%**	**10.06%**	**17.50%**	**49.75%**
Real Estate and Business Services	**2.37%**	**6.49%**	**4.37%**	**13.83%**	**5.03%**	**9.79%**
Government Services	**0.62%**	**0.06%**	**9.65%**	**0.05%**	**0.06%**	**0.02%**
Other Services	**53.23%**	**32.90%**	**25.33%**	**6.09%**	**14.37%**	**0.86%**
Total	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**

Table 3: Malaysia's GDP contribution by economic industries

Industrial origin	**% contribution in constant 2000 prices**				
	2005	**2006**	**2007**	**2008**	**2009**
Agricultural, forestry and fishing	**7.98%**	**7.95%**	**7.64%**	**7.49%**	**7.37%**
Manufacturing	**30.70%**	**31.08%**	**30.13%**	**29.85%**	**29.54%**
Construction, mining and quarrying	**12.72%**	**11.77%**	**11.47%**	**11.19%**	**10.97%**
Wholesale and retail trade	**11.40%**	**11.53%**	**12.19%**	**12.63%**	**12.87%**
Accomodations and restaurants	**2.25%**	**2.26%**	**2.35%**	**2.40%**	**2.43%**
Services: Finance and insurance	**10.04%**	**10.21%**	**10.67%**	**10.94%**	**11.23%**
Services: real estate	**4.55%**	**4.74%**	**5.27%**	**5.20%**	**5.32%**
Other services	**22.96%**	**23.22%**	**23.10%**	**23.12%**	**23.20%**
Total services	**37.55%**	**38.175**	**39.03%**	**39.27%**	**39.75%**
MINUS undistributed FISIM	**3.95%**	**3.86%**	**3.90%**	**3.96%**	**4.02%**
ADD import duties	**1.34%**	**1.11%**	**1.09%**	**1.15%**	**1.09%**
GDP at purchasers' prices	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**

- <u>Individual</u>

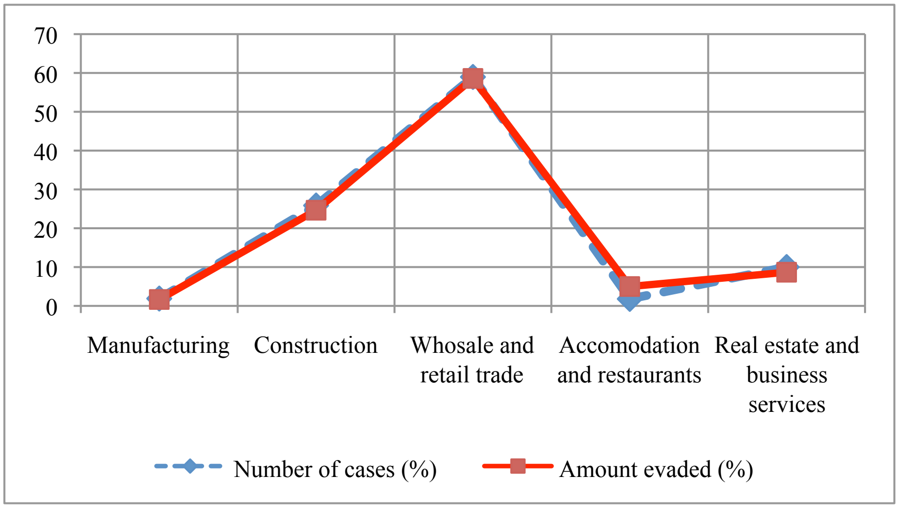


Figure 9: Percentage proportion of the individual tax evaders and unreported income in the first top five industries (2005 data)

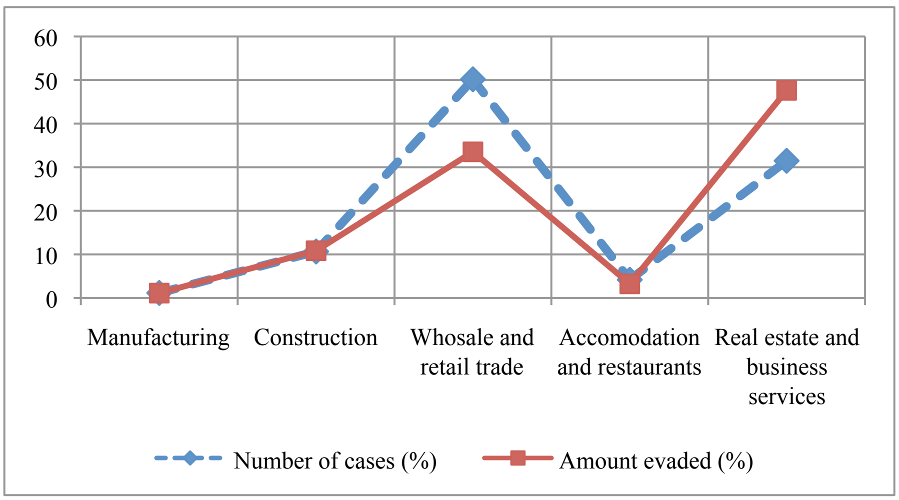


Figure 10: Percentage proportion of individual tax evaders and unreported income in the first top five industries (2008 data)

Table 4: Major percentage proportion of number of individual evaders by business sectors and economic industries

Economic industries	**Business sectors**	
2005 data (2,714 cases)		
Wholesale and retail trade	**Vehicles (26.48%)**	**Petrol kiosk (6.96%)**
Construction	**Retailers (32.53%)**	**Services* (67.47%)**
Business services	**Professionals (53.63%)**	**Commission (30.58%)**
Accomodation and restaurants	**Food outlets (83.13%)**	**Land lord (16.87%)**

2008 data (2,701 cases)		
Wholesale and retail trade	Vehicles (17.16%)	Petrol kiosk (10.65%)
Construction	Retailers (43.83%)	Services* (69.63%)
Business services	Professionals (57.42%)	Comission (9.62%)
Accomodation and restaurants	Food outlets (83.35%)	Land lord (16.65%)

Table 5: Major percentage proportion of individual unreported taxable income by major business sectors and economic industries

Economic industries	Business sectors		
2005 (2,714 cases)			
Wholesale and retail trade	Vehicles (19.13%)	Petrol kiosk (10.71%)	Timber (34.38%)
Construction	Retailers (21.46%)	Services* (78.54%)	
Business services	Professionals (72.02%)	Commission (10.30%)	Directors (2.03%)
Accomodation and restaurants	Food outlets (77.04%)	Land lord (22.96%)	
2008 (2,701 cases)			
Whosale and retail trade	Vehicles (22.31%)	Petrol kiosk (8.66%)	Timber (44.81%)
Construction	Retailers (32.48%)	Services* (75.48%)	
Business services	Professionals (43.10%)	Comission (2.75%)	Directors (12.10%)
Accomodation and restaurants	Food outlets (93.45%)	Land lord (6.56%)	

*Engineers, Quantity surveyor, architect, Contractors

Table 6: Distribution of institutional reported income (average ratio of 1:14.36)

	2003	2004	2005	2006	2007	2008
Number	58	58	58	58	58	58
Mean (RM million)	26.06	311.77	433.94	1074.63	1,538.41	1,391.08
Median (RM million)	2.65	22.50	27.47	79.03	76.75	106.66
Ratio	9.83	13.86	15.79	13.59	20.04	13.04

Table 7: Distribution of institutional unreported income (average ratio of 1:22.73)

	2003	2004	2005	2006	2007	2008
Number	58	58	58	58	58	58
Mean (RM million)	9.27	25.23	58.03	66.03	61.78	89.33
Median (RM million)	0.33	1.22	2.42	3.14	3.28	3.76
Ratio	28.09	20.68	23.98	21.03	18.84	23.76

Table 8: Distribution of individual unreported income

Mean-median ratio	Description of income distribution
1:< 2	Approximate normal distribution
1: 2-5	Moderate skew distribution
1: 5-10	Moderate upper skew
1: 10-20	Large skew
1: >20	Largest skew

Tabel 9: Micro analyses on individual and institutional tax evasion by fraud schemes (investigation cases)

<table>
<tr><td colspan="2">Individuals: n = 72 [39.13% sampling])</td></tr>
<tr><td colspan="2">Gender and age group</td></tr>
<tr><td>94% are males.
<table>
<tr><td>Age group</td><td colspan="2">Non compliant</td><td>mmrui</td></tr>
<tr><td>40-44</td><td></td><td></td><td>1:2.78</td></tr>
<tr><td>40-49</td><td>52.77%</td><td rowspan="2">76.38%</td><td rowspan="4">1: < 1.8.</td></tr>
<tr><td>50-59</td><td>23.61%</td></tr>
<tr><td>< 40</td><td>15.27%</td><td rowspan="2">23.62%</td></tr>
<tr><td>> 60</td><td>8.35%</td></tr>
</table>
</td><td>Most individual non compliance are male

About 50% non compliant individuals are within age group of 40-49 and 75% are within age group of 40-60.

Skewed distribution of unreported income within age group of 40-44</td></tr>
</table>

Economic industry

Industry	Non compliant		mmrui
Business services	46.30%	72.15%	1: 1 - 1.5.
Wholesale/retail	15.68%		
Construction	10.17%		1: 3.72
Real estate	58.8% are land lords		1: 1 - 1.5.

About 70% non compliant individuals are in business services; wholesale and retail; and construction industries.

Skewed distribution of unreported income for construction industry.

Rental income constitute about 60% underground real estate

Business sector

Wholesale/retail	Percentage proportion	
Food	27.5%	68.86%
Electrical goods	23.5%	
Vehicles	17.6%	

About 70% unreported income in the wholesale/retail deals with food, electrical and vehicles.

Job sector

Job sector	Non compliant	Age group: 40-49		mmrui
Director	29.41%	38.5%		1:1.6.
Partner	13.52%	59.1%		
Professions:	18.70%	39.4%		
Construction			51.55%	1: 2.72
Business			29.5%	1:1.6.
Total	61.63%	40-50%	81.05%	

About 60% non compliant individuals are senior executives

40%-50% non compliant senior executives are within the age group of 40-49.

About 50% non compliant professionals are in construction industry

About 80% non compliant professionals are in construction and business services

Skewed distribution of unreported income for

<table>
<tr><td></td><td>professions in construction industry.</td></tr>
<tr><td colspan="2" align="center">Company: n=197 [19%]</td></tr>
<tr><td colspan="2">Economic industry</td></tr>
<tr><td>
<table>
<tr><th>Industry</th><th>Non compliant</th><th>mmrui</th></tr>
<tr><td>Business services</td><td rowspan="3">85.18%</td><td rowspan="3">1:10-15</td></tr>
<tr><td>Wholesale/retail</td></tr>
<tr><td>Construction</td></tr>
<tr><td>Others</td><td></td><td>1:< 10</td></tr>
<tr><td>Manufacturing</td><td></td><td>1:>15</td></tr>
</table>
</td><td>About 85% non compliance deal with business services, wholesale/ retail and construction.
Skewed distribution of unreported income in manufacturing followed by business services, wholesale/ retail and construction</td></tr>
<tr><td colspan="2">Business sector</td></tr>
<tr><td>
<table>
<tr><th>Business sector</th><th colspan="2">Non compliant</th><th>mmrui</th></tr>
<tr><td>Contractors</td><td>55.5%</td><td rowspan="3">79.24%</td><td rowspan="3">1:<2</td></tr>
<tr><td>Food</td><td>13.13%</td></tr>
<tr><td>Vehicles</td><td>10.61%</td></tr>
<tr><td>Electrical</td><td></td><td></td><td>1:3.41</td></tr>
</table>
</td><td>About 80% non compliance deal with services, food and vehicles.

Moderate distribution of unreported income across business sectors, fairly large in electrical goods.</td></tr>
<tr><td colspan="2">By category of tax payers</td></tr>
<tr><td>
<table>
<tr><th>Individuals</th><th>Range</th><th>Average</th></tr>
<tr><td>Employees</td><td>1.27%– 7.62%</td><td>4.45%</td></tr>
<tr><td>Business</td><td>4.44%-10.14%</td><td>7.29%</td></tr>
<tr><td>Total</td><td>5.71%-17.76%</td><td>11.44%</td></tr>
<tr><td>Companies</td><td>84.64%-92.51%</td><td>88.56%</td></tr>
<tr><td>Total</td><td></td><td>100.00%</td></tr>
</table>
</td><td>Business individuals are twice likely to evade compared to employees.

Institutional and individuals constitute about 90% and 10% tax evasion respectively</td></tr>
</table>

mmrui = Mean to median ratio of unreported income

References

Adam, M.C. and Ginsburgh, V. 1985, 'The effects of irregular markets on macroeconomic policy: Some estimates for Belgium', *European Economic Review*, vol.29, no.1, pp. 15-33.

Allingham, M.G. and Sandmo, A. 1972, 'Income tax evasion: A theoretical analysis', *Journal of Public Economics*, vol.1, no.3-4, pp.323-38.

Alm J., McClelland, G.H., and Schulze, W. D. 1992, 'Why do people pay taxes?', *Journal of Public Economics ,* vol.48, pp. 21-38.

Alm, J., Sanchez, I., and Juan, A. D. 1995, 'Economics and non economic factors in tax compliance', *Kyklos,* vol. 48, pp. 3-18.

Andreoni, J.,Erard, B., & Feinstein, J. 1998, 'Tax Compliance', *Journal of Economic Literature,* vol.36, no.2, pp. 818-860.

Antonides, G., & Robben, H. S. J 1995, 'True positives and false alarms in the detection of tax evasion', *Journal of Economic Psychology*, vol. 16, pp. 617-640, viewed 26 Jun 2010,<http://www.msu.edu/user/prohorov/a.pdf./>

Arrow, Kenneth J & Lind, Robert C, 1970. 'Uncertainty and the Evaluation of Public Investment Decisions', *American Economic Review*, American Economic Association, vol. 60, no. 3, pp. 364-78.

Baldry J. C. 1987, 'Income tax evasion and the tax schedule: Some experimental results', *Public Finances*, vol.4, pp. 357-383.

Beck, P. J., Davis, J. S., and Jun, W. O. 1991, 'Experimental evidence on tax payer reporting under uncertainty'. *Accounting Review,* vol.66, pp. 535-558.

Becker, G.S. 1968 'Crime and Punishment: An Economic Approach', *Journal of Political Economy*, vol. 76, pp. 169-217.

Bloomquist, K.M. 2003a, 'US Income Inequality and Tax Evasion: A Synthesis', *Tax Notes International* vol. 31 no.4, pp. 347-367.

Bloomquist, K.M. 2003, 'Trends as Changes in Variance: The case of Tax Noncompliance' , IRS Research conference, June.

Chen, L. 2003, 'Tax Evasion in a Model of Endogeneous Growth', *Journal of Economic Dynamic*, vol. 6, pp.381-403.

Christian, C.W., 1994, "Voluntary Compliance with the Individual Income Tax: Results from the 1988 TCMP study, " *IRS Research Bulletin*, IRS Publication 1500 (Rev. 93-94)), pp.35-42

Clotfelter, C.T. 1983, 'Tax Evasion and Tax Rates: An Analysis of Individual Returns', *Review of Economics and Statistics*, vol. 65, pp. 363-373.

Cowell, F. A. 1985, 'The Economic Analysis of Tax Evasion', *Bulletin of Economic Research*, vol. 37, pp. 163-193.

Dubin, J., Louis, A. and Wilde, L. 1988, 'An empirical Analysis of Federal Income Tax Auditing and Compliance', *National Tax Journal*, vol. 41, no.1, pp. 61-74.

Farzanegan, M. R., 2008, 'Illegal Trade in the Iranian Economy: Evidence from a Structural Model, 409, Cairo. Feige, E. 1979: "How Big Is the Irregular Economy" *Challenge,* vol. 22, no. 1, pp. 5-13. Friedland, N., Maital, S., and Rutenberg, A. 1978, 'A simulation study of income tax evasion decision: An experimental approach', *Journal of Public Economics ,* vol. 10, pp. 107-116. Giles, D. E.A. and L.M. Tedds 2002, 'Taxes and the Canadian Underground Economy', *Canadian Tax Paper*, 106, Canadian Tax Foundation, Toronto/Ontario.
Frank, M. and Dekeyser-Meulders, D., 1977, 'A Tax Discrepancy Coefficient Resulting from Tax Evasion or Tax Expenditures', *Journal of Public Economics*, August, pp. 67-78.
Gupta, S.B. 1992, '*Black income in India',* Sage Publications, India Pvt Ltd.

Jackson & Milliron, 1986, 'Tax fairness seems to involve at least two different dimensions', <ctsi.anu.edu.au/publications/WP/46.pdf.>
Kasipillai, J. 1997, 'Aspects of the Hidden Economy and Tax Non-Compliance in Malaysia', Doctoral dissertation, The University of New England, Australia.

Kasipillai, J. 1998, 'An insight into the Workings of the Hidden Economy', *Asean Academic Management Journal*, 3:1

Klepper S., & Nagin, D. 1989, 'Certainty and severity of punishment revisited', *Criminology,* vol. 27, pp.721-746.

Mirus, R. 1997, 'Self Employment, Tax Evasion, and the Underground Economy: Micro-based Estimate for Canada. *Working Paper 1002*, International Tax Program, Harvard Law School.

Mork, K.A. 1975, 'Income tax evasion: Some empirical evidence,' *Public Finance*, vol.30, pp. 70-76.

Schneider, F., Enste, D.H. 2000, 'The Value Added of Underground Activities: Size and Measurement of the Shadow Economies and shadow Economy Labor Force all over the world', *IMF Working paper*, no.26.

Silvani, C., and J. Brondolo, 1993, 'Analysis of VAT compliance', MIMEO International Monetary Fund, Fiscal Affairs Department.

Slemrod, J. 2007, 'Cheating ourselves: The Economics of Tax Evasion', *Journal of Economic Perspectives*, vol. 21, no.1, pp.25-48.

Tanzi, V. 1983. 'The Underground Economy in the United State: Annual Estimates, 1930-1980', *IMF Staff Papers*, vol.30, no.2, pp. 283-305.

Tversky, A., & Kahneman, D., 1974, 'Judgement under uncertainty: Heuristics and biases', Science, vol. 185, pp. 1124-1131.

Vogel, J. 1974, 'Taxation and Public Opinion in Sweden: An Interpretation of Recent survey Data', *National Tax Journal,* vol. 27, pp. 499-513.
Wallschutzky, I.G. 1984, 'Possible Causes of Tax Evasion', *Journal of Economic Psychology,* vol.5, pp. 371 -384.

Witte, A. and Woodbury, D.F. 1985, 'The Effect of Tax Laws and Tax Administration on Tax Compliance - The Case of the U.S. Individual Income Tax'", *National Tax Journal*, vol.38, no.1, pp. 1-14.

Wong, S. H., 2000, 'A Study on Tax Evasion Behaviour in Malaysia', Thesis submitted for the Master of Science (Management), UUM.

The 2nd Asia Business & Management conference 2011

Osaka, Japan-Nov.11-13, 2011

Track: Rise of India

Title: Medical tourism in India: A Strategic approach towards effective branding for Health Care Services marketing

**Dr.Sandhya Anvekar*

Abstract: Health care is offered as a tourist product in name of medical tourism and every year millions of medical tourists cross the borders of their nations in search of quality treatments at low costs. Indeed the world is experiencing a boom in this industry and in the Asian belt, India along with Thailand, Malaysia, Singapore, Hong Kong, Indonesia and the Philippines are the popular medical travel destinations. India has a "health tourism" business with a line of varied treatments and therapies along with a holistic health management offering consisting of yoga, massages, traditional Ayurvedic medicines and other self-inflicted punishments for general wellbeing.

Indian health care product is a global product today that has vast clientele from prominent countries like US, the UK and Mauritius, south-east Asia, Mauritius, Fiji, Bangladesh, Afghanistan, and Singapore. In the domestic market, India, with more than a billion customer base, is witnessing increased demand due to advanced life expectancy, growing disposable income, cost effective pricing and expectations of personal well being.

In the present research paper, an attempt is made to conceptually build an integrated branding strategy for promoting medical tourism in India. It focuses on understanding the various value drivers that build the brand image and perceptions of hospitals as medical tourism product. The author concludes that combing the country brand and the medical product by Private-Public-Partnership can be effective for better marketing.

---

*Professor & Head-Research & Publications, M.S.Ramaiah Institute of Management, BANGALORE-560 054, INDIA. Email: sandhyaa@msrim.org

Author Information

The 2nd Asia Business & Management conference 2011

Osaka, Japan-Nov.11-13, 2011

Author:

Dr. Sandhya R. Anvekar,

Professor & Head-Research & Publications,

M.S.Ramaiah Institute of Management,

BANGALORE-560 054, Karnataka State,

INDIA. Email: sandhyaa@msrim.org

Track: Rise of India

Title: Medical tourism in India: A Strategic approach towards effective branding for Health Care Services marketing

Title: Medical tourism in India: A Strategic approach towards effective branding for Health Care Services marketing

**Dr.Sandhya R. Anvekar*

*Professor & Head-Research & Publications, M.S.Ramaiah Institute of Management, BANGALORE-560 054, INDIA. Email: sandhyaa@msrim.org

1.0 Introduction: Travelling for medical care is a historical phenomenon. In ancient times, almost thousands years back people travelled across the seas for treatments and healing for their ailments. They sought quality health care associated with medical expertise and rarely experienced the cultural tremors. Today, health care is offered as a tourist product in name of medical tourism and every year millions of medical tourists cross the borders of their nations in search of quality treatments at low costs. Indeed the world is experiencing a boom in this industry and in the Asian belt, India along with Thailand, Malaysia, Singapore, Hong Kong, Indonesia and the Philippines are the popular medical travel destinations. India has a "health tourism" business with a line of varied treatments and therapies along with a holistic health management offering consisting of yoga, massages, traditional Ayurvedic medicine and other self-inflicted punishments for general wellbeing.

1.1 Health care industry in India: Health care services form an integral part of social and commercial services marketing. The health care services are delivered by both public and private service operators and they provide a wide variety of health care products. The Indian healthcare sector has been growing at a faster pace in the past few years. This industry is one of the sunrise industries in India and has a great market potential. It is stated that India will spend US$ 45.76 billion on healthcare in the next five years as the country is witnessing changes in its demographic profile accompanied with lifestyle diseases and increasing medical expenses. Revenues from the healthcare sector account for 5.2 per cent of the GDP and it employs over 4 million people. By 2012, revenues can reach 6.5 to 7.2 per cent of GDP and direct and indirect employment can double. Private healthcare will continue to be the largest component in 2012 and is likely to double to US$ 35.7 billion. It could rise by an additional US$ 8.9 billion if health insurance cover is extended to the rich and middle class. Coupled with the expected increase in the pharmaceutical sector, the total healthcare market in the country could increase to US$ 53-73 billion (6.2-8.5% of GDP) in the next five years states the report of CII and the McKinsey. (1)

1.2 The health care services are delivered by both public and private service operators and they provide a wide variety of health care products. The corporate service providers in this sector are making their presence felt of late. Names like Global Hospitals, CARE, Dr. R.V. Prasad Eye Hospitals, Hindujas, NM Excellence have been rendering world class medical care. A few health care providers have been accredited with high global quality ratings that make the Indian health care product offered with high quality, lower costs and impressive success rates. For example, the super specialty hospitals like Escorts and multi specialty hospitals like Apollo have got A rating by CRISIL, NHS (UK) identifying India as a favored destination for surgeries, the BSI accrediting Escorts Hospital. Further accreditation by the US NGO Joint Commission's JCI certifies hospitals worldwide putting them on global standards of health care. Few big private healthcare providers such as Apollo, Fortis/Wockhardt, Max, Jaslok Hospitals, Lilavati, Breech Candy, Bombay Hospital, Hinduja Hospital etc. are having their individual brand and presence in overseas markets through tie-ups with insurance companies and patient facilitation centres.

Indian health care product is a global product today that has vast clientele from prominent countries like US, the UK and Mauritius, south-east Asia, Mauritius, Fiji, Bangladesh, Afghanistan, and Singapore. In the domestic market, India, with more than a billion customer base, is witnessing increased demand due to advanced life expectancy, growing disposable income, cost effective pricing and expectations of personal well being. It is considered as a 'superior good'. Indian health care industry has specialized in cardiac care, joint replacements, cosmetic surgery, dentistry that fetches medical tourists from the world. The non-allopathic treatments like Ayurveda, Yoga, acupressure, acupuncture etc. have another band of niche clientele.

1.3 Medical tourism in India: Medical tourism is a blend of tourism and health thereby known as 'health or medical tourism." It can be broadly defined as 'a provision of 'cost effective' private medical care in collaboration with the tourism industry for patients needing surgical and other forms of specialized treatment.' (2) It includes three directions-outbound; inbound and intra bound medical tourism. People who travel for medical care are called as 'medical or health tourists'. When people cross their national borders in search of world class medical treatment on cost basis, they are called as 'medical tourists'. Low costs of medical treatments and surgeries, world class facilities and expertise, advanced technology and quality etc. are the features of Indian medical tourism. An estimated 150,000 patients from about 55 countries visited India in 2004. Majority of them flow from neighboring countries like Bangladesh, Sri Lanka & Nepal. A study by the Confederation of Indian Industry (CII), a business lobby, and McKinsey, a consultancy, has estimated that "medical tourism" could bring India an additional 50 billion-100 billion rupees ($1.1 billion-2.2 billion) in annual revenue by 2012. (3) In fact, medical tourism in India is one of the sunrise industries which have enormous potential in view of the global boom in this industry.

Medical insurance is one of the attractive segments in India. Privatization of health care services has given impetus to fast growth of health care industry. Today a medical tourist bundles his elective treatment with vacation for tropical tourism. A medical tourism product is packaged with alternate traditional therapies like Ayurveda, naturopathy, allopathy, yoga, meditation etc. targeted at High end medical tourists.

2.0 Literature review: Leigh Turner (2007) concludes that with globalization, increasing numbers of patients are leaving their home communities in search of orthopedic surgery, ophthalmologic care, dental surgery, cardiac surgery and other medical interventions. Reductions in health benefits offered by states and employers will likely increase the number of individuals looking for affordable medical care in a global market of privatized, commercial health care delivery.

*Devon Herick (2007) notes that g*lobal competition in health care is allowing more patients from developed countries to travel for medical reasons to regions once characterized as "third world." Many of these "medical tourists" are not wealthy, but are seeking high quality medical care at affordable prices. Annette Arellano (2007) observes that trade in health care services therefore now includes countries promising "first-class services at third-world prices."

Gunn (1972), (cited by Chon, 1991) establishes that tourist destinations can convey images that are artificially created by a particular marketing strategy. Then, the existing contrast between the created image and the perceived reality is, often, the cause of the tourist's dissatisfaction. On this point, Bourdeau (1991) thinks that images and attitudes that the traveler adopts towards certain tourist destinations depends on the differences resulting from the tourist's experiences lived *in situ* and his tourism background.

Morgan & Pritchard (1998) state that "in terms of tourism destination branding, provenance is even more critical because countries pre-exist any identity crafted for them by marketers and neither their advertisers nor the consumers can have objective views of them." Informing tourists before and after they reach a destination is considered a marketing component.

Beerli and Martın (2004) introduced nine dimensions with attributes determining the perceived tourist destination image, such as natural resources, general infrastructure, tourist infrastructure, tourist leisure and recreation, culture, history and art, political and economic factors, natural environment, social environment and the atmosphere of the place.

2.1 Health Care Service Concept: The health care services industry is not a just profession but a commercial activity in India. It is covered by Consumer Protection Act, 1986 and includes allopathy/English medicine, homeopathy, naturopathy, Ayurveda, unani, nature care, pranic healing, reiki etc. (4) The main service products available in this industry are- hospitals; allied services include pathological labs, ambulance services, private mortuaries, pharmacy centers; paramedical services relate to fitness centres, beauty clinics dealing with obesity & skin problems and academic institutions are those like medical colleges, nursing schools, research centre etc.

The typical health care service product is provided by hospitals through diagnosis, treatment, post-operational care; supplementary services include maintenance of case history, registration, billing & support operations like laundry, diet, pharmacy, stores, security, transport etc. The service process is featured with two directions like services for the in patients; services for the out patients; tele-medical consultation and; counseling on various lifestyle parameters.

3. 0 Data and methodology

3.1 Need for study: This research paper focuses on understanding the various value drivers that build the brand image and perceptions of hospitals. It also conceptually builds a strategy for better marketing. The need for the study is obvious on the following concerns-

- There is a growing potential for India's health care products and medical tourism of late in domestic as well as inbound tourist market;
- There is a tremendous significance attached to positive perceptions and brand image for a niche product like health care where the human element is a crucial focal point throughout the service experience;
- There are some prominent health care service providers in public and private offerings where tourists perceptions on brand and image are essential for better marketing;
- Understanding the various customer value drivers for effective marketing can help in utilizing the market potential.

3.2 Research objectives: This study is an outcome of an empirical study conducted on perceptions of foreign tourists on select world-class hospitals-health care service providers and Brand India in medical tourism. It focused on following research directions-

- To explore the brand image & perceptions on India as a medical tourism destination;
- To know the tourists' satisfaction on various services attached to a medical tourism product like hospital;
- To understand the marketing variables of effective branding for better marketing;
- To suggest a conceptual framework for effective branding by hospitals for medical marketing.

3.3 Data collection methodology: Research methodology included a convenient sample of 70 inbound (foreign) medical tourists availing of hospital services in the city of Bangalore. All the medical tourists had flown in India for allopathic treatment including surgeries. They included 62% of males and 38% of females. The sample respondents were chosen from world-class hospitals namely Apollo Hospitals, MSR Memorial Hospital, Manipal Hospital, Mallya Hospital, and Narayana Hrudayalaya. Questionnaires were administered to collect responses on demographic profiles of these respondents, their perceptions and satisfaction on medical tourism product of hospitals. The data generated by this pilot survey was analyzed by simple percentage method.

4.0 Findings and discussions: The respondents' profiles revealed that more males travelled to India for medical tourism than females and 72% of the respondents belong to age group between 20 and 40 years.

Table-1 Demographic profile of respondents (Medical tourists) in %

Gender	Males	62	Females	38
Age	20 yrs	20-40	40-50	Above 50
	0	72	20	8
Education	Below SSLC	Degree	P.G.	Above P.G.
	13	67	13	8
Occupation	Employees	Self employed	Professionals	Dependents
	35	19	23	23
Apollo H	MSRMH	Manipal H	Mallya H	Narayana H
16	48	28	04	04

It was noted that 68% of the medical tourists have only one companion in travel and 20% travelled with their friends.

Table-2-Tourism related profile in % of the respondents

Companions	None	1	> 2	Friends
	4	68	8	20
Mode of transport	Air	Rail	Hired vehicle	Govt. buses
	84	8	0	8
Place of accommodation	Hospital	Hotel	KSTDC Hotels	relatives
	32	40	12	16
Duration of stay	Till care	<a week	One month	>a month
	33	17	25	25

When asked the question "Do you plan to visit other tourist places in Karnataka?" 76% of them gave positive responses.

4.1 Brand image & perceptions of medical tourism: The questionnaire was based on the factors that indicated the tourists' perceptions on brand image of India. Since medical tourism product includes all the 7Ps of services marketing, questions focused on the main offering, pricing, distribution, promotion, physical evidence, processes and people involved in medical tourism product-hospitals.

30% of the medical tourists expressed being in India was "a pleasant experience" and 32% felt it was "a great country". 8% wished to come back.

Table 3: Perceptions on brand India

Perception	Percentage
Tourist destination	08
Land of diversity	04
Home away from home	08
Great country	32
Pleasant experience	36
Unpleasant experience	00
Worth coming back	08
No comments	04

On exploring the reasons for medical tourism, it was apparent that 48% arrived due to low costs of medical treatment and 24% visited due to insurance budget limits.

Table 4: Reasons for medical tourism

Factors	Percentage
Low costs	48
Quality health care services	18
Expertise	02
Insurance budget	24
Personal care & bonding	00
Home country	04
Tourist package	00
Quality certifications	00
Personal reasons	04

Tourist destination	00

Over the satisfaction on the hospital and other allied tourism services, majority of them felt that most of the hospitals are offering good services. The services were compared on their perceptual responses from 'excellent' meaning world class to unsatisfied scale. Air connectivity, costs and quality of health care, physicians' proficiency, quality accreditations etc. had 'world class' perceptions.

Table-5-Satisfaction on Hospitals & allied medical tourism services (%)

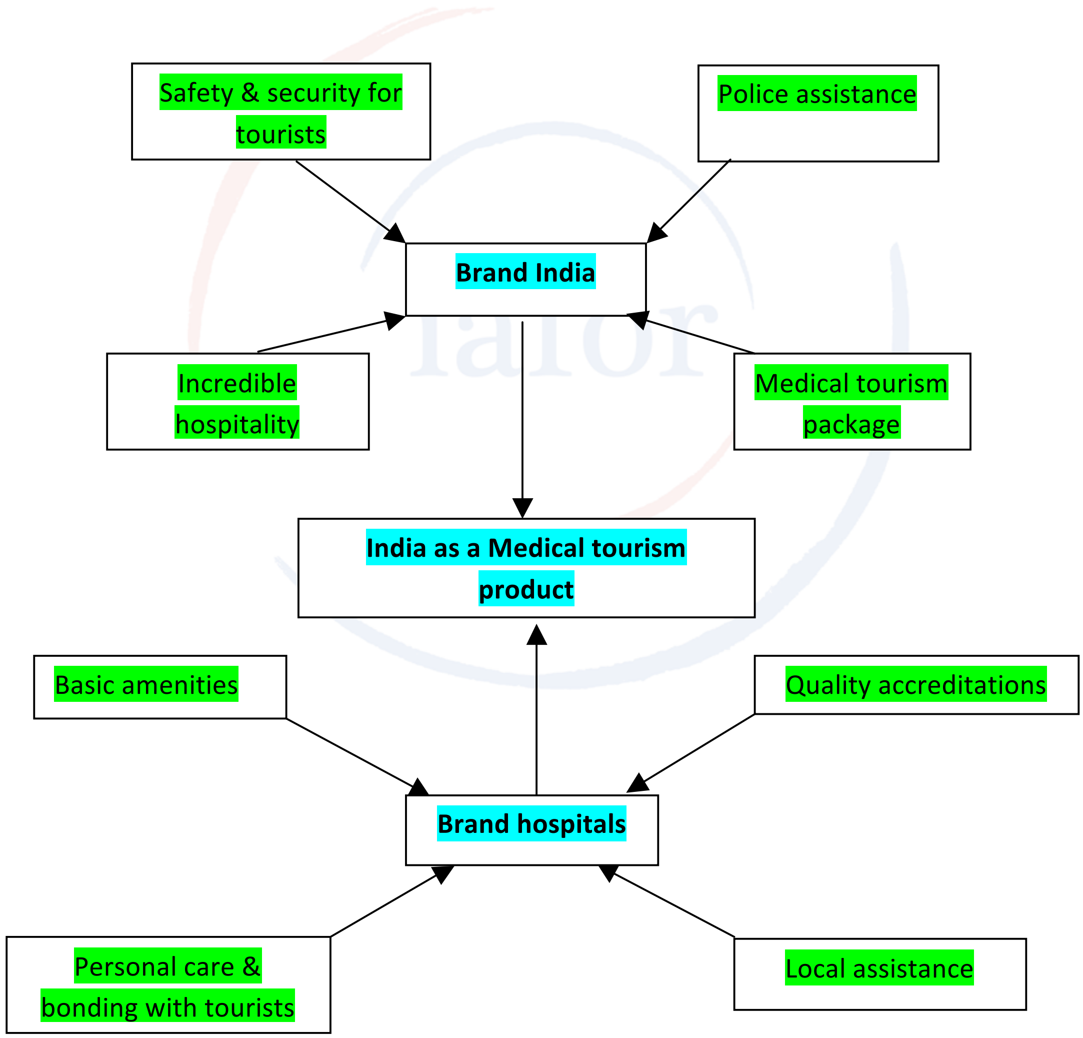
Types of services	Excellent (World class)	Satisfied	Unsatisfied
Air connectivity	38	58	04
Telecommunications	38	62	00
Costs of health care	40	60	00
Quality of health care	43	57	00
Physicians' proficiency	45	55	00
Quality accreditations	45	55	00
Accommodation	12	65	24
Local Transportation	11	56	33
Food & Refreshments	06	18	76
Sanitation	06	76	18
Personal care	11	72	17
Medicines/Health goods	11	68	21
Safety / security	10	40	50
Local Assistance	05	32	64
Onward Journey assistance	05	40	55
Police Assistance	05	41	54

Lack of good food and refreshments, safety and security, local and onward journey assistance, police assistance were the major factors of dissatisfaction.

4.2 A strategic approach towards effective branding of medical tourism

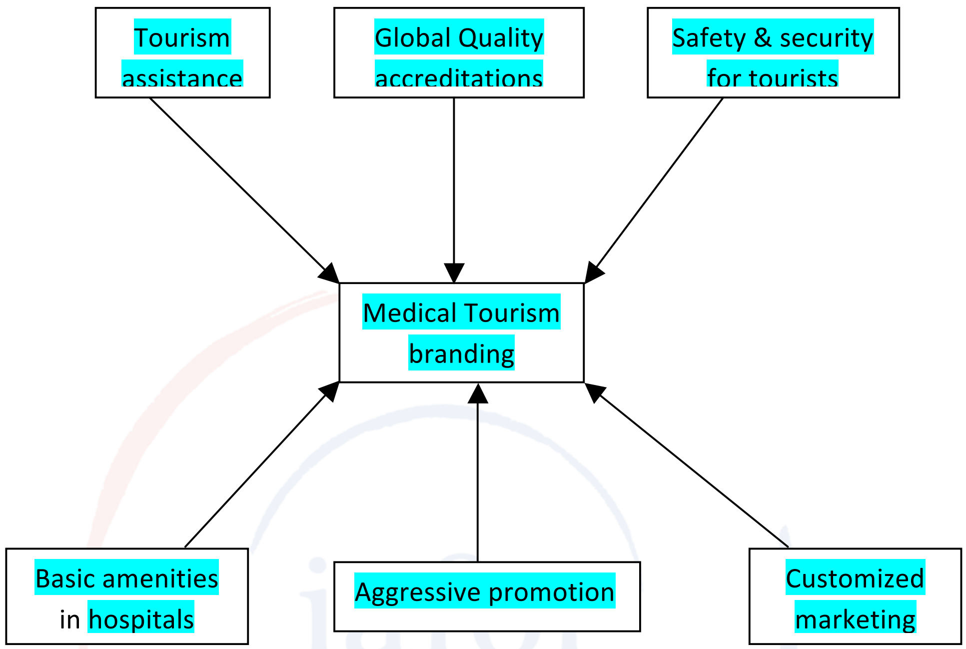
The survey findings led to conceptualization of a framework which can promote medical tourism in India. The effective branding of 'India' as 'medical tourism destination' and of hospitals as 'medical tourism product' can be taken up as illustrated in the following figure.

Illustration 1: Framework of effective branding for better marketing



Medical tourism in India can be promoted by Public (i.e. Government authorities) and Private (i.e. the super specialty Hospitals) Partnership. The public authorities can brand 'India' as 'Medical tourism destination' by promoting safety, security and police assistance to tourists. Medical tourism packages can be proposed linking health care and tropical tourism. Hospitals can have uniform global quality accreditations and go for customized marketing with personal touch and bonding with the patients.

Illustration 2: Better marketing through effective branding



The synchronization of Public and Private Partnership alone can project the medical tourism lucrative foreign exchange earner and open a new sector of global business promoting employment and health care industry growth.

5.0 Conclusion: What ails Indian medical tourism industry? There are many schemes launched by the government to provide health care to the poor segment of society. The Rashtriya Swasthya Bma Yojana, Vajpayee Arogyashree, Yashasvini Cooperative Farmers Health Care Scheme, Suvarna Arogya Chaitanya for School Children, Employees Insurance Scheme, and ESI scheme etc. are designed to provide monetary shield for availing health care against high costs of treatment by the poor people. However 90% of the surgeries are conducted in private hospitals. Out of the total GDP, only 1% is allocated for health care which makes the government hospitals unequipped with necessary infrastructure and facilities for providing health care. Further the services taxes on air conditioned private hospitals increase the medical bills at least by 20-25% In the domestic market we have only 51 doctors for every 100,000 people, compared with 279 per 100,000 in America. It accounts for only 5.1% of gross domestic product. The BPL and poor people can't afford to avail of health care services. Further for such a populous country, only 60,000 heart surgeries are done every year. (4) In the international market scenario, India comparatively attracts lesser medical tourists than its counterparts like Thailand. Most of those arriving in India come from poor countries. Developed countries like the

USA, Britain and Canada have costliest, overloaded health systems, producing long waiting lists that high market potential for Indian service provider. Though India is well-qualified, certified and cheap in every aspect of health care, from new-drug discovery and testing to surgery, it is still not considered as a very attractive medical tourism destination.

Though the health care sector cannot be looked at as revenue generator, the medical tourism can be projected as a lucrative foreign exchange earner. The government should relook at the policy and focus on improving the major infrastructural drawbacks relating to connectivity from homeland to choice destinations, poor roads, risky sanitation and hygiene, telecommunication blockades etc., lead to lesser choice of hospitals as a medical tourist product. Further the non-uniform accreditations of hospitals add to confusion and distrust. There can be a uniform world class accreditation for health care services. The cultural factors like emotional bonding between the medical tourist and the Medicare provider can be taken up at individual levels by the health care marketers.

Suggested readings:

1. CII-McKinsey Report on Medical Tourism, The McKinsey Quarterly, 2008.
2. 'Services Marketing', ICFAI, July, 2004.
3. McKinsey Report, ibid.
4. 'Services Marketing', Jha S.M., Himalaya Publishing House, 2006.
5. Leigh Turner, 'First world Health care at Third World Price: Globalization, Bioethics & Medical Tourism', Bioethics, Vol.2, Issue 03, 2007.
6. Devon M. Herrick, 'Medical Tourism: Global Competition in Health Care' in NCPA Policy Report, No.304, Nov. 2007.
7. Ramirez de *Arellano*, *Annette* B. (2007). Patients without borders: the emergence of *medical tourism*. International Journal of Health Services 37(1).
8. Chon, Kye-Sung, 1991, "Tourism destination image modification process", *Tourism Management.* March. pp. 68-69.
9. Bourdeau, L. 1991. "Effets des attraits physiques et du comportement sur la décision d'achat, la mémorisation et la perception des clients envers le personnel en contact". Mémoire de Maîtrise en Administration des Affaires, Montréal, Université du Québec à Montréal.
10. Morgan N. & Pritchard A.(1998), Tourism Promotion and power: Creating images, creating identities, Chichester: Wiley.
11. Beerlin & Martin J.D.(2004), Factors influencing Destination image, Annals of Tourism Research, 31(3).
12. www.google.com; www.healthcare.com

NOTTINGHAM UNIVERSITY BUSINESS SCHOOL

PRC Tort Liability Law 2009:

Implications for enterprises operating in China

Thomas Kristie
Lecturer in Business Law, *kristie.thomas@nottingham.ac.uk*

November 2011

PRC Tort Liability Law 2009: Implications for enterprises operating in China

Dr. Kristie Thomas*

ABSTRACT: The long-awaited PRC Tort Liability Law was passed on 26 December 2009 and came into force on 1 July 2010 after more than nine years of drafting, re-drafting and deliberations. Not only does it represent another major milestone in the construction of a comprehensive civil law system in China, but the new law also has important implications for enterprises operating within China. The 2009 Law consolidates previous provisions on tortious liability, which were scattered throughout a range of laws, regulations and judicial interpretations, into an inclusive law with 12 chapters and a total of 92 articles.

In particular, the new Tort Liability Law makes significant changes to the rules on product liability in China, against a background of increasingly sophisticated consumers who are ever more willing to pursue their claims to court in order to seek compensation. For example, Article 47 of the Tort Liability Law introduces punitive damages where a manufacturer or seller knows a product is defective and continues to manufacture or sell the product in question. The Law is also significant for introducing a warning and recall regime for faulty products.

This paper will introduce the background to the passing of the law and outline the most important provisions of the new Tort Liability Law before considering the prudent steps that enterprises operating in China should take in order to minimise their liability, particularly with regard to product liability.

1. Introduction

The promulgation of the PRC Tort Liability Law (TLL) on 26 December 2009 marked a significant moment in the advancement of civil Chinese legal reform. The TLL was passed against a background of rising consumer awareness in the domestic Chinese market, as well as a series of negative press stories involving the safety of Chinese manufacturing. This led to a growing emphasis on the quality of Chinese goods rather than just the 'bottom-line' of vast quantities of cheap Chinese exports; this focus is reflected in the specific reforms made by the TLL to the product quality system which will be at the heart of this article.

The 2009 TLL is also highly significant for businesses operating in China. By making fundamental changes to the existing product liability framework, the TLL shows a need for every business to be aware of their potential liability throughout the product distribution chain in China. These changes, including expanding the scope of potential defendants, systematising the warning and product recall systems and increasing the scope and availability of punitive damages, could potentially prove very costly to any enterprise operating in China. Therefore, it is important to consider the implications of the changes made by the 2009 TLL in some detail.

* Lecturer in Business Law, Nottingham University Business School, U.K.
Email: kristie.thomas@nottingham.ac.uk

In addition, the TLL is a highly relevant statute in the context of modern Chinese society, not only reflecting the political goal of balancing economic growth with Hu Jintao's aim of creating a 'harmonious society', but also through its inclusion of contemporary issues such as environmental protection and medical malpractice. This shows the wider shift away from services which were formally provided exclusively by the state prior to the break-up of the *danwei* system, towards private relationships between e.g. patients and healthcare providers. Furthermore, in the context of wider Chinese legal reforms, the TLL is also a highly significant piece of legislation. It can be seen as largely completing the civil law framework in China begun with the General Principles of Civil Law (1986) and including the Contract Law 1999 and the Property Law 2007.

The remainder of this article will be split into five sections. The first section will outline the background of the 2009 TLL from prior to the commencement of the reform and opening-up period in 1978, through the early attempts at tort regulation of product quality in the late 1980s, to the passing of the Product Quality Law (PQL) and the Consumer Rights and Interests Protection Law in the 1990s which established a wide-ranging framework for consumer rights against manufacturers of defective products. This section will also consider reforms across the 2000s, from the 2000 amendment to the PQL and the expansion into new areas of tortious liability such as the 2003 Road Traffic Safety Law covering automobile accidents, as well as the academic debate on the TLL drafts from 2002 onwards.

The second section focuses on the TLL itself, giving an overview of its general provisions and the context within which it was promulgated before the third section highlights the specific provisions on product liability and considers the major impact that these provisions may have on the existing product liability framework in China. The fourth section considers the implications of the TLL for enterprises operating in China and offers some guidance on how best to minimise potential liability for defective products under the amended product liability regime. The article will close with a brief conclusion, summarising the key points for enterprises to be aware of, as well as looking to the future of product liability in China.

2. Background

Civil law matters have generally received scant attention throughout Chinese legal history. Despite tort's inclusion in the Qing Civil Code draft (Article 945) as侵权行为 *qin quan xing wei* (infringement of civil right) (Zhang (2011), p. 8), there were no centralised provisions on tort prior to the start of the reform and opening-up period in China from 1978 onwards. Product quality in particular had suffered as China's leaders focused almost exclusively on gross industrial output (Epstein (1988), p. 285).

The first major law to systematically introduce tort principles into the Chinese legal system was the General Principles of Civil Law (GPCL) passed in 1986, in conjunction with the Regulations concerning Liability for the Quality of Industrial Products issued in the same year. However, the GPCL were "not sufficiently detailed to be applied uniformly by the courts" (Green (2008), p. 127). In addition, the mechanisms provided for enforcing these new product quality standards were almost exclusively limited to public enforcement through state agencies reflecting the historical position whereby safety issues had been handled almost exclusively by government agencies (Green (2008), p. 123). Further, these early attempts at tort regulations such as the 1986 Regulations concerning Liability for the Quality of Industrial Products focused on utilising "vertically oriented administrative legislation" (Epstein (1988), p.318). In other words, the power of the individual consumer to initiate an action in court against a negligent manufacturer was minimal.

Thus, consumer rights and the issue of liability for defective products were not tackled effectively until the promulgation of the Product Quality Law 1993 (PQL)中华人民共和国产品质量法*Zhonghua renmin gongheguo chanpin zhiliangfa* and the Consumer Rights and Interests Protection Law 1994 (Consumer Protection Law) 中华人民共和国消费者权益保护法 *Zhonghua renmin gongheguo xiaofeizhe quanyi baohu fa*. Taken together, these two laws work hand-in-hand to establish a codified framework for the regulation of product quality. However, these 'first generation' Chinese tort laws still relied on the traditional model of enforcement primarily through governmental administrative agencies rather than empowering individual consumers to bring negligent manufacturers to court directly (Zhao (2002)). Even the PQL 1993, which represented a significant step forward towards a comprehensive framework for the regulation of products, still relied on enforced arbitration rather than the courts (Article 47) as the primary method of dispute resolution (Green (2008), p. 129).

Under the PQL and Consumer Protection Law, arbitration was to be handled by intermediary bodies such as the China Consumers' Association (CCA) which was founded in 1984 to act as a funnel for consumer complaints. Indeed, it has even been suggested that state-sponsored semi-official consumer organisations such as the CCA play an important role in directing unrest away from the political arena and towards private enterprises. It has also been claimed that the Chinese government treats the issue of product quality so seriously because of its perceived potential to bring instability to the country (Shen & Chiu, p. 311, fn. 2). As a result, the first generation of tort regulations in China governing liability for defective products relied on state agencies and semi-official bodies such as the CCA to enforce the law rather than empowering individual consumers to litigate against negligent manufacturers, in order to maintain an important element of state control over the issue of product quality.

However, this (over-)reliance on state agencies to enforce consumer rights began to change at the start of the 21st century with the emergence of a 'second generation' of tort laws which displayed "a more favourable attitude towards private court actions" (Green (2008), p.130). In the early 2000s, further laws and regulations were passed which aimed at extending the rights of individual citizens into new areas of liability, as well as the PQL being amended in 2000. For example, the Production Safety Law 2002, Road Traffic Safety Law 2003 and the 2002 Regulations on the Handling of Medical Accidents all provided coverage for new situations where tort liability was emerging.

Initially, the 1986 GPCL were intended to be replaced by a comprehensive civil code. However, this initial grandiose aim was abandoned and instead, reforms of the civil laws in China have proceeded via an incremental approach with the passing, for example, of the Contract Law in 1999 and the Property Law in 2007. The civil law reforms reached a zenith with the promulgation of the Tort Liability Law in 2009 following several years of debate.

In fact, the first draft of the Tort Liability Law was released in 2002 for comment. This draft led to fierce debate about the potential development of the law of tort in China, with rival drafts emerging from various academic scholars, such as the 2002 draft by Professor Zhang Xinbao published in the prestigious journal *Si Fa* and the draft by Wang Liming of Renmin University published in 2004 (Conk (2007)). Throughout the next seven years, the academic debate amongst legal scholars in China continued to rage, against a background of increased consumer awareness (Croll (2006)). This revolution in the role of the Chinese consumer citizen in the domestic economy could be said to have been driven in part by the state as stimulating domestic demand is necessary to balance China's economic growth away from the current focus on export-driven growth, as well as by increasing consumerism and materialistic tendencies.

By 2009, the final draft of the Tort Liability Law (TLL) was being prepared for promulgation. The final draft reflected the rise of individual Chinese consumers as well as including pressing issues in contemporary Chinese society such as medical negligence and environmental pollution. In addition, the TLL also demonstrates the receding of the role of the state through various government agencies as the primary enforcement mechanism of product quality, as private enforcement by individual consumers comes to the fore. The TLL will be examined in more detail in the following section.

3. The 2009 Tort Liabilities Law (中华人民共和国侵权责任法)[1]

The Tort Liabilities Law中华人民共和国侵权责任法*Zhonghua renmin gongheguo qinquan zerenfa* (TLL) was passed by the Standing Committee of the NPC on 26 December 2009 and became effective on 1 July 2010. This was in contrast to the usual legislative process whereby the National People's Congress (NPC) is responsible for passing legislation, with the Standing Committee of the NPC empowered to supplement and amend laws passed by the NPC but only where necessary between NPC sessions. In addition, the TLL was passed only three weeks after the period for public comments on the draft law closed, plainly an insufficient time to fully consider the issues raised by comments.

Clearly, there was some urgency to the final passing of the TLL. Officially, the TLL was passed so urgently because it dealt with issues of great public concern: "this law is of great importance for protecting the legitimate rights and interests of civil subjects, preventing and punishing infringements of rights, reducing and resolving conflicts in society, and promoting social harmony and stability" (NPC Work Report (2010)). Nonetheless, momentum may also have been provided in the wake of the international outcry following incidents such as the Sanlu tainted milk scandal and the perceived cover-up and suppression of compensation claims from alleged victims (Reuters (2008)). However, although the final draft was adopted very swiftly, the process of drafting and modifying the TLL had been taking place since the first draft was issued in 2002, so the final law could simply be seen as the culmination of a much longer process.

The 2009 TLL itself consists of 12 chapters, including general provisions dealing with issues such as joint liability, contributory negligence and the availability of damages for emotional distress as well as damage to property or personal injury. In addition, there are several chapters dealing with the specific issues of product liability, motor vehicle accidents, medical negligence, environmental pollution, liability arising from high risk circumstances or liability for injury caused by kept animals or things.

These specific provisions clearly reflect the wider changes in Chinese society over the past generation by inclusion of current thorny issues such as the liability of internet service providers (Article 36), as well as provisions on traffic accidents, a pressing concern as the number of private cars in China is reported to have recently reached 100 million (China Daily (2011)). Another issue increasingly prioritised under Hu Jintao's national goal of creating a 'harmonious society' is that of environmental pollution, which also receives prominent coverage in the TLL. Liability for defective products is also a key area of reform within the

[1] Full text of the 2009 Tort Liability Law is available at: http://www.gov.cn/flfg/2009-12/26/content_1497435.htm accessed 24 August 2011. English translation taken from "PRC Tort Liability Law" *China Law & Practice*, June 2010.

2009 TLL and the following section will now outline in detail the provisions relating to product liability specifically.

4. Changes that the 2009 TLL has made to the product liability regime in China

Chapter 5 of the 2009 TLL contains the specific provisions relating to product liability. However, as this chapter only contains seven sections, there is a clear need to refer back to previous detailed provisions on product liability such as the 1993 PQL. For example, no definition of 'defect' is given in the TLL; Article 46 of the PQL contains the required definition which should be used.

Despite the chapter's brevity, it does make important changes to the product liability regime in China, namely by expanding the range of possible defendants who may be liable for defective products; introducing a general product recall system; and generalising the provision of punitive damages.

4.1 Possible Defendants

Broadly speaking, any party in the chain of distribution could now face liability for defective products under the TLL. Article 41 states that "if injury is caused to another due to a defect in a product, the producer shall bear tort liability." Note there is no need to prove the producer was at fault; liability under Article 41 is strict. Article 42 states that "if injury is caused to another due to a product defect that developed as a result of the fault of the seller, the seller shall bear tort liability." In contrast to Article 41, Article 42 requires that fault liability be proved in order for a seller to be held liable. However, Article 42 also provides that "if the seller is unable to name the producer or supplier of the defective product, the seller shall bear tort liability." Thus, the seller can face non-fault liability for the defective product if they are unable to identify the producer or supplier; the aim here is to protect the consumer from the situation whereby they are unable to identify a defendant to bear responsibility.

Article 43 makes it clear that a claimant may choose whether to pursue the producer or the seller for damages and also provides for the producer or seller to seek indemnification from the other if they are at fault. Finally, Article 44 also extends liability to third parties in the chain of distribution such as carriers or warehouse owners. If such a third party is found to be at fault, the producer or seller can seek indemnification from them after compensating the injured party.

Therefore, a claimant can choose whether to claim against the seller or the manufacturer directly. However, a claim against the manufacturer is easier to prove because it is not necessary to show that the manufacturer was at fault; it is sufficient to show that the product was defective and has caused some harm. In addition, although an injured party cannot claim against a third party in the distribution chain directly, they may still be liable to indemnify the manufacturer or seller if it can be proved that they are responsible for the defect in the product.

4.2 Product Recall System

Article 46 of the 2009 TLL expressly sets out a unified warning and recall system for defective products as a general remedial measure which should be taken if defects are found to be contained in products already placed on the market. Further, failure to implement such a recall in a timely and effective manner, shall lead to the producer or seller facing tort liability. This provision is significant because, although product recalls existed prior to the promulgation of the 2009 TLL, they were for specific categories of products only, rather than as a general measure. However, detailed provisions on how such a recall should be implemented are lacking, despite the drafting of the Administrative Rules for the Recall of Defective Products, which were published in April 2009 for consultation (Gov.cn (2009)).

In addition, Article 45 potentially expands the mandatory product recall system to the situation where a claimant can merely prove that “a defect in a product jeopardises the safety of another or the safety of the property of another,” then they have the “right to demand that the producer or seller bear tort liability by eliminating the obstruction, eradicating the danger, etc.” Article 45 could possibly be interpreted to mean that any individual could trigger a product recall without even showing a specific injury. This Article is also noteworthy for the mention of property damage; other provisions in the chapter on product liability require personal injury in order for tort liability to be upheld. In terms of the costs to a manufacturer of a product recall (both in practical terms as well as the damage to the brand and/or reputation of the company), Articles 45 and 46 are highly significant if they foreshadow a more systematic application of mandatory product recalls. However, Article 45’s vague nature makes it difficult to predict how exactly it may be applied in practice.

4.3 Punitive Damages

Similar to the potential for product recalls, although punitive damages did exist in China prior to the passing of the 2009 TLL, they were only available in certain limited situations. For example, under Article 96 of the Food Safety Law 2009, consumers can seek damages of up to ten times the purchase price and under Article 49 of the Consumer Rights and Interests Protection Law 1994 twice the cost of the goods or services should be refunded in the case of deceptive (fake) products. This so-called ‘double compensation’ provision under the Consumer Rights and Interests Protection Law has been utilised by a famous consumer advocate called Wang Hai. He positioned himself as a consumer champion by deliberately purchasing goods which he knew to be fake, then returning them and demanding double the purchase price. He soon shot to fame achieving a celebrity status in China and even set up a consultancy company to expand his fight for consumer rights (Hooper (2005), p. 14).

Article 47 of the 2009 TLL provides that “if a producer or seller has clear knowledge that a product contains a defect but nonetheless continues to produce or sell the same, resulting in the death of another or serious harm to the health of another, the injured person shall have the right to demand commensurate punitive damages.” Thus, the TLL does not offer any further indications of how punitive damages may be calculated, beyond limiting their availability to cases of serious personal injury or death. It is not clear whether the calculation of punitive damages should be linked to the extent of the claimant’s injury or to the magnitude of the defendant’s behaviour. However, “Chinese law commentators postulate that courts will be reluctant to award more than double the amount of damages resulting from the injury” (Wang & Madaio). Indeed, the draft of the TLL was amended at the final stage to limit the scope of punitive damages due to concerns about excessive compensation potentially being awarded (Cui (2009)).

Therefore, the availability and calculation of punitive damages remains a grey area within the TLL; with no monetary limits specified within Article 47 itself, and no indication of whether mere constructive knowledge would suffice (Neumann & Ding (2010)), close attention should be paid to emerging case law to see how these ambiguities are resolved.

5. Implications of the 2009 TLL for Enterprises Operating in China

The TLL has several important implications for enterprises operating within China, the first of which is that it is essential for interested parties to monitor product liability and the application of the TLL more generally for published judicial interpretations and reported cases to see how the revised provisions are being interpreted in practice. One judicial interpretation has already been issued regarding the TLL. The SPC issued a Circular on several issues concerning the application of the TLL on June 30th 2010, stating that the TLL shall apply to civil disputes arising from tortious acts that occur after the implementation of the law. Article 1 states that civil disputes arising from tortious acts that occur prior to the implementation of the Law shall be governed by the laws prevailing at the time. Article 2 states that civil disputes arising from tortious acts that occur prior to the implementation of the Law and resulting in injuries occurring subsequent to the implementation of the Law, the TLL shall apply. Therefore, this judicial interpretation is extremely limited in scope and there is undoubtedly a need for further clarification of certain key issues within the TLL. This applies particularly to the contentious issue of punitive damages.

Secondly, as the scope of potential defendants to a product liability claim has been expanded by the TLL, it is necessary for communication and links throughout the distribution chain to be maintained and improved wherever necessary. Every partner including carriers and storage providers needs to be made aware of the significance of any potential defects identified in the products. Linked to this is the need to maintain and evidence strict quality control systems, particularly in the event of a product warning/ wholesale recall becoming necessary. Such documentation can help to minimise liability if prompt action is taken in the event of any defect being discovered.

Finally, the creation of a specific right to privacy (included in the list of civil rights and interests protected by the TLL in Article 2) is as a direct result of global technological developments more generally. Consequently, information management and data protection systems must also be strengthened in the light of the new right to privacy; any breaches of data security in client data, for example, may well lead to tortious liability.

6. Conclusion

Taken as a whole, the TLL brings the rights of individuals to the fore, particularly when compared to previous laws such as the PQL and Consumer Protection Law which emphasised the role of state agencies to enforce the law or of third party intermediary bodies such as the CCA to mediate between individual consumers and companies, with litigation seen very much as a last resort. In contrast, the TLL places civil litigation firmly at the heart of the law of tort in China. Provisions on current divisive issues such as environmental pollution, the liability of schools and hotels to ensure safety and ISP liability may suggest that the Chinese government is using the law to effect behaviour change in these areas (Green (2008), p. 139), as well as expanding the limits of tortious liability more generally.

It could be argued that the TLL does not make radical changes; in many respects, it merely brings together provisions which were previously scattered throughout various laws and regulations such as the PQL and Consumer Protection Law, as well as laws on specific areas of liability such as the 2003 Road Traffic Safety Law and relevant judicial interpretations. However, by consolidating these diverse provisions together within a centralised statute, the law is more transparent and thus more accessible for individuals to be aware of their tortious rights and liabilities. On the other hand, the TLL does not replace the existing laws and regulations; by providing a general framework on tort liability, there is still a palpable need to refer back to existing laws for detailed provisions.

With regards to many of the main changes wrought by the TLL to the product liability system in China, it remains to be seen exactly how these new provisions will be implemented in practice. Indeed, observers have noted that as of early 2011, the new TLL is yet to be widely implemented (Legal Daily (2011)). Thus, particularly with regards to punitive damages and product recalls, close attention must be made to this area in future as the law and its implementation evolve further.

References

------------, "NPC Work Report 2010", available at: "http://cpcchina.chinadaily.com.cn/news/2011-03/09/content_12144307_3.htm accessed 1 August 2011.

China Daily, 2011, "Number of cars in China hits 100m", 17 September, at http://www.chinadaily.com.cn/bizchina/2011-09/17/content_13725715.htm, accessed 16 October 2011.

Conk, George W., 2007, "A New Tort Code Emerges in China: An Introduction to the Discussion and a Translation of Chapter 8 - Tort Law of the Official Discussion Draft of the Proposed Revised Civil Code," *Fordham International Law Journal*, Vol. 30, pp. 935-999, Fordham Law Legal Studies Research Paper No. 1015041. Available at SSRN: http://ssrn.com/abstract=1015041

Croll, Elisabeth, 2006, "China's new consumers: social development and domestic demand", Abingdon: Routledge.

Cui, Lixia, 2009, "侵权责任法草案明确惩罚性赔偿适用范围*Qinquan zerenfa caoan mingque chengfa xingpei changshi yongfanwei* (The draft Tort Liability Act clarifies the scope of punitive damages)" available at: http://www.npc.gov.cn/huiyi/cwh/1112/2009-12/23/content_1531722.htm accessed 5 August 2011.

Epstein, Edward J., 1988, "Tortious liability for defective products in the People's Republic of China", *Journal of Chinese Law*, Vol. 2, pp285-321.

Gov.cn, 2009, "法制办就缺陷产品召回管理条例(送审稿)征求意见*fazhibanjiu quexian chanpin zhaohui guan litiaoli songshen gaozheng qiuyixian* (Office of Legislative Affairs releases Draft Ordinance on the Management of Defective Product Recalls for comment)" available at: http://www.gov.cn/gzdt/2009-04/08/content_1280582.htm accessed 2 August 2011.

Green, Andrew J., 2008, "Tort reform with Chinese characteristics: Towards a 'harmonious society' in the People's Republic of China", *San Diego International Law Journal*, Vol. 10, pp121-153.

Hooper, Beverley, 2005, "The consumer citizen in contemporary China" *Working Paper No 12, Centre for East and South-East Asian Studies, Lund University, Sweden*, available at: http://www.ace.lu.se/images/Syd_och_sydostasienstudier/working_papers/Hooper.pdf accessed 1 September 2011.

Legal Daily, 2011, "侵权责任法实施半年"动静"不大 *Qinquan zerenfa shishi bannian dongjing buda* (Tort Liability Law impact after 6 months is not large)" available at: http://www.legaldaily.com.cn/index_article/content/2011-01/06/content_2429044.htm?node=5955 accessed 2 September 2011.

Neumann, Peter & Ding, Calvin, 2010, "China's new tort law: Dawn of the product liability era", *China Business Review*, March-April 2010, available at: http://www.chinabusinessreview.com/public/1003/neumann.html accessed 8 August 2011.

Reuters, 2008, "China milk victim lawyers say pressed to quit", 28 September, at http://www.reuters.com/article/2008/09/28/us-china-milk-law-idUSTRE48R0ZK20080928?sp=true, accessed 16 October 2011.

Shen, Will W., & Chiu, Iris H. Y., 2005, "Comparative analysis of key aspects of product liability law in China and the United States", in: Campbell, Dennis (ed.), "Liability for products in a global economy", The Hague: Kluwer Law International, pp311-367.

Wang, Daniel & Madaio, Christopher, 2010, "Navigating China's new tort liability law", available at: http://www.milesstockbridge.com/pdfuploads/697_MEEHANCHINAARTICLE.pdf accessed 1 August 2011.

Zhang, Mo, 2011, "Tort liabilities and torts law: The new frontier of Chinese legal horizon", *Richmond Journal of Global Law and Business (forthcoming)*, Vol. 10, available at: http://ssrn.com/abstract=1808042 accessed 1 August 2011.

Zhao, Gary, 2002, "Chinese product liability law: Can China build another great wall to protect its consumers?", *Washington University Global Studies Law Review*, Vol. 1, pp581-602.

Three Junctures for the internationalization of the Renminbi (RMB)

Dr. Thomas, Wai-kee, YUEN

Department of Economics and Finance
Hong Kong Shue Yan University
Braemar Hill
Hong Kong, CHINA

Tel: (852) 2806-5171, Fax: (852) 2806-8044
Email: wkyuen@hksyu.edu

Abstract

As China's economy continues to grow in all respects, it is agreed worldwide that the Renminbi (RMB) should play a more important role. Yet how rapid the process of the RMB's internationalization will be or when China will decide to open her capital account depends on the policy decisions of the Chinese authorities. Allowing the RMB to be internationalized or become fully convertible means that the Chinese authorities would have to hand over, at least partially, their control over the RMB or even over monetary policy, to the market. "Prudence" has always been the policy style of the Chinese authorities, and to reduce the fluctuation of the RMB as it goes international, it is necessary to ensure that the size of the RMB market pool, in terms of both demand and supply, is large enough to absorb any unexpected shocks. To satisfy this condition, this paper foresees that the process of internationalization of the RMB needs to pass through three stages (junctures). The first would be to establish close trading relationships or free trade agreements, and arrangements for cross-border settlement of transactions in the RMB with emerging economies, especially the other countries in the BRICs group. The second stage would be to diversify the economic growth model from an export-capital formation-led growth to an export-consumption-technology led growth model. The final stage would be the development of a financial market, including both onshore and offshore transactions, that is deep and wide enough to protect against any external shocks.

Three Junctures for the internationalization of the RMB

Dr. Thomas Wai-kee YUEN
Hong Kong Shue Yan University

By the end of 2010 China's GDP was worth about $5.7 trillion. In terms of purchasing-power-parity adjustment, this represented about 13% of global GDP (Source: IMF, WEO Database, October 2010). As China's economy continues to grow and would even surpass the western major economies within a decade, it seems only natural that the RMB should be internationalized. As an international currency, the RMB should be widely accepted, globally, in trade invoicing and settlements and in financial markets, and would serve as a store of value (see Kene (1983), Gao and Yu (2009), Chinn and Frankel (2005)). For example, the US dollar, the major international currency, is widely accepted for quotations and payments in trade, in foreign exchange markets and in commodities markets. Tourists usually use the US dollar across borders to make their payments. In fact, all over the world, public and private institutions are willing and able to hold US dollar denominated financial assets as a store of value. Governments use the US dollar as a reserve currency as well as a tool for foreign exchange rate interventions (see: Genberg 2009).

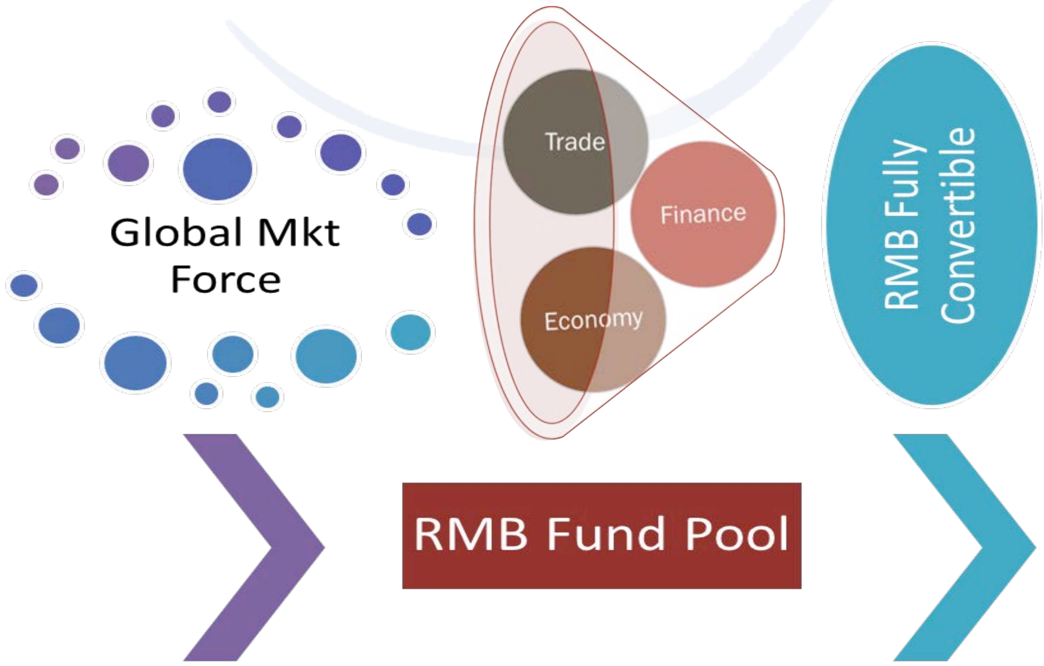
In the IMF's World Economic Outlook it was forecast that China's output, in terms of purchasing-power-parity, would surpass that of the USA in 2016 (Source: IMF, WEO, April 2011). Justin Lin, the World Bank's chief economist, believes that China will overtake the USA and become the world's largest economy within the next two decade (reported in Finance Markets, August 2011). Yet all these predictions ignore the potential risk caused by the imbalance between China's economic activities and the role of the RMB in the world market. As the world's manufacturing centre, China has overtaken Germany as the world's biggest exporter. Moreover, China has the largest foreign reserves and attracts the greatest amount of foreign direct investment. But the RMB still plays only a minor role in trade settlements, in international financial markets and as a reserve currency. This imbalance in the role of the RMB reflects the fact that the participation of China in the global economy is still limited to the manufacturing sector. It is agreed worldwide that, to ensure the recovery of the global economy and the further growth of China, China should be more closely integrated with the global economy through her financial sector. Yet a liberalization of China's financial sector may cause fluctuations in the RMB, and this would hurt foreign investors in China, alter world trade patterns and harm the global economy.

Determining how fast the process of RMB internationalization should be is an art in itself. Different points of view provide different answers. From the market perspective or a Western view point, China should open its capital account, deregulate all unnecessary control over the

RMB and let the market handle the process. Kene (2009) considers that the first condition for a currency to become internationalized is that "the government must remove all restrictions on the freedom of any entity, domestic or foreign, to buy or sell its country's currency, whether in the spot or forward market" (Kene 2009, p.3).

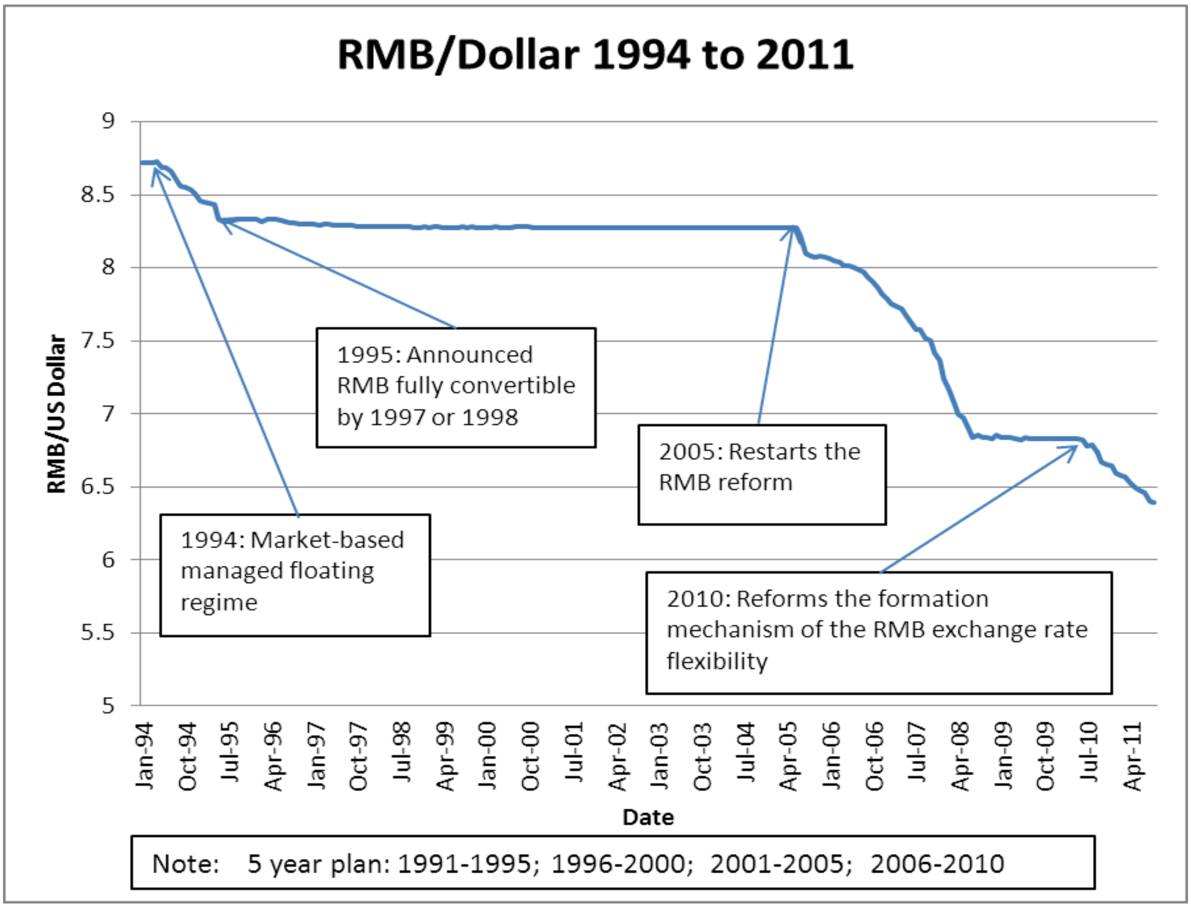
However, from the point of view of the Chinese authorities, in order to be a responsible member in the global economy, China needs to avoid any harmful fluctuation of the RMB during the process of its internationalization. It has been reiterated many times by the Chinese authorities that any reform of the RMB should be gradual and controlled. In the third quarterly monetary policy report of the People's Bank of China (2009), it was stated that the RMB exchange rate formation mechanism should follow the principles of initiative, controllability and gradualism. Yet the call in global society for a reform of the RMB exchange rate is getting louder, as the strength of the Chinese economy continues to grow.. "Prudence" has always been the preferred policy style of the Chinese authorities, and one possible future scenario for the reform of the RMB is that they will make use of the market to build a firewall to protect the RMB against harmful speculation. That means it is necessary to ensure that the size of the RMB market pool, in terms of both demand and supply, is large enough to absorb any unexpected shocks. As Zhu (2011), points out, emerging markets need to maintain macroeconomic stability and external buffers if their policies are to work effectively. To satisfy this condition, this paper foresees that the process of internationalization of the RMB needs to pass through three stages (junctures).

The following figure outlines the conceptual framework.



The first would be to establish close trade relationships or free trade agreements and arrangements for cross-border settlement of transactions in the RMB with emerging economies, especially the other countries in the BRICs group. The second stage would be to rebalance the economic growth model from an export-led growth model to an export-consumption-technology led model. The final stage would be the development of a RMB fund pool, including both onshore and offshore RMB centres, that is deep and wide enough to defend against any external shocks.

Recent reforms in the convertible schedule of the RMB



Sources: Data from UBC's Sauder School of Business

The above figure shows that every reform in the RMB starts with a transformation of China's economy and slows down when there is global financial instability. In China, the transformation of the economy is triggered by the Five-Year Plan. In 1994, China implemented a market-based floating exchange rate regime in which the RMB is allowed to float within a band. To achieve membership of the World Trade Organisation (WTO), in 1995 the Governor of China's central bank announced that the RMB would be fully convertible by 1997 or 1998. China reached its convertibility goal for the current account by the end of 1996 (1996 was the beginning of the Ninth Five-Year Plan). However, due to the 1997 financial crisis in Asia, the schedule for achieving full convertibility was quietly abandoned. Almost ten years later,, in July 2005, the Chinese authorities announced the restart of the 1995 schedule to make the RMB fully convertible schedule, re-launching the RMB reform leading to a greater exchange rate flexibility (2006 was the beginning of the Eleventh Five-Year Plan). However, the 2008 global financial crisis froze this process for two years. By June 2010 China had further reformed the formation mechanism of the RMB exchange rate flexibility. At the beginning of 2011, the People's Bank of China announced that China would take further steps to improve the RMB formation mechanism (2011 is the beginning of the Twelfth Five-Year Plan). It is therefore to be expected that the next movement towards the internationalization of the RMB will come in 2016, i.e. the beginning of the next Five-year plan. Yet the conditions needed for this next step forward depend on the existence of a stable global financial environment. Previous history shows that internationalization of the RMB is not a standalone issue, and is closely related to the economic development of China and the stability of the global financial markets.

Cross-border Trade Settlements

According to the following WTO press release (2010) China picked up about 10% of world trade. This indicates that trade settlements have a huge potential for contributing to the international use of the RMB.

China Trade 2010

	Value $billion	Rank	Global Share %
Merchandise trade			
Export	1578	1	10.4%
Import	1395	2	9.1%
Service trade			
Export	170	4	4.6%
Import	192	3	5.5%

Source: WTO press release 7 April 2011, PRESS/628

In April 2009, the Chinese authorities launched a pilot project to allow exporters and importers in Shanghai, southern Guangzhou, and the cities of Shenzhen, Zhuhai and Dongguan to settle cross-border trade deals in RMBs. By the end of 2010, this project had been extended to a further 20 provinces and cities. At the same time, the overseas areas included in the project were expanded to cover not only Hong Kong and Macao and the ASEAN countries but also all of China’s trading partners. Since then the use of the RMB in cross-border trade settlements has continued to grow at an accelerating pace. By February 2011, about RMB725 billion ($114 billion) of trade was settled in RMBs, which was 201 times greater than the amount in 2009 (People's Daily, March 2011). However according to data provided by the People's Bank of China (BOC) in the first quarter of 2011, RMB725 billion still only represents about 7% of the cross-border trade settlements.

One of the major steps taken by the Chinese authorities to promote the use of the RMB in cross-border trade settlements was the establishment of regional trade agreements. The above table shows that regional and emerging economies (ASEAN, BRI and South Korea) represent about 30% of total Chinese trade. Learning the lesson from the 1997 Asian financial crisis, closer links with the Asian region's economies have been created. The ASEAN–China Free Trade Area (ACFTA) became effective on 1 January 2010 and China is also negotiating a regional trade arrangement with India and seeking more trade co-operation with Russia. In March 2006, China and India set up a joint task force to study the feasibility and benefits that could be derived from a regional trading arrangement between the two countries (See: Bhattacharya and Bhattacharyay 2006). In November 2010, China and Russia agreed to use their own currencies for their bilateral trade at a meeting in St. Petersburg. Recently, in May 2011, China, Japan and South Korea, meeting on the side-lines of the Asian Development Bank (ADB) annual meeting in Hanoi, announced that they would study the use of their own currencies in trade settlements with one another. It is this co-operation between regional and emerging countries that has enabled emerging countries to safely navigate through the recent global economic instability. However, the intention to use the RMB for cross-border trade settlements is still applied only on a voluntary basis.

Today, cross-border trade settlements tend to concentrate on imported goods and the transactions tend to be concentrated in Hong Kong. In the first quarter of 2011 about 86% of cross-border trade settlements were handled by Hong Kong (Sources: People's Daily online, June 2011). For companies in China, the use of the RMB in trade settlements can certainly reduce their transaction costs but for their trading partner, especially western customers, this is not the case. The crucial point is that western companies need to have a channel of access to the RMB market. This is the reason why most of the RMB trade settlements take place in one of the major offshore RMB centres, namely Hong Kong. In Hong Kong, with its linked exchange rate system and well-developed financial infrastructure, a company can borrow US dollars at a low interest rate and deposit them in RMBs at a high rate. This creates a huge pool (outside Mainland China) of RMBs which is accessible to western companies. Additionally, it is the strategic plan of the Chinese authorities to turn Hong Kong into an RMB offshore centre. It is obvious that the development of the use of the RMB for cross border trade settlements is closely related to the financial liberation of China.

Contribution of China's Major Trading Partners to total trade 2010

	Total Trade	Exports to	Imports from
EU	17%	20.10%	13.20%
US	13.60%	18.30%	8.00%
Japan	10.50%	7.40%	13.80%
ASEAN	10.30%	8.90%	12.10%
Hong Kong	8.10%	14.10%	0.70%
South Korea	7.30%	4.40%	10.80%
BRI	6.40%	6.10%	6.60%

Source: IMF Direction of Trade Statistics
ASEAN: ASEAN members include Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar (Burma), the Philippines, Singapore, Thailand, and Vietnam.
BRI: Brazil, Russia, India

In a demand driven market, it is easier for a consumer to convince a supplier to settle the transaction in their own currency. As shown in the above table, China's regional and emerging trading partners contributed a larger proportion of imports than of exports. Altogether, Japan, ASEAN, South Korea and BRI contributed 43.3% to total imports and 26.8% to total exports. In the reverse case; the western countries, the EU and the USA contributed 38.4% to exports[1] and 21.2% to imports. This is the reason why recent progress in China's bilateral trade arrangements is concentrated in the regional and emerging trading partners. To increase the incentive for foreign countries to use the RMB in cross border trade settlements, China needs to rebalance her growth model from an export-Capital formation-led growth to an export-consumption-technology-led growth. With the huge size of the consumption market, it is becoming easier to convince other countries to use the RMB for their trade settlements.

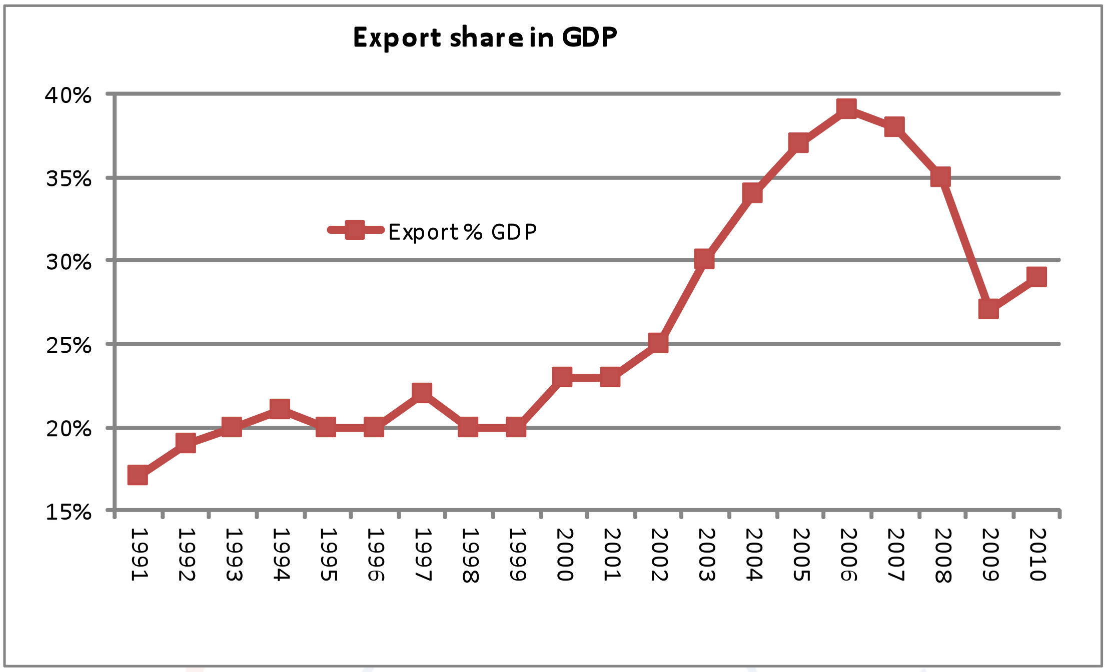
Taking the above into consideration, the future development of RMB cross-border trade settlements will start in a nearby area such as Hong Kong and then extend to regions in which the economies are closely linked such as Japan, ASEAN, South Korea and BRI, before ultimately becoming global. Such a development would, of course, be constrained by the development of the Chinese consumption market and the liberalization of China's financial market.

Structural Change of the Chinese Economy

To promote the internationalization of the RMB, the Chinese economy needs to be stable and

[1] If the re-export from Hong Kong to western countries is counted, western countries may contribute around 45% to 50% of total China's export.

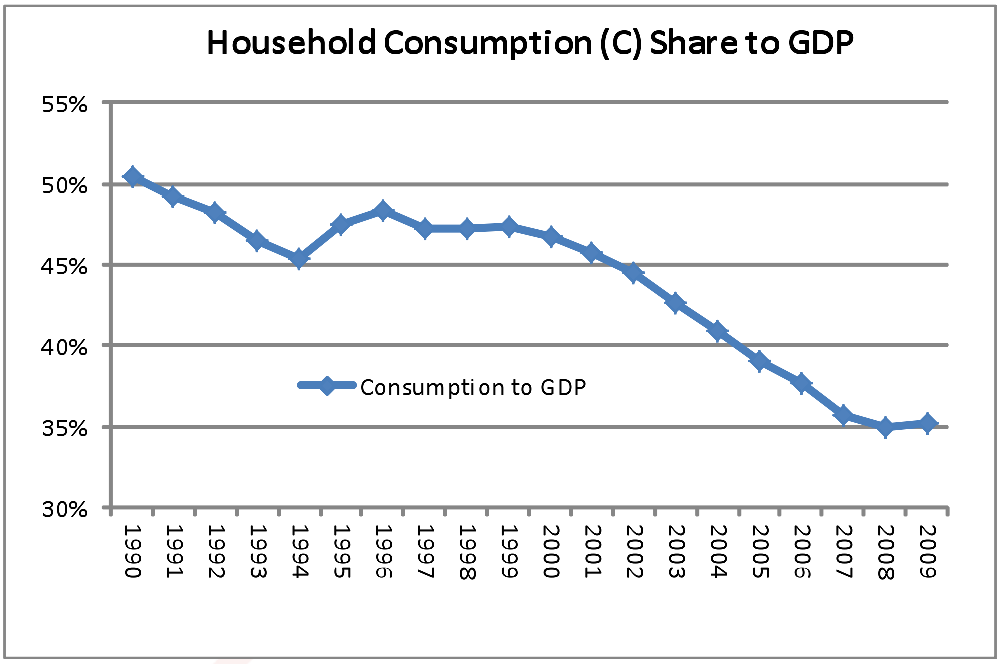
its growth needs to be sustainable. For the past two decades the Chinese economy has managed to maintain an average GDP growth rate of 10%.



Source: World Bank

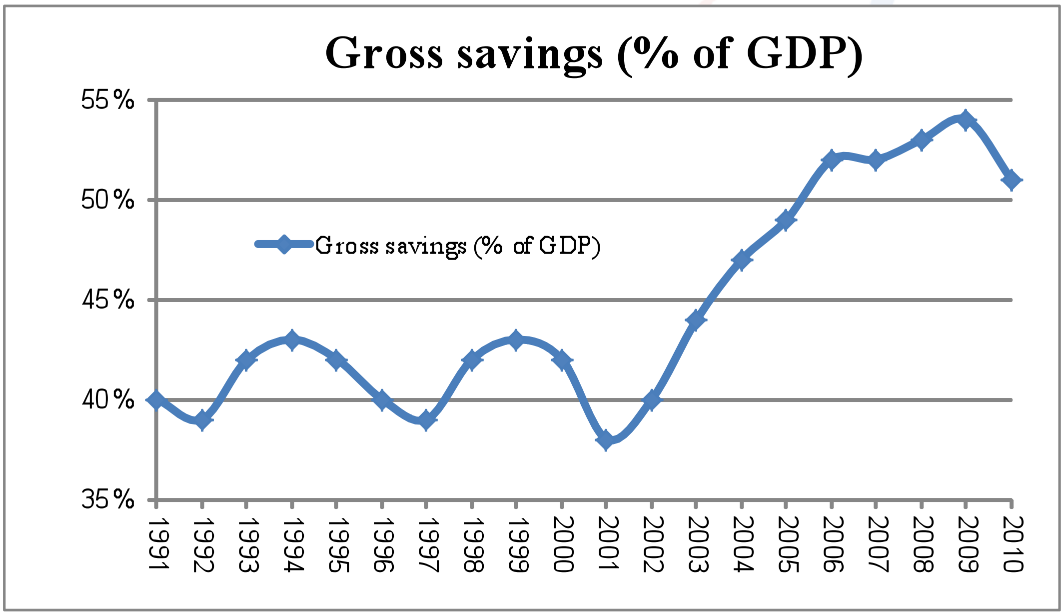
The recent western debt crisis will force the western authorities to cut their fiscal budget, thus reducing their aggregate demand. It is expected that the western economies will grow only slowly over the next few years and the demand for China's exports will be reduced. In addition, the appreciation of the RMB, as it goes international, will also contribute to reducing the level of exports. China can no longer depend on exports to maintain her high growth rate. The above figure shows that the appreciation of the RMB (after the reform in 2005) has caused the export to GDP ratio to fall from its peak (39%) in 2006 to 27% in 2009. It is widely agreed that the engine for growth comes from exports and fixed capital formation, but China's growth model is now running into a bottleneck.

Progress towards the internationalization of the RMB depends on the economic power of China, so the expected slowdown of growth in western economies provides China with an opportunity to pick up a larger share of the global economy and this would be favourable for the internationalization of the RMB. But to take advantage of this opportunity, China needs to change its export-led growth model.



Source: National Bureau of Statistics of China

Indeed, in the Eleventh five year plan (2006 to 2010), the Chinese authorities recognized the importance of rebalancing the growth to domestic consumption orientated model. However, not everything went according to plan; the above figure shows that the household consumption to GDP ratio continued to decline, from 50% in 1990 to 35% in 2009.



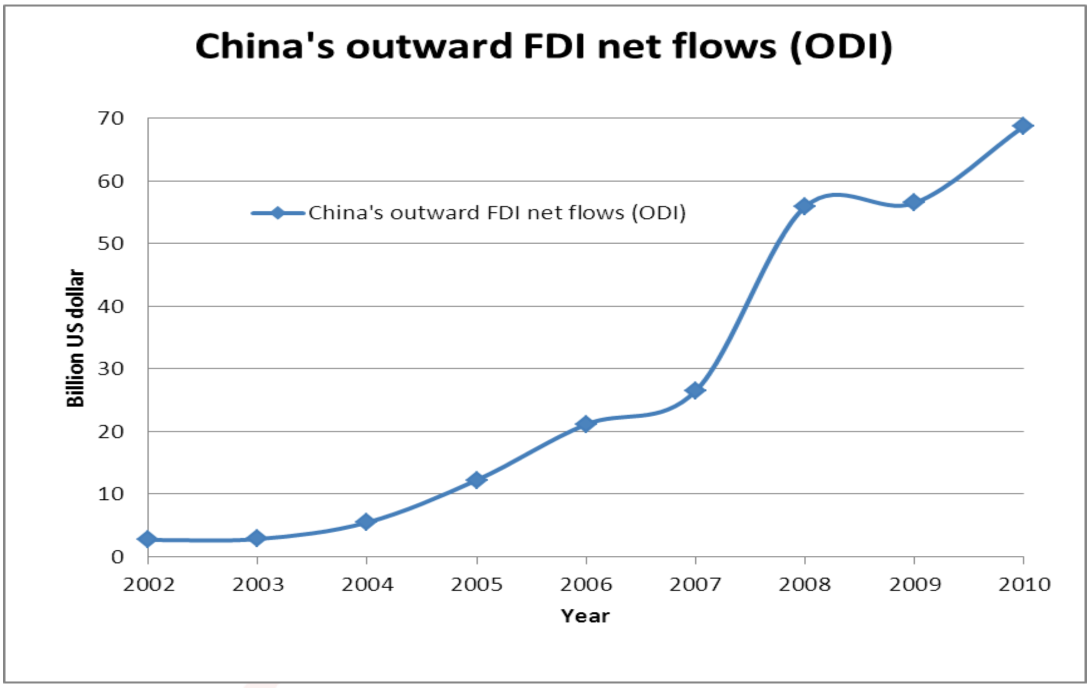
Note: Gross savings are calculated as gross national income less total consumption, plus net transfers.
Source: World Bank national accounts data, and OECD National Accounts data files.
Catalogue Sources: World Development Indicators

Grossing savings as a percentage of GDP rose from 39% (33.3%, private saving; 5.7%, public saving)[2] in 1992 to 51.4% (44.7% private; 6.7%, public saving)[2] in 2008. The literature has reviewed many explanations for the high savings rate in China, such as the weak social security net, the lack of investment tools and the bias towards consumption (See: Blanchard and Francesco 2006; Kuijs 2006). The above figure shows that the waves of increases in savings follow closely the economic crises. The first wave began in 1992, following the 1990-1991 US economic recessions, and the second wave began in 1997, reflecting the Asian financial crisis. After 2001 (in reaction to the IT bubble) the savings continued to increase through the SAR crisis (2003) and the global financial crisis (2008). They began to fall by 2009 in line with the recovery of the world economy. As predicted by the life cycle and permanent income hypothesis, Chinese people tend to save for their future whenever there is an economic downturn. The financial market in China is still at the development stage, and there are not enough tools available to investors to use to hedge against any potential risk to their wealth. The limited ability of the Chinese household to hedge against any uncertainty about their future living standards causes Chinese people to save more. Channelling these savings into consumption will depend on the liberalization of the Chinese financial market.

Liberalization of the Financial Market

The new challenge now facing the Chinese economy is to balance growth and inflation, especially food and property inflation. With the inadequacy of the tools available in the financial market to fight against inflation, money tends to float into the property market. Buying real assets, and in particular property, is a traditional way that Chinese people hedge their wealth against inflation. However, too much money washing around the highly inelastic supply of property, especially in the short run, will push property prices up and create a speculative asset bubble. High property prices will also increase the costs for businesses, for example rental costs, thus spreading inflation from one sector into another. The Chinese authorities have tried hard to prevent inflation from spreading to other sectors of the economy by tightening monetary policy and channelling RMBs offshore. But these channels involve outbound direct investment (ODI), currency swaps, using the RMB for trade settlements for imported goods and issuing of RMB denominated bonds offshore.

[2] Source: world bank GDH 2010 p.g.30



Source: 2010 Statistical Bulletin of China's Outward Foreign Direct Investment

Since 2005 (the most recent phase of RMB internationalization), China's ODI has increased dramatically from $5.5 billion in 2004 to $68.81billion in 2010. China's ODI ranked fifth among all economies in 2010, picking up around 5.62% of world ODI.

RMB Local Currency Swap Arrangements

Effective Date	Country	RMB (Billion)
Dec 2008 (Renewed in Oct. 2011)	Republic of Korea	180
Jan 2009 (Renewed in Nov 2011)	Hong Kong	200
Feb 2009	Malaysia	80
March 2009	Belarus	20
March 2009	Indonesia	100
April 2009	Argentina	70
June 2010	Iceland	3.5
July 2010	Singapore	150
April 2011	Uzbekistan	0.7
April 2011	New Zealand	25
May 2011	Mongolia	5
July 2011	Kazakhstan	7
October 2011	Republic of Korea	360
November 2011	Hong Kong	400

Source: People's Bank of China

Before 2008, China's currency swap arrangements were expressed in US dollars. Starting in late 2008, China began to sign a series of bilateral currency swap agreements denominated in RMBs (See the above table). China had signed 12 currency swap agreements with a total swap volume of RMB841.2 billion by 2011. The currency swap agreements provide RMB liquidity offshore that can be used by overseas investors for trade settlements, as a store of value and as investment currency.

Since 2005, the Chinese authorities have approved the issue and trading of Panda bonds, an RMB denominated bond issued by qualified foreign issuers and sold in China. By 2011, Panda bonds to a value of around RMB60 billion had been issued. In July 2007, the Hong Kong financial market was allowed to issue an RMB denominated bond, called the Dim Sum bond. The number of Dim Sum bonds issued jumped from a total value of RMB10 billion in 2007 to RMB36 billion in 2010. In the first five months of 2011, a total of RMB28 billion was issued by 28 issuers including the World Bank, the Asian Development Bank and the International Finance Corporation (reported in The People's Daily online, June 2011). Since 2007, Dim Sum bonds totalling over RMB100 billions of have been issued by 55 issuers.

Opening up the use of the RMB requires the co-operation of both offshore and onshore banking services in order to maintain the clearing balance. The advantage of an offshore RMB centre is that, as the RMB goes international, the offshore centre can serve as a firewall to buffer against potential volatility in the market. Indeed, it is not only Chinese investors who are looking for investment opportunities, but also foreign investors who are seeking out RMB financial assets. Under the one country, two systems policy, Hong Kong, although formally one of the cities of China, can still maintain her own currency and linked exchange rate system. This places Hong Kong in a unique position to serve as the offshore RMB centre for China. As a well-developed international financial centre, the financial infrastructure in Hong Kong can provide services for trade settlements in RMBs, and offer a variety of RMB financial investment and wealth management services. These can include, for example, RMB Bond funds, non-delivery RMB forward, Structured RMB deposits, RMB-denominated IPOs and RMB insurance policies. Indeed Hong Kong was the first place outside Mainland China that was allowed to provide RMB banking services (since 2004) and, since 2007, to run the only RMB bond market. The building up of an RMB fund pool in Hong Kong has made dramatic progress in recent years. RMB deposits reached RMB609 billion in August 2011, about 10 times the level in 2009 (Source: HKMA, August 2011).

The build-up of RMB deposits in Hong Kong revealed the need for a channel to connect it to the Chinese financial market. Recently, in September 2011, the Chinese authorities approved policies that would allow RMB Qualified Foreign Institutional Investors (RQFII) to invest in the securities markets in Mainland China, and the ETF (Exchange Trade Fund) of Hong Kong to be listed among the stocks in Mainland China. Opening this door for the RMB to "come back" to promote the development of China's financial market, and its integration with the global financial market, is an important step on the road to internationalization of the RMB.

However, the strategies for the "going out" and "coming back" of RMBs still have a long way to go. According to the quarterly review of the Bank for International Settlements (BIS) (March 2011), over 60% of the RMB daily turnover is carried out in a strictly off-shore mode, that is, outside the Chinese financial market between two non-residents. Indeed most of the offshore transactions are carried out in Hong Kong. On-shore transactions represent about 39%, and the amount of on-shore/off-shore transactions is very small. (See McCauley and Scatigna, (2011, p.72)). This may be due to the controls on the RMB that pushes trading offshore into non-deliverable financial instruments, resulting in a high proportion of strictly offshore transactions (See: Mihaljek and Packer (2010, p 54)). It can be foreseen that achieving financial integration between China and the rest of the world is another stage in the internationalization of the RMB.

Conclusion

This paper shows that the RMB has great potential to be an international currency, but that the internationalization process needs to pass through three interactive stages. The first stage is to build close economic relations with regional and emerging countries through bilateral trade agreements. These agreements can encourage trading partners to use the RMB to settle cross-border trade. In order to convince its trading partners to use the RMB, China needs to transform itself into a consumption-led growth economy and provide channels for the RMB to circulate across borders since the capital account of China is only partially open. In a demand driven market, consumers normally have higher bargaining power concerning the use of the local currency to settle transactions. This paper argues, therefore, that the second stage will be the transformation of China's economy into a consumption-led growth model. With the current debt crisis, it is expected that the growth rate of western economies will be very slow. To maintain the growth of the Chinese economy, therefore, the growth engine needs to shift from being export-led to being consumption-led. However the transformation of the Chinese economy requires the liberalization of China's financial market. The lack of financial tools available to China households to help them to hedge against inflation has caused them to save more during times of economic crisis. However, the development of a financial market will need time to allow both regulators and investors to learn how to manage and survive in a complex financial market. One shortcut perhaps would be to allow the RMB to "go out", making use of Hong Kong as its offshore centre. Chinese investors could take advantage of the well-developed financial infrastructure and tools in Hong Kong to hedge against inflation. On the other side, foreign traders need a channel to get the RMBs back into China, so, as the offshore centre, Hong Kong can co-operate with the onshore banking services and thus help the RMBs to "go back". Alongside the development of this offshore RMB trading centre, there should also be a funding pool of RMBs built up offshore which could serve as a buffer to protect the RMB against harmful fluctuations. Thus the third stage would be the liberation of the financial market.

According to the historical pattern, the next five years should be the critical time for the internationalization of the RMB. Although at present the RMB is only partially open to the world, it is clear that the Chinese authorities would like to take further steps to promote its internationalization. It has to be admitted that at present the internationalization of the RMB is still in its infant stage, but China has always been capable of surprising the world, especially in economic development. It is possible that the RMB might be able to pass through the three stages and take a big step towards internationalization within the next five years.

References

2010 Statistical Bulletin of China's Outward Foreign Direct Investment, 2011. China Ministry of Commerce. Sep.

Bhattacharya S.K. and Bhattacharyay B.N. 2006. Free Trade Agreement between People's Republic of China and India: Likely Impact and Its Implications to Asian Economic Community. Asian Development Bank (ADB) Institute. Discussion Paper No. 59.

Blanchard. O. J. and Francesco G. 2006. Rebalancing Growth in China: A Three-Handed Approach. China and World Economy 14. 4. 1–20.

Chinn. M and Frankel J. 2005. "Will the euro eventually surpass the dollar as leading international reserve currency? NBER Working Papers. No. 11510.

Finance Market. 2011. China could surpass US and become world's no.1 economy. Aug

Genberg H. 2009. Currency internationalisation: analytical and policy issues, Bank for international settlements (BIS). Asia research program. Research paper. Aug.

Hong Kong Monetary Authority (HKMA). 2011. Monetary Statistics for August.

International Monetary Fund (IMF). World Economic Outlook (WEO) Database. October 2010.

International Monetary Fund (IMF). World Economic Outlook (WEO) Database. April 2011.

Kenen P. 1983. The role of the dollar as an international currency. Group of Thirty Occasional Papers. no 13. New York.

Kenen P. 2009. Currency internationalisation: an overview. BIS. Asia research program, research paper. Aug.

Kuijs L. 2006. How Will China's Saving-Investment Balance Evolve? Policy Research Working Paper 3958. World Bank. Washington. DC.

McCauley R. and Scatigna M. 2011. Foreign exchange trading in emerging currencies: more financial, more offshore. Quarterly Review. March. pp 67 to 75.

Mihaljek D. and Packer F. 2010. Derivatives in emerging markets. Bank of International Settlements (BIS). Quarterly Review. December. pp 43–58.

People daily online. 2011. Cross-border yuan trade settlement may expand nationwide. Li Jia. March.

People's Daily online. 2011. Record RMB bond issued in HK in first 5 months: official. June.

People's Bank of China. 2009. Monetary policy report of the People's Bank of China (PBC). 3Q09.

World Trade 2010. Prospects for 2011. World Trade Organization (WTO). April. PRESS/628.

World Trade Organization (WTO). World trade press. 2010.

Yu Y.D. and Gao H.H. 2009. Internationalization of the Renminbi. Bank for international settlements (BIS). Asia research program. Research paper. Aug.

Zhu M. 2011. Emerging Challenges. Straight Talk. Finance & Development. IMF. June. Vol. 48. No. 2

The Relationship between Information Technology Investment and Firm Performance with the context of Sufficiency Economy Philosophy

Natnarong Jaturat , Terawat Piboongungon , and Werayuth Charoenruengkit
Faculty of Business Administration
Rajamangala University of Technology Thanyaburi, Thailand
mr.natnarong@gmail.com, terawatp@gmail.com, wcharoe@yahoo.com

Abstract

This research study how Information Technology (IT) Investment based on Sufficiency Economy Philosophy (Moderation, Reasonableness, and Self-immunity mechanism) affects firm performance. The attitudes rating of IT investment are used as independent variables whereas the IT-investment managements based on Sufficiency Economy Philosophy are mediator variables. The attitude rating of firm's convenience and the ROA (Return on Assets) are used as proxy of assessment firm performance, which are the dependent variables for this study. The samples used in this research are 373 firms listed as medium and large manufacturing business in Thailand. The Structural Equation Model is used to analyze the attitude rating scale from CIO (Chief Information Officer). The results show that the goodness of fit and regression weight significant supported all hypotheses (p< .05). IT investment with the context of Sufficiency Economy Philosophy has a positive direct relationship with the firm's convenience and indirect relationship with ROA. The research also discuss the relationship by showing that the firms properly balance between IT investment and firm environment according to Moderation, implementing knowledge management to build healthy firm growth according to Self-immunity, and monitoring and measuring the worth of IT usage according to Reasonableness. As a result , the firms achieve convenience and a good ROA, respectively.

JEL: D80, Q01

Key words: Information Technology Investment, Sufficiency Economy Philosophy

1.Introduction

The main objective of Information Technology (IT) investment in organizations is to increase productivity and profitability of organizations. Information Technology (IT) is a tool for supporting and enhancing competitive capability of the organization and improving quality of customer service. Customer receives convenient services and satisfaction through IT infrastructure. Businesses also use IT for supporting and operating their work to achieve higher effectiveness and business outcomes. The typical IT-investment mainly focuses on productivity organization resources and business processes. Most business firms improving business process usually change their business processes into IT as digital-base and result in the readiness to present electronic commerce and present to global market(Porter, 2001). High management levels also used information from digital-base and make accurately and correctly decisions.

Many businesses include IT into their main part of strategic planning. Business environment changes stimulate a better use of existing IT infrastructure and a new IT investment in the organizations. Sometimes, IT technologies changes may cause the organization to adjust the existing strategies or emerge new strategies accordingly. As a result, IT investment will be changed as well. Furthermore, IT-investments are also positioning the firm for growth option value(Ranganathan & Carol, 2006). The benefits of option value are the ability for future.

In the last two decade, several researchers have investigated IT investment strategies and firm performance. The results from studies have shown that some strategies have directly relationship but some have no significant effect on the firm performance. The IT investment strategies contributed positive results on a firm performance have been listed as following papers: knowledge management(Tanriverdi, 2005), resource based view(Ferguson, Finn, & Hall, 2005), IT governance(De Haes & Van Grembergen, 2009), IT agility(Sambamurthy, Anandhi, & Varun, 2003), and IT cost management(Jeanne, Michael, & Cynthia Mathis, 1999; Peacock & Tanniru, 2005; Thouin, Hoffman, & Ford, 2008)

On the other hand, other groups of researchers have found that IT investment does not always bring an improvement of firm performance. Brynjolfsson and Hitt (1998) described the situation "productivity paradox problem". The researchers have elaborated that a little improvement of firm performance after applying IT investment occurs because of lack of IT management. The studies on comparison of the different event and dependence of strategy intention listed as following papers: CIO background(Curtis & Sambamurthy, 1999), environment(Chen, 2007; Iyer, Germain, & Claycomb, 2009; Keramati, Azadeh, & Mehran-Gohar, 2009; Ranganathan & Carol, 2006), developing and developed country(J. K. Kim, Xiang, & Lee, 2009; Shih, Kraemer, & Dedrick, 2007), culture(N. Shin, 2009; S. K. Shin, Ishman, & Sanders, 2007), firm size.

In Sufficiency Economic business practice of Kantabutra(2010) and Puntasen, Premchuen, & Keitdejpunya(2003), their suggestion concern with how to use technology, innovation and knowledge to advance business efficiency. The IT is a part of technology that is used as a tool to support business process and operation. The IT requires different strategies to manage in order to support sustainable business. Furthermore, Rewrite -> the Sufficiency Economy Philosophy has been adopted in Thailand and empirically show results that well apply to sustainable business. However, no research has emphasized on the IT investment with the context of Sufficiency Economy Philosophy. This research emphasizes on how businesses invest IT and manage IT with Sufficiency Economy Philosophy to achieve firm performance.

2. Scope of the Study

This research refine the model of IT investment with the Sufficiency Economy Philosophy. The comprehensive research will contribute to businesses, which invest or reinvestment the Information Technology. The new approach will show how to manage the Information Technology Investment with the Sufficiency Economy Philosophy. The finding model help CIO to improve the strategic planning on investment in the duration of recession limit, and they also can continually improve their firm performance.

3. Research Objective

1) To explore and study the IT strategies that use in organization.

2) To develop and to test a model of IT investment and firm performance with the context of the Sufficiency Economy Philosophy.

3) To find out the related factor of the relationship of IT strategic management with Sufficiency Economy Philosophy that affect to firm performance.

4. Research Framework

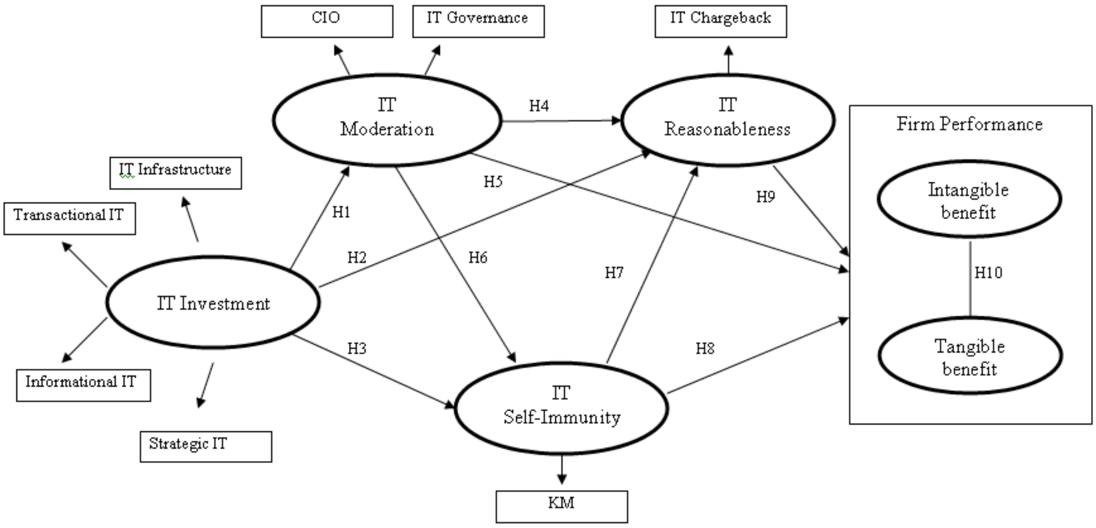


Figure 1 Research Framework

5. Review of the literature

5.1 Chief Information Officer (CIO)

CIO is an executive reporting direct to CEO and is responsible for managing IT of organization such as hardware, software and IT staff. CIO title was emerged on top management in the 1970s. The roles of CIO are important, because the organizations commonly concern about the management of IT spending to archive an outcome. Usually, CIO role should understand business process and IT, and adapted both business and IT suitably to be an advantage for enterprise(Curtis & Sambamurthy, 1999). The CIO with IT background and strategic oriented to IT rather than utilitarian oriented or generic management (Sobol & Klein, 2009).

5.2 IT Governance

The IT governance is a subset of corporate governance and responsibility of organization leadership. IT governance is a process that ensures an organization to decide how to deploy Information Technology as impartial, faithful, accountability management and law compliance. Thus, firm has to impose requirements on internal control and reporting. IT resource was directly considered and controlled to archive firm's goal. Assisting to control information in organization, the Control Objectives for Information and related Technology (COBIT) is the best practice for improve the performance of IT investment through ethics, internal control, and corporate governance and law compliance. The Information Systems Audit and Control Association (ISACA) and Information Systems Audit and Control Association (ITGI) created COBIT in 1996. COBIT ensures optimized IT investment, good service delivery and good detail for metrics. COBIT consist four primary domains; Plan and Organize, Acquire and Implement, Deliver and Support, and Monitor and Evaluate. It consists of 34 processes that firm should meet all of process. In addition, each process has to meet seven information criteria: Effectiveness, Efficiency, Confidentiality, Integrity, Availability, Compliance, and Reliability and each process consist of People, Information, Applications, and Infrastructure as IT resources. Bowen, Cheung and Rohde(2007) divided IT governance research into two groups, IT governance as structure and IT governance as process. The IT governance as structure involves functions for making decision responsible both business and IT executive, whereas IT governance involves the process of IT implementing. De haes and Van Grembergen (2009) stated that the business and IT alignment maturity is higher when organization are applying a mix of mature IT governance practice.

5.3 IT Chargeback

According to IT governance, CIO has to report cost of the IT management to stakeholders. CIO should manage IT as impartial, faithful, accountability management and law compliance. Normally, a centralized department bears all of the IT costs in a firm and those costs are treated simply as firm overhead. It indicates that IT cost is the indirect cost. For managing costs of IT, firm should charge IT cost to real work. They consider IT as a complement with others for supporting their processes and create convenience for their job. . The IT chargeback helps tracing cost of IT usage or IT service they use. Ross and Beath (2006) suggested that IT chargeback fulfills the fairs and reasonable financial report and leads to the better IT investment and usage decision. However, IT chargeback is cost allocation and related only with internal cost. IT chargeback does not reduce current cost, but it details real organization cost that leads to faith and reasonableness.

5.4 Knowledge Management

The knowledge management has been a significant component for a firm. The processes of knowledge management comprise of creation, representation, and adoption into a firm. Knowledge has divided into two types: Explicit Knowledge and Tacit Knowledge. Explicit knowledge is a knowledge that can be explained into data and easy to understand. Tacit knowledge is an individual experience of people. Organization will transfer tacit knowledge to explicate knowledge by implementing knowledge management. The knowledge is created through a spiral process of socialization, externalization, combination, and internalization (SECI)(Nonaka, 1994). Due to Resource-Advantage theory of competition, knowledge has the characteristic of heterogeneity, uniqueness and immobility, effect to firm performance as the competitive advantage. The rival difficulty imitates because knowledge is complexity. Therefore, if the business wants to achieve performance, the knowledge management is an important consideration. Li, Huang and Tsai (2009) examine the Taiwan firms, founded in ten years, on Entrepreneurial orientation, Knowledge creating and firm performance. They found that Entrepreneurial orientation has positive effect to firm performance by mediating of knowledge creating. Besides knowledge effect to financial firm performance, it also affects to new product performance(Vaccaro, Parente, & Veloso, 2010). Knowledge from inter-organization or intra-organization is more effective than that from single-organization. It will encourage to knowledge sharing because the culture and experience will transfer between them (Vaccaro, et al., 2010; Yang, 2010). The renewal innovation not only becomes necessary for survives and ability to competitive advantage but also advances to knowledge creation. The study of Díaz-Díaz, Aguiar-Díaz, and DeSaá-Pérez (2008) found that knowledge management indirectly effected to firm performance and mediated by innovation. In addition, the finding of Craighead, Hult, and Ketchen Jr (2009) show that firm need to manage knowledge of supply chain's innovation–cost strategy because it enhances to superior performance.

5.5 IT investment with Moderation Concept

The IT investment should consider the investment with the Moderation Concept which manages by CIO. The CIO has to design an appropriate IT planning by considering the limitation of resource and IT staff and using IT governance to manage IT as the ethics, accountability, and comply with laws.

5.6 IT investment with Reasonableness Concept

The responsible of CIO is not only suitable with a firm, but also reasonable. Firm will conceive the IT investment reasonableness by monitoring and showing the real cost of IT. The IT chargeback is tools for recording IT usage and tracing to accurate real cost of IT. The outcome of IT reasonableness will affect to the better decision for reinvest IT and know that they use IT suitable with the capability of them.

5.7 IT investment with Self-Immunity Concept

When a firm plans to have a new IT investment, they should have leverage the knowledge from previous of firm performance before design new strategies of IT investment. The firm knowledge such as solution of the problem and tactic should be feed back to consider before the decision to reinvest IT next year.

6. Methodology

6.1 Population and Sample

Because this research studies CIO, IT governance, IT chargeback and Knowledge Management, the medium and large enterprise that has the total assets more than 200 million baht is to be suitable to collecting data. The 4,139 manufacturing firms list on the Department of Business Development of the Ministry of Commerce of Thailand are the research population. Sample size is processed as subset of population to study, which follows a formula of Yamene with 95 confidence level.

$$n = N/(1+N*(e)^2)$$

Where "n" is the sample size, "N" is the population, and "e" is error value.

The 4,092 firm population applied into Yamane formula with 95% confidence level is 365 firms.

6.2 Variable

1) Independent variables are IT Infrastructure, Transactional IT, Informational IT and Strategic IT.

2) Mediator variable are CIO, IT Governance, IT Chargeback, and Knowledge Management

3) Dependent variable are IT Convenience, IT Competitive Advantage, and ROA

4) Control variable are SaleGrowth, Firm's year, Firm's size

6.3 Content Validity Testing

The content validity is used for assess the questionnaire covers the theory of IT investment. The questionnaire will be assessed by the five expertises in IT investment field and then adjusted the term from expertise suggestion. The discriminate validity will be tested by the factor analysis. Usually, there are many questions representing each factor or variable. If the questions represent different variables, it will be summarized into different groups by factor analysis. Then, the convergent validity will test by the correlation statistic. If the questions represent the same variable, there are correlation among them.

6.4 Reliability Testing

This research tests the internal consistency of reliability by the cronbach's alpha after designing the questionnaire. The score ranges from 0 to 1 and the acceptant of the score of this research are more than 0.7(Vaus, 2002).

6.5 Model Analysis

For analyze statistic research model, we will use Structural Equation Model (SEM) analysis which have steps for analyze as following.

1) Construct the model that related with variable in search framework

2) Define Latent Variable: Investment, IT Reasonableness, IT Moderation, IT Self-Immunity and Firm Performance

3) Define observe variable to latent variable

4) Assessment the model fit

4.1) Chi-Square/ Degree of Freedom should less than 3.00

4.2) Root Mean Square Error of Approximation should less than 0.05

4.3) Good of fit index approach to 1

4.4) Comparative fit index approach to 1

4.5) Root Mean Square Residual should less than 0.05

5) Consider the Standardized Regression Weights that accept model if it has significant and Square Multiple Correlation for confident of prediction of model

After the model is accepted, the result of regression weight will consider for hypothesis testing. If regression weight are significant, it will indicate that the variable at the beginning arrow affect to the end.

7. Research Result

To prevent unreturn questioniares, the questionnaires were mailed to 1,600 manufacturing firms. Then, the responses were randomly selected for 373 firms. Convergent and Discriminant Validity were tested before constructing the Structural Equation Model. The Convergent Validity used to verify that the indicators can represent into latent variable. If they represent in same latent, they must be positive correlate together. And then the Discriminant Validity testing was performed to show that the indicators represent on the same latent variable and not associated with indicators of the other latent.

7.1 Convergent Validity

The researchers measured Convergent Validity with Confirm Factor Analysis. If the research model is converged, the value of factor loading should be greater than 0.6(Kalaya Wanichbuncha, 2008). The Figure 2 shows example of confirm factor analysis for Convergent Validity testing. The results show all of factor loading in Table 1

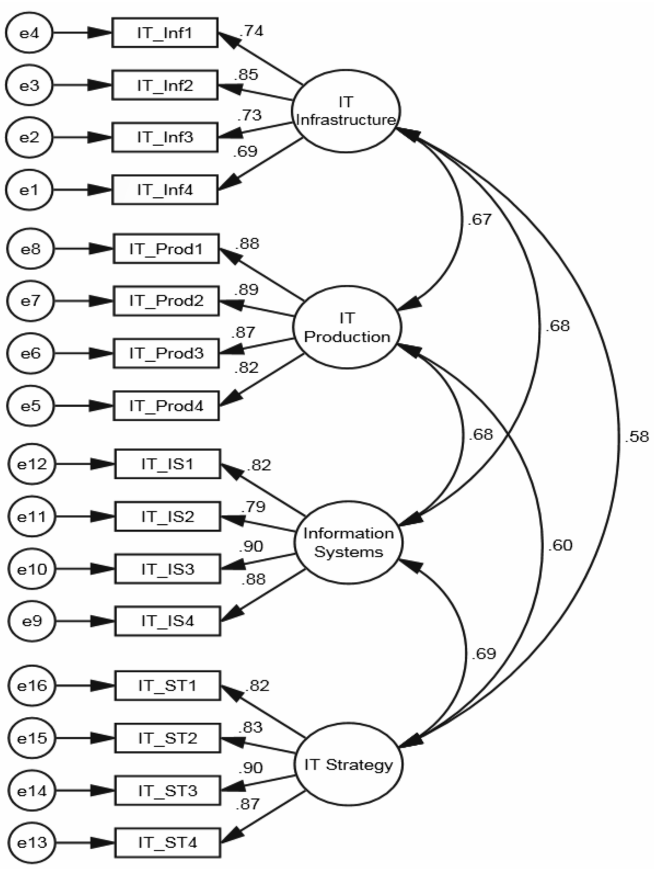


Figure 2 Factor loading of IT Investment

Table 1 Factor Loading of all latent variables

Variable	Factor Loading
IT_Inf	
IT_Inf1	0.740
IT_Inf2	0.846
IT_Inf3	0.731
IT_Inf4	0.694
IT_Prod	
IT_Prod1	0.877
IT_Prod2	0.894
IT_Prod3	0.870
IT_Prod4	0.815
IT_IS	
IT_IS1	0.824
IT_IS2	0.793
IT_IS3	0.897
IT_IS4	0.884
IT_ST	
IT_ST1	0.821
IT_ST2	0.825
IT_ST3	0.900
IT_ST4	0.867
CIO and ITG	

Variable	Factor Loading
CIO1	0.633
CIO2	0.745
CIO3	0.768
CIO4	0.797
ITG1	0.757
ITG2	0.775
ITG3	0.738
ITG4	0.564
IT_ChB	
IT_ChB1	0.759
IT_ChB2	0.809
IT_ChB3	0.743
IT_ChB4	0.705
KM	
KM1	0.873
KM2	0.911
KM3	0.828
KM4	0.828
Conveniences	
Con1	0.857
Con2	0.954
Con3	0.972
Con4	0.715
Competitive	
Com1	0.821
Com2	0.897
Com3	0.910
Com4	0.816

Considered in the table 1, ITG4 is not convergent so that it is dropped in this step.

7.2 Discriminant Validity

After the measurement Convergent Validity, the researcher then measures the Discriminant Validity. From Convergent Validity consideration, if indicator has high factor loading, it is good represent for latent variables and then it affect latent variable to be high variance.

The first step for Discriminant Validity, model will construct pair of latent variable to test Discriminant Validity. Setting constrains variance of both latent variables to "1" and then, testing covariance between both latent variables (M. G. Kim & Kim, 2010) . If covariance is not higher than 0.85 and Goodness of Fit supported, then it has Discriminant Validity.

Second step, after setting model constrains covariance between latent variable to "1", If the model does not accept Goodness of Fit, it indicated that constrain does not true and both latent variables have no correlation.

However, the chi-square also has to consider the different value between both models testing. The chi-square should not less than 3.841 (M. G. Kim & Kim, 2010) for accept validity.

Example of testing between IT Production and Information Systems has shown in figure 3 and figure 4. The discriminant test between IT infrastructure and the rest of others will be performed similarly. This research perform iteration Discriminant Validity tests the rest of pair until complete and considers the condition value for accepted validity.

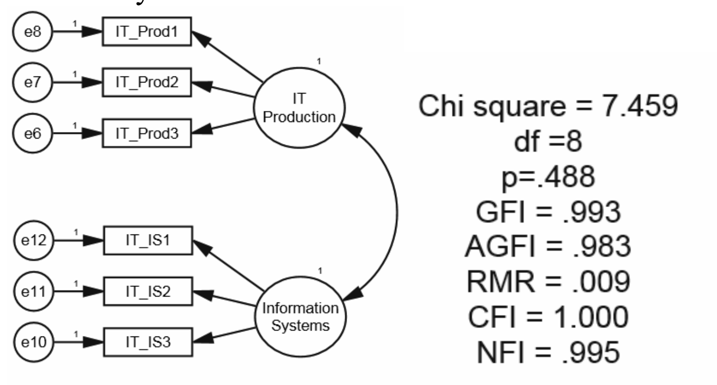


Figure 3 Fix Variance to 1 Free Covariance

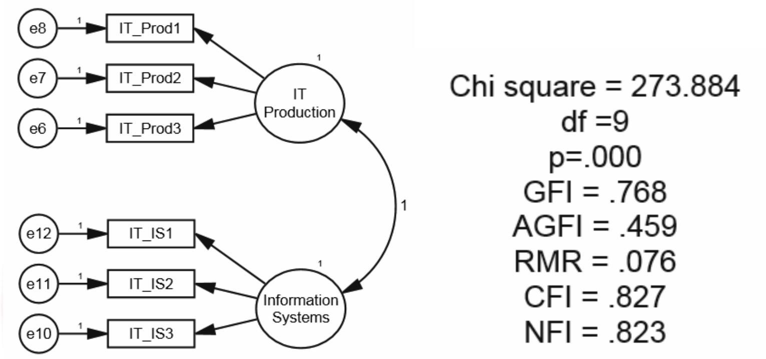


Figure 4 Fix Variance to 1 Fixed Covariance to 1

Table 2 Discriminant Validity test between IT infrastructure and Information Systems.

	Free covariance	Fixed covariance	Different Chi-square between Free and fix covariance
Chi-Square	7.459	273.884	266.428
p-value	0.488	.000	
correlation	0.70	1	

After Discriminant Validity testing, all of IT Strategies and Competitive, and some indicators are dropped because they do not pass the accepted value of Discriminant Validity with several pairs. So, the rest of indicators per latent variable are 19 indicators presented in table 3.

Table 3 The rest of indicator after Discriminant Validity

Latent Variable	Indicator
IT Infrastructure	IT_Inf1 IT_Inf2 IT_Inf3
IT Production	IT_Prod1 IT_Prod2

Latent Variable	Indicator
	IT_Prod3
IT Information System	IT_IS1 IT_IS2 IT_IS3
IT Moderation	CIO2 CIO3 CIO4
IT Reasonableness	ChB1 ChB3
IT Self-Immunity	KM2 KM4
Convenience	Con1 Con 3 Con 4

7.3 Construct Model and Hypothesis Testing

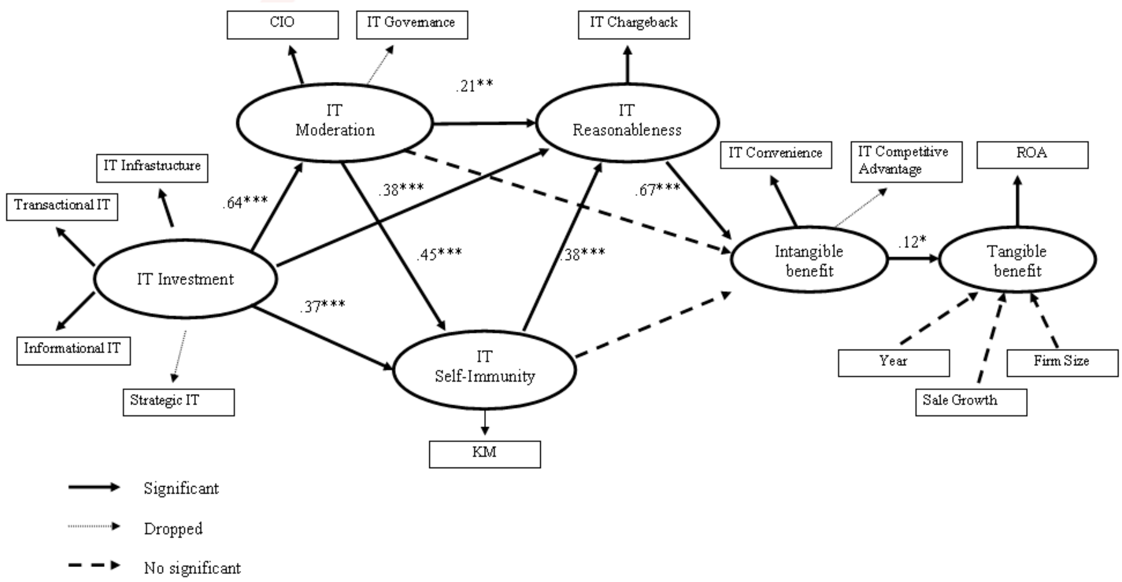


Figure 5 the result of model analysis

According to figure 5, the result of hypothesis testing show as follows:

H1 : The IT investment will have positive effect to IT Moderation concept. This hypothesis was support that IT investment positive effect to IT Moderation concept, with CIO, since a standard regression weight is 0.64($p < .001$). It indicated that firm which considered IT investment important will lead CIO to give high attention on suitable firm, comprehend to business and having strategic management.

H2 : The IT investment will have positive effect to IT Reasonableness concept. This Hypothesis was supported that IT investment positive effect to IT Reasonableness concept with IT chargeback, since a standard regression weight is 0.38($p < .001$). It indicated that, firm which gave important to IT investment will be inspected of IT usage, with IT chargeback.

H3 : The IT investment will have positive effect to IT Self-Immunity concept. This Hypothesis was support that IT investment positive effect to IT Self-Immunity concept, with KM, since a standard regression weight is 0.37($p < .001$). It indicated that firm giving important to IT investment, will lead to give consideration to manage IT knowledge of firm.

H4 : The IT Moderation concept will have positive effect to IT reasonableness concept. This Hypothesis was support that IT Moderation concept, with CIO, positive effect to IT Reasonableness concept, with IT chargeback, since a standard regression weight is 0.21(p< .01). It indicated that firm whose CIO has given important on the suitability of firm, comprehend to business and having strategic management will lead firm to monitoring IT usage.

H5 : The IT Moderation concept will have positive effect to firm performance. This hypothesis was not supported. The IT Moderation concept does not direct effect to firm convenience.

H6 : The IT Moderation concept will have positive effect to IT Self-Immunity concept. This Hypothesis was supported that IT Moderation, with CIO, positive effect to IT Self-Immunity concept, with KM, since a standard regression weight is 0.45(p< .001). It indicated that firm with CIO, who give important on the suitability of firm, will lead to study new IT knowledge and exchange with other in organization.

H7 : The IT Self-Immunity concept will have positive effect to IT Reasonableness concept. This Hypothesis was support that IT Self-Immunity concept, with KM, positive effect to IT Reasonableness concept, with IT chargeback, since a standard regression weight is 0.38(p< .001). It indicated that firm which manage IT knowledge will lead to monitor IT usage, with IT chargeback system.

H8 : The IT Self-Immunity concept will have positive effect to firm performance. This hypothesis was not supported. The IT Self-Immunity concept does not direct effect to firm convenience.

H9 : The IT Reasonableness concept will have positive effect to firm performance. The Hypothesis was support that IT Reasonableness concept, with IT chargeback, positively affect to firm performance, since a standard regression weight is 0.67(p< .001).

H10: The relationship between firm's benefit and ROA, we found that firm's benefit positively affect to ROA, since a standard regression weight is 0.12(p<.01)

The goodness of fit shown as follows: Chi-Square=239.463, df=211, p-value=0.087, GFI=0.948, AGFI=0.932, NFI=0.950, CFI=0.994, RMSR=0.036, RMSE=0.019(PCLOSE=1.00), and Hoelter=407(0.01).

The results of hypothesis testing of IT investing and firm's benefit found that there are accepted hypothesis H1, H2, H3, H4, H5, H6, H7 H9 and H10 and not accepted hypothesis H5 and H7. It is clear that the IT Investment has a positive effect to firm's benefit that the IT Reasonableness has a direct relationship, whereas IT Moderation and IT Self-Immunity not direct but through IT Reasonableness.

However, the hypothesis testing between IT investment and firm's ROA found that there are accepted hypothesis H1, H2, H3, H4, H5, H6, H7 and not accept H5, H7 and H9. The result indicated that the IT investment does not positively affect to ROA. The Hypothesis H10 shown that Convenience has positive effect to ROA. The standard indirect, direct, and total effect of model shows on table 4.

Table 4 The standard indirect, direct, and total effect of model

	Direct effect				
	IT Mod	IT Self	IT Rea	IT Con	ROA
IT Inv	.636	.356	.363		
IT Mod		.455	.245		
IT Self			.365		
IT Rea				.662	

IT Con					.127
	Indirect effect				
	IT Mod	IT Self	IT Rea	IT Con	ROA
IT Inv		.289	.391	.499	.064
IT Mod			.166	.272	.035
IT Self				.241	.031
IT Rea					.084
IT Con					
	Total effect				
	IT Mod	IT Self	IT Rea	IT Con	ROA
IT Inv	.636	.646	.755	.499	.064
IT Mod		.455	.411	.272	.035
IT Self			.365	.241	.031
IT Rea				.662	.084
IT Con					.127

According to hypothesis testing results, it wills positive effect to firm performance by sequence as follows: 1) Purchased IT to infrastructure, production and information systems, 2) Manage IT by CIO which suitable with firm environment, strategic management 3) Implemented knowledge management and 4) Finally record and monitoring IT usage.

8. Conclusion

This research study including CIO, Knowledge Management and IT chargeback. The research finding support theory as follows: 1) The CIO who have business skill, give importance of the suitability of the firm's environment before investing, and IT strategic management, will increase firm performance. 2) Firm implementing knowledge management and using it for decision making will increase firm performance. 3) The record IT usage and charge to real work and monitoring for worthwhile cost that will increate firm performance.

When the studies of three theories together for explore direction of the relationship among them within the framework with the context of Sufficiency Economy Philosophy, found that there is only IT chargeback direct relation to performance but not in Knowledge Management and CIO, they effect to firm performance through IT chargeback. It shows that, three theories have sequence of relationship as mentioned above.

Reference

Bowen, P. L., Cheung, M.-Y. D., & Rohde, F. H. (2007). Enhancing IT governance practices: A model and case study of an organization's efforts. *International Journal of Accounting Information Systems, 8*(3), 191-221.

Brynjolfsson, E., & Hitt, L. M. (1998). Beyond the productivity paradox. *Commun. ACM, 41*(8), 49-55.

Chen, C. J. (2007). Information technology, organizational structure, and new product development-the mediating effect of cross - Functional team interaction. [Article]. *Ieee Transactions on Engineering Management, 54*(4), 687-698.

Craighead, C. W., Hult, G. T. M., & Ketchen Jr, D. J. (2009). The effects of innovation-cost strategy, knowledge, and action in the supply chain on firm performance. *Journal of Operations Management, 27*(5), 405-421.

Curtis, P. A., & Sambamurthy, V. (1999). Information technology assimilation in firms: The influence of senior leadership and IT infrastructures. *Information Systems Research, 10*(4), 304.
De Haes, S., & Van Grembergen, W. (Writer). (2009). An Exploratory Study into IT Governance Implementations and its Impact on Business/IT Alignment.
Díaz-Díaz, N. L., Aguiar-Díaz, I., & DeSaá-Pérez, P. (2008). The effect of technological knowledge assets on performance: The innovative choice in Spanish firms. *Research Policy, 37*(9), 1515-1529.
Ferguson, C., Finn, F., & Hall, J. (2005). Electronic commerce investments, the resource-based view of the firm, and firm market value. *International Journal of Accounting Information Systems, 6*(1), 5-29.
Iyer, K. N. S., Germain, R., & Claycomb, C. (2009). B2B e-commerce supply chain integration and performance: A contingency fit perspective on the role of environment. *Information & Management, 46*(6), 313-322.
Jeanne, W. R., Michael, R. V., & Cynthia Mathis, B. (1999). The untapped potential of IT chargeback. *MIS Quarterly, 23*(2), 215.
Kalaya Wanichbuncha. (2008). *Multivariate Analysis* (3rd ed.). Bangkok.
Kantabutra, S. (2010). Development ot the Sufficiency Economy Philosophy in the Thai Business Sector: Evidence, Future Research & Policy Implications. from http://www.sufficiencyeconomy.org/old/en/files/26.pdf
Keramati, A., Azadeh, M. A., & Mehran-Gohar, M. (2009). *The Impact of Information Technology Investment on Bank Performance Considering the Role of Moderator Variables: Strategy and Environmental Dynamism.* Paper presented at the Information Management and Engineering, 2009. ICIME '09. International Conference on.
Kim, J. K., Xiang, J. Y., & Lee, S. (2009). The impact of IT investment on firm performance in China: An empirical investigation of the Chinese electronics industry. *Technological Forecasting and Social Change, 76*(5), 678-687.
Kim, M. G., & Kim, J. (2010). Cross-validation of reliability, convergent and discriminant validity for the problematic online game use scale. *Computers in Human Behavior, 26*(3), 389-398.
Li, Y.-H., Huang, J.-W., & Tsai, M.-T. (2009). Entrepreneurial orientation and firm performance: The role of knowledge creation process. *Industrial Marketing Management, 38*(4), 440-449.
Nonaka, I. (1994). A dynamic theory of organizational knowledge creation. *Organization Science, 5*(1), 14.
Peacock, E., & Tanniru, M. (2005). Activity-based justification of IT investments. *Information & Management, 42*(3), 415-424.
Porter, M. E. (2001). strategy and the internet. *Harvard Business Review*.
Puntasen, A., Premchuen, S., & Keitdejpunya, P. (2003). *Application of the royal thought about the Sufficiency Economy in SMEs*. Bangkok: Thailand Research.
Ranganathan, C., & Carol, V. B. (2006). ERP Investments and the Market Value of Firms: Toward an Understanding of Influential ERP Project Variables. *Information Systems Research, 17*, 145.
Ross, J. W., & Beath, C. M. (2006). The hidden benefits of IT chargeback. *MIT Sloan management*.
Sambamurthy, V., Anandhi, B., & Varun, G. (2003). Shaping agility through digital options: Reconceptualizing the role of information technology in contemporary Firms1. *MIS Quarterly, 27*(2), 237.

Shih, E., Kraemer, K. L., & Dedrick, J. (2007). Determinants of country-level investment in information technology. [Article]. *Management Science, 53*(3), 521-528.
Shin, N. (2009). Information Technology and Diversification: How Their Relationship Affects Firm Performance. *5*, 69.
Shin, S. K., Ishman, M., & Sanders, G. L. (2007). An empirical investigation of socio-cultural factors of information sharing in China. *Information & Management, 44*(2), 165-174.
Sobol, M. G., & Klein, G. (2009). Relation of CIO background, IT infrastructure, and economic performance. *Information & Management, 46*(5), 271-278.
Tanriverdi, H. (2005). Information technology relatedness, knowledge management capability, and performance of multibusiness firms. [Article]. *Mis Quarterly, 29*(2), 311-334.
Thouin, M. F., Hoffman, J. J., & Ford, E. W. (2008). The effect of information technology investment on firm-level performance in the health care industry. [Article]. *Health Care Management Review, 33*(1), 60-68.
Vaccaro, A., Parente, R., & Veloso, F. M. (2010). Knowledge Management Tools, Inter-organizational Relationships, Innovation and Firm Performance. *Technological Forecasting and Social Change, In Press, Corrected Proof.*
Vaus, D. D. (2002). *Surveys in social research* (Vol. Fifth edition). New South Wales: Allen & Unwin.
White House Names First CIO. (2009). *Information Management Journal, 43*(3), 7.
Yang, J. (2010). The knowledge management strategy and its effect on firm performance: A contingency analysis. *International Journal of Production Economics, 125*(2), 215-223.

Abbreviations

Abbreviations	**Meaning**
IT_Inf	IT Infrastructure
IT_Prod	IT in Production
IT_IS	IT in Information Systems
IT_Inv	IT Investment
IT_Mod	IT Moderation
IT_Rea	IT Reasonableness
IT_Sel	IT Self-Immunity
CIO	Chief Information Officer
IT_ChB	IT Chargeback
KM	Knowledge Management
ROA	Return on Asset
Con	IT Convenience
Com	IT Competitive Advantage
IT_ST	Strategic IT
df	Degree of freedom
P	P-value
GFI	goodness of fit index

AGFI	adjusted goodness of fit in
RMR	root mean square residual
CFI	comparative fit index
NFI	normed fit index

The Effect of Conflict Resolution and Culture Sensitivity through the lens of Relational Exchange Theory on the Performance of International Joint Venture (IJV) in Thailand: An Empirical Study of ASIAN Foreign Direct Investment (FDI)

Wanida Wadeecharoen[1], Athiwat Kanjanavanikul [2], Sombat Teekasap[3]

[1] Author: Dr. Wanida Wadeecharoen, Lecturer Department of Management, Faculty of Business Administration, Thonburi University, Bangkok, Thailand, wadeecharoen@gmail.com

[2] Co-Author: Dr. Authiwat Kanjanavanikul, Lecturer Department of Marketing, Faculty of Business Administration, Thonburi University, BKK Thailand, buncha.k1975@hotmail.com

[3] Co-author: Assc.Prof. Dr. Sombat Teekasap, Senior Lecturer, Dean of Engineering, Faculty of Engineering, Eastern Asia University, Bangkok, Thailand, sombat.teekasap@gmail.com

**Corresponding author: Dr. Wanida Wadeecharoen Thonburi University 29 Soi Petkasem 110 Nongkangphlu, NongKame, Bangkok 10160 Tel:0-2809-0823-27 Fax:0-2809-0829 wadeecharoen@gmail.com*

Topic of submission: *Business Administration*

The Effect of Conflict Resolution and Culture Sensitivity through the lens of Relational Exchange Theory on the Performance of International Joint Venture (IJV) in Thailand: An Empirical Study of ASIAN Foreign Direct Investment (FDI)

Wanida Wadeecharoen[1], Athiwat Kanjanavanikul [2], Sombat Teekasap[3]

[1,2] Faculty of Business Administration, Thonburi University, Bangkok, Thailand
[3] Faculty of Engineering, Eastern Asia University, Bangkok, Thailand

Abstract

International Joint Venture (IJV) is often referred as a favorable mode and the best alternative of Foreign Direct Investment (FDI) used by multinational enterprises (MNEs) for entering in Thailand (Julian, 2010: 2009: 2008: 2005; Julian & O'Cass, 2004, 2002). In spite of being a popularity strategic foreign entry mode, IJV performance remains unpredictable (Ding, 2004). Apparently, IJV in Thailand has faced a high failure rate and dissolution as high as twenty-five percent (Board of Thailand Investment, 2009). Inefficiency of inter-partner relationship management among IJV partners are assumed to be the major reason for IJV collapse. This context has been investigated by Wadeecharoen & Nik Mat (2011: 2010: 2009: 2008), their finding demonstrated that cultural factors are not the vital factors for operating IJV in Thailand. Additionally, conflict resolution used by IJV in Thailand was not the integrated area method (joint problem solving and compromising). Consequently, these empirically results need to be highlighted and reinvestigated deeply in detail in order to make a clear picture, ***"What happens in IJV manufacturing setting through the relational exchange theory?"*** The fifteen representatives of IJV general managers from the ASIAN foreign partner side were the target sample of this study. The qualitative research method will be applied with the sample of this study. Ethnographic Future Research (EFR) techniques were used to design the interview structure used to elicit their perceptions and preferences among possible and probable alternative futures for IJV cooperate culture and conflict resolution used by IJV firms in Thailand.

Keywords: Conflict, Culture, IJV, ASIAN, Thailand

Introduction

The role of international joint venture (IJV) is becoming increasingly prominent as a popularity strategic entry mode throughout South-East Asia Pacific (Julian, 2010: 2009: 2008: 2005; Julian & O'Cass, 2004, 2002). In particularly, Thailand has no reason to deny the significance role of IJV contributions to the Thailand economic development. This is because IJV can access to larger volumes of capital resources, technology transfer, managerial expertise and marketing networks (Nik, Osman & T, 2004), generated employment and advanced manufacturing technology (April 8, 2010: Public Relations Division, Office of top management), which in turn enhance Thailand competitive advantage in an export market. As appearance, approximately 2,443 foreign affiliates engaged in Thailand were mainly in the form of IJV (Thailand Factory Directory, 2009). Although IJV is the popular mode used by foreign investors to enter Thailand, the failure rates can be as high as 30-70% of IJVs in some certain countries (Makino & Beamish, 2004; Yaheskel, Newburry & Zeira, 2004; Hennart, Kim & Zeng, 1998) and 25% in Thailand (BOI, 2009). Inter-partner relations can be one of the main problems causing the high failure rate of IJV (Wilson & Brennan, 2009; Robson, Leonidou & Katsikeas, 2002). For instant, problem in the inter-partner relationship (conflict with the local partners) is the major reason cause of IJV terminated (Makino, Chan, Isobe & Beamish, 2007). However, there is very limited empirical evidence to support the causes of the failure from the relational managerial perspective. Until recently, the *"relation factors"* have been investigated by Wadeecharoen & Nik Mat, (2009; 2010; 2011), their finding indicate that the role of relationship marketing orientation (RMO) has a mediating effect between market orientation (MO), conflict management with IJV performance. Obviously, conflict management has no direct relationship with IJV performance unless mediated by RMO. Surprisingly, culture sensitivity has no any significance relationship with IJV performance even mediated by RMO which is contradictory and inconsistency from past study that assumed culture sensitivity and conflict management are significantly important factors effecting to IJV performance (Ozorhon, Arditi, Dikmen, & Birgonul, 2008(a):2008(b); Lu, 2007; 2006). Base on this result of Wadeecharoen & Nik Mat, (2009; 2010; 2011) making sense for the further investigation by following these research questions *"what are the conflict resolution methods used by IJV in Thailand?", "Is IJV in Thailand has no culture clash due to some reason behind IJV operation?"*. In order to build out a clear picture of IJV operating in Thailand, this needs to be further clarifying.

Literature Review and Theoretical Framework

The definitions of IJVs have been defined from several perspectives based upon the purposes of IJV formulation. However, an agreed-upon definition of IJV performance is missing in the literature (Geringer & Hebert, 1991). Nonetheless, the view of goal accomplishment underlies most interpretations (Beamish & Delios, 1997; Anderson, 1990). Thus, defining IJV performance as the degree of accomplishment of IJV goals is the first step in capturing the meaning given to this concept by previous researchers, as supported by the following caption;

> *"International joint ventures are legally and economically separate organizational entities created by two or more parent organizations that collectively invest financial as well as other resources to pursue certain objectives"* (Schuler & Tarique, 2005)

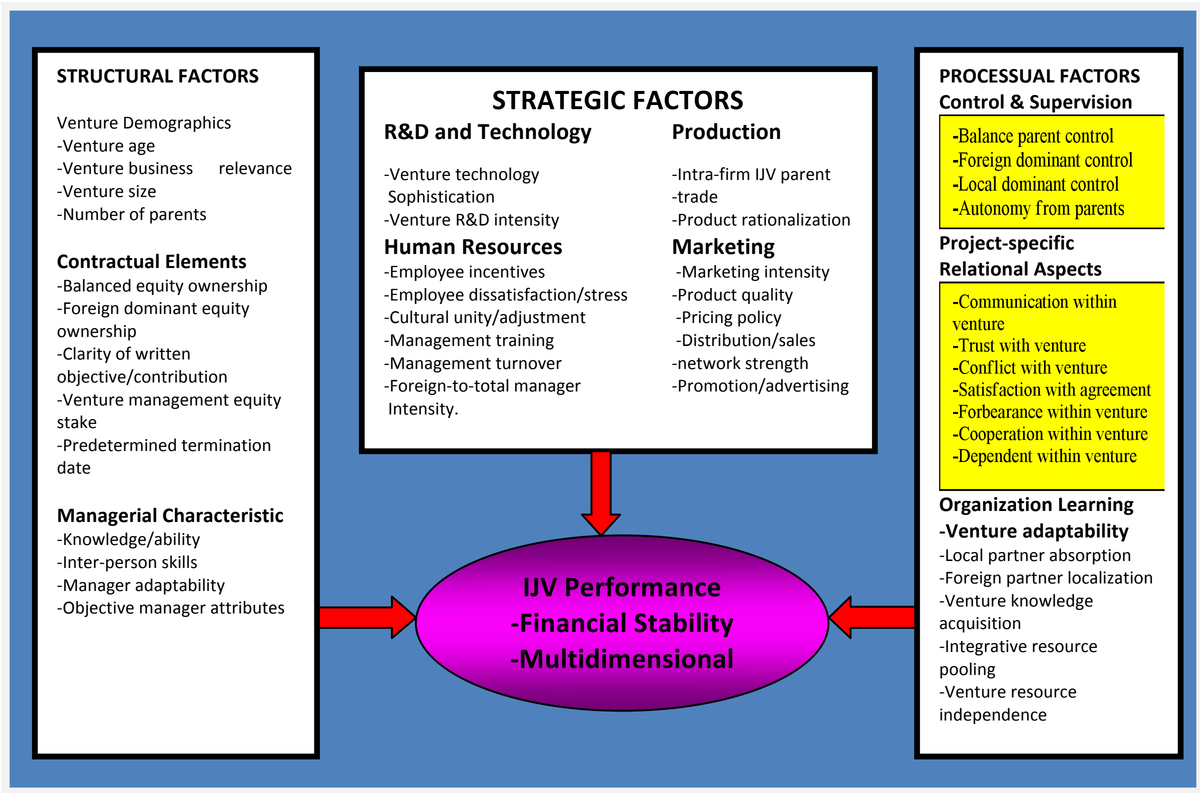
Relational Exchange Theory: (Macualay, 1963; Macneil, 1980)

The importance of relationship management in IJV partnerships cannot be denied as evident by the statement below;

> Vantage partners LLC of Cambridge (the United Stage) state that *"Partnerships aren't failing because of legal or financial issues, but because of the relationship between the companies"*
> (Krasner, 2001)

Inter-partner relations could be one of the major problem causes of high failure rate due to the poor IJV performance (Robson et al., 2002). According to Doz (1996) relational factors and the partner's behaviors are critical to the success of strategic alliances. In order to increase the chances of successful partnership formation, IJV managers are required to understand the nature of key relational success factors, i.e. trust and commitment in the IJV formation process (Samiee & Walters, 2003). However, the antecedent of IJV performance from behavioral perspective or relational approach is limited and fragmented (Robson et al., 2002; Thuy & Quang, 2005). The holistic frameworks of IJV performance antecedents found in IJV literature is represented by Robson et al., (2002) in the figure below;

Figure 1: Holistic Model of IJV Performance (adopted from Robson et al, 2002)



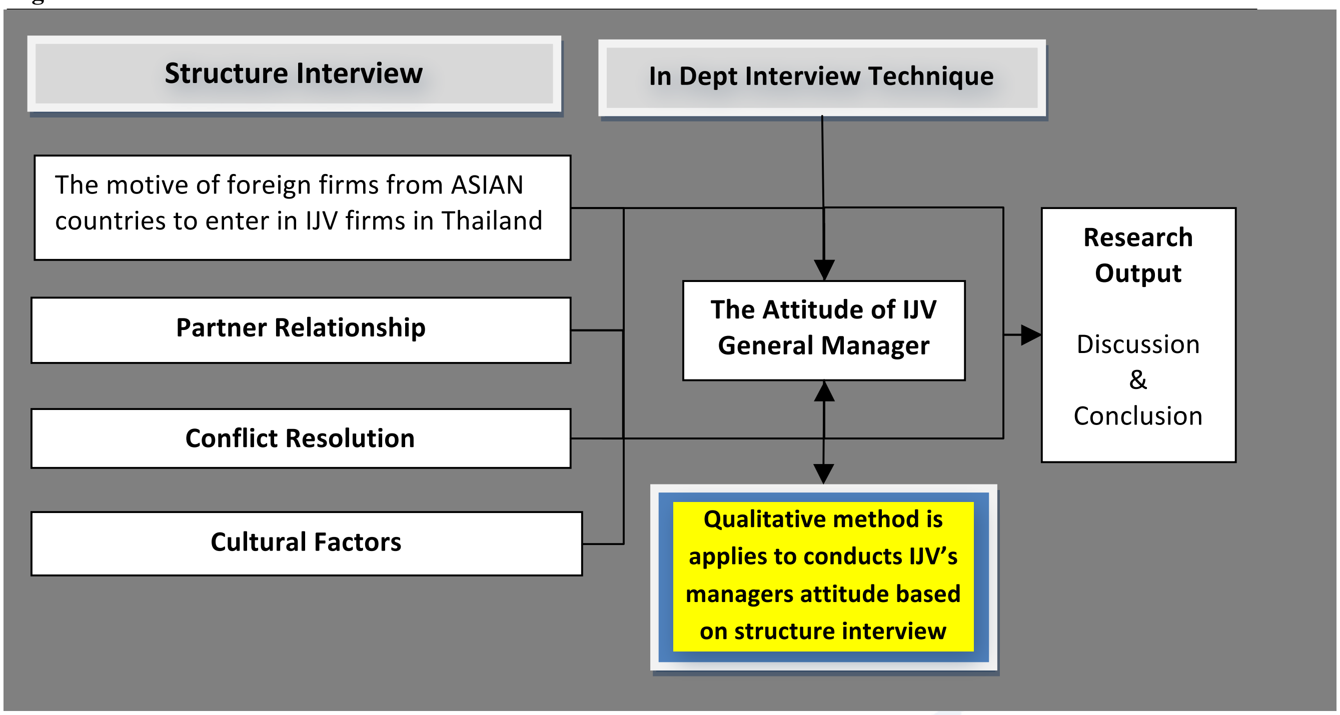
The relational issues in IJV are related to project-specific relational aspects such as trust with venture, conflict with venture, satisfaction with agreement, and cooperation within venture, cultural between IJV partners (Wilson & Brennan, 2009; Ozorhon, Arditi, Dikmen, & Birgonul, 2008(a); 2008(b); Lu, 2007:2006; Thuy & Quang, 2005; Dermirbag & Weir, 2006; Robson et al., 2002; Demirbag & Mirza, 2000; Steensma & Lyles, 2000; Lin & Germain, 1998). These issues could be categorized under processual factors which may affect IJV performance (Robson et al., 2002). One of the predominant theories that could explain how these issues affect the overall performance of IJV is Relational Exchange Theory by Macneil (1987: 1980) and Macualay (1963).

The phenomenon of relational exchange and long-term relationships in IJV has received increasing interest in marketing both research and practice. International Joint Venture (IJV) relationships are considered to be one of the most important resources for developing competitive advantage (Dyer, 1998), and he has argued that performance can be explained by companies' ability to develop relationship. Thus, relational exchange theory considers the success of IJV performance as a long-term relationship between local and foreign companies. This relationship can be developed by both partners' capabilities to commit necessary resources, joint decision, and equality in exchange relationship. Relationships are considered to be one of the most important of inter-firm organization factors, particularly in International Joint Venture (IJV) firms (Macneil, 1980).

In order to overcome all forms of relational exchange and focus on the process of partner relationship, as stressed by Dwyer, Schurr & Oh (1987), this study proposes the following objective: (1) to investigate the reasons for IJV formation between Japanese and Thai firms; (2) to demonstrate the important of "*partner relationship*" for the successful IJV in Thailand; (3) to investigate of conflict resolution strategies used by Thailand IJVs in order to resolve inter-partners conflict; (4) to investigate and demonstrate of culture sensitivity in positive aspect through looking inside IJVs in Thailand manufacturing sectors.

Since, relational exchange refers to all relationship activities directed toward establishing, developing and maintaining successful relational exchanges (Morgan & Hunt, 1994) *IJV is considered as a long-term relationship between parent and IJVs' own organization*. This relationship is considered to be one of the most important resources for *developing firm's competitive advantage* (Dyer, 1998). Thus, the theoretical framework of this study is formulated based on relational exchange and past research supported as representing in the figure below;

Figure: 2 Theoretical Framework



Research Question & Propositions Development

Why foreign firms are engaged in IJV?

Generally, International Joint Venture (IJV) is an equity sharing agreement in which a foreign partner (oversea country) and local partner (host country) pool their resources, share risks and operational control to operate an independent business unit on a continuous basis for profitability or accomplish some strategic objective (Geringer & Herbert, 1991). Similarly, IJVs are preferred by foreign firms in order to access new markets, knowledge, capabilities and share of resources (Beamish & Lupton, 2009). Certainly, both partners decide to engage in IJV in order to attain their objective or meeting the basic expectation of its parents.

According to Makino, Chan, Isobe & Beamish, (2007) classified the internal purpose of IJV formation into four keys purpose and divided into major objective: (1) resources/labor seeking (to procures of raw material and natural resources and to access low cost inputs) (2) market seeking (to follow customers, market expansion) (3) capital seeking (to transfer of dividends and earn loyalty, heading against exchange rate risk), and strategic asset seeking (to research and development)

Obviously, the main purpose of IJV formation is to minimize the transaction cost and decrease the cost of production (economics of scale). Hennart, (1988) argued that IJV is the best alternative for foreign firms to enter into a contiguous stage of production or distribution of a new market. For illustration, multiple steel producers can jointly establish a large-scale iron-ore exploration IJV in order to reach operational efficiency. Hence, IJV exists when the partner firms invest in different activities of the venture. For instance, one partner may constitute investment in production while the other emphasizes on marketing of products. Hennart names these types of IJVs scale and link (Hennart , 1988). Thus, IJV enable firms to access each others' complementary resources and capabilities in order to achieve economic of scale, to develop new products faster and cheaper with reliably than could be done by either firm acting alone or through acquisition, which in turn enhanced a firm competitive advantage (Beamish & Lupton, 2009). Moreover, since firms decided to engaged in IJV then the partners are jointly structuring organization and intra-cooperating into a new business area with finally develop a new capabilities (Inkpen & Tsang, (2005). The knowledge acquisitions are transferred among partners by gaining access to the skill (learning by doing) and competencies of partners brought to IJV (Kogut, 1988). Thus, in this perspective IJV is formulated under two situations; first, both partners desire to acquire the other organization know-how and second, one of IJV partner desires to maintain a firm capability through benefitting from another IJV partner's current knowledge and cost advantage.

From the above discussion, we thoroughly believe that IJV has formed for the various purposes such as to decrees the cost of production, to enhance the competitive advantage, to gain of organization knowledge and to share of resources dependence. Thus, the following proposition is worth researching.

Proposition 1a: Foreign firm has formed in IJV in order to decrease the cost of production.
Proposition 1b: Foreign firm has formed in IJV in order to enhance the competitive advantage.
Proposition 1c: Foreign firm has formed in IJV in order to gain of organization knowledge.
Proposition 1d: Foreign firm has formed in IJV in order to share of resources dependence.

Is partner relationship contributed to the successful of IJV in Thailand?

The importance of relationship management in IJV partnerships cannot be denied. Krasner (2001) stated that "*Partnerships aren't failing because of legal or financial issues, but because of the relationship between the companies"* (source: Jeffrey Krasner: The Boston Globe Newspaper, Thursday, May, 2001). Clearly, Inter-partner relations could be one of the major problem causes of high failure rate due to the poor IJV performance (Robson et al. 2002). According to Doz, (1996) relational factors and the partner's behaviors are critical to the success of strategic alliances. In order to increase the chances of successful partnership formation, IJV managers are required to understand the nature of key relational success factors, i.e. trust and commitment in the IJV formation process (Samiee & Walters, 2003). However, the antecedent of IJV performance from behavioral perspective or relational approach is limited and fragmented (Robson et al., 2002; Thuy & Quang, 2005).

From the above discussion we thoroughly believe that the significant relationship between IJV partners seem to be the most important determinant for the successful of IJV in general and Thailand in particular. Thus, the following proposition is worth researching.

Proposition 2: ***"Partner relationship"*** is the most important factor for successes IJV in Thailand.

Are IJVs in Thailand using ***"legalistic or forcing strategic method"*** *instead of "****joint problem solving"*** *and* ***"compromising"*** *to settle of conflict issues between IJV parties?*

Conflict can be defined as the deep underlying differences between parties whereas disputes are the specific differences that emerge on particular occasion (Ross, 1993). A conflict in IJV firms arise when there are serious disagreements or incompatibility goals between partners which lead to miss communication, lack of trust and reliable between partners and the result failed to responsive the need and aspiration of each others (Killing, 1983).

Base on the past literature, conflict in the IJV setting has been used in diversely definition terms both in negative such as conflict (Demirbag & Mirza, 2000; Ding, 1997; Hebert, 1996; Johnson, Cullen, Sakano & Takenouchi, 1996; Cullen, John, Johnson, Jean, Sakino & Tomoaki, 1995), parent conflict (Steensma & Lyles, 2000) and positive aspects such as conflict resolution (Lu, 2007; 2006; Lin & Germain, 1998), conflict management (Thuy & Quang, 2005). This bipolar definition term of conflict makes it difficult for the researcher to get a consistent finding.

However, the relationships between conflict within IJV and its performance which have been equivoque and inconsistency finding have been found in the literature. A result of Wadeecharoen & Nik Mat (2009: 2010) intentional study on *"conflict factor"* in a positive aspect which adapted concept and measurement from (Thuy & Quang, 2005), confirms that conflict management has no significant relationship with IJV performance unless mediated by relationship marketing orientation (RMO). The concept of RMO is made up of four dimensions namely, bonding, empathy, reciprocity and trust (Callaghan, McPhail, & Yau, 1995; Yau, McFetridge, Chow, Lee, Sin, & Tse, 2000), the RMO concept is the first represented and empirically tested in IJV setting by (Wadeecharoen & Nik Mat, 2008; 2009; 2010; 2011). Their finding indicted that RMO could play a significant role between conflict factor and IJV performance. This finding make a new sense for reinvestigated *"conflict resolution areas"* to make a clear picture whether IJV in Thailand using difference conflict resolution method such as legalistic or forcing strategic method as suggested by (Lu, 2006: 2007; Lin & Wang, 2002). Thus, the following proposition is worth researching.

Proposition 3a: ***"Conflict Resolution"*** is the important factor effecting on the performance of IJV firms in Thailand.
Proposition 3b: IJV in Thailand is using ***"legalistic strategic method"*** to resolve of conflict issues between IJV parties.
Proposition 3c: IJV in Thailand is using ***"forcing strategic method"*** to resolve of conflict issues between IJV parties.

Do IJVs in Thailand have no ***"culture clash"*** *due to partners' adaptability or learning process between both side (Foreign and Thai local)?*

Throughout the literature, inconstant results have been found regarding the relationships between cultural factors and performance of IJV. For instance, some studies have found positive relationship with significant results (Ozorhon et al, 2008; Lu, 2006; Li, Karakowshy, & Lam, 2002; Li, Lam & Qian, 2001; Luo et al, 2001; Zeira et al, 1997) while others found positive relationship but no significance supported (Thuy & Quang, 2005). Several studies have found negative relationship with significant results (Ozorhon et al, 2008a; Li et al, 2002; Fay & Beamish, 2001; Lasserre, 1999) and negative relationship with no significant results (Pothokuchi et al, 2002; Fay & Beamish, 2001). The present study intends to investigate culture in the positive aspect; namely, 'culture sensitivity' defined by (Thuy & Quang, 2005).

The culture sensitivity in an IJV organization reflects its partners' mutual understanding of their cultural differences, which often occurs in organizations where members come from multi-cultural backgrounds (Thuy & Quang, 2005). Thus, from the definition above, culture sensitivity is the most suitable term to investigate IJV behaviors at the organizational level. However, this term is still lacking in the IJV setting. Only Thuy and Quang (2005) used this term to indentify positive effect of culture on IJV performance but their results exhibit no significant relationship between culture sensitivity and IJV performance in Vietnam. Recently, the empirically research finding presented by Wadeecharoen & Nik Mat, (2011) has been pointed out that culture sensitivity has no significant relationship with IJV performance in Thailand. This finding is similarly supported by Thuy and Quang (2005). As a result of both (Wadeecharoen & Nik Mat, 2011; Thuy & Quang, 2005) make unconcluded of culture in IJV whether IJV in South-East-asia (Thailand & Vietnam) are not sensitive with foreign partner or due to some reasons. Thus, the following proposition is worth researching.

Proposition 4a: ***"Culture Sensitivity"*** is the important factor effecting on the performance of IJV firms in Thailand.

Proposition 4b: IJV in Thailand have no ***"culture clash"*** due to long-term partners learning and cooperating between both side (Foreign and Thai local).

Scope of the Study

Since IJV has defined as a hybrids formed from two distinctly separate organizations (Geringer & Herbert, 1999). These organizations may have different objectives for the IJV entity and may evaluate the performance of the IJV differently (Julian, 2005). Instance, in the view of domestic partner may rate the IJV as performing ***successfully*** because it is achieving its stated objectives of profitability and return on investment whilst the foreign partner may rate the IJV's performance as being ***unsatisfactory*** because it is refusing to use the raw materials of the foreign partner. Thus, in order to achieve the overall performance of IJV accurately, IJV should be considered as a stand-alone entity (Julian, 1998: Anderson, 1990). This is similarity supported by research findings of Wadeecharoen & Nik Mat, (2009, 2010, 2011) who evaluated IJV overall performance as a stand-alone entity.

Research Methodology

In order to carry out a holistic picture of IJV operational management function. The *qualitative research approach* is the most appropriate to applied in this study. The target population of the study focuses on IJVs who formed between Thai-Japanese partners. In general, Japanese manufacturing was a major foreign investment country in ASEAN (Tiwari, Syamwil & Doi, 2003) and the largest foreign investors in Thailand (Poon & Sajarattanochote, 2010). Complementary, based on pervious result of Wadeecharoen & Nik Mat, (2010) the majority of their respondent came from ASIAN countries (Japan, Taiwan, Singapore, Malaysia, Korea, and India) while over half of their IJV respondents (53 %) came from Japan. Thus, 15 Thai-Japanese IJVs are identified as the samplings unite of the study which comes from a variety of industries list by Thailand Company Directory, 2010. IJV general managers are identified as gatekeeper information of IJV operational system (Julian, 2008; Julian & O'Cass, 2005: 2004: 2002; Li & Calantone, 1998). Previous research provides support for relying on the IJV general manager for reliable data (Geringer & Hebert, 1991; Child, Yan & Lu 1997). Consequently, in-depth interviews structures are designed as the most appropriate method use to capture the real picture of IJVs management. This is because it encourages IJV manager to express their views at length and reveal more about beliefs, attitudes and behavior. The reason for choosing this method is inadequate theory and equivoques finding from quantitative survey techniques (Frederikson, et al, (1996). However, qualitative techniques are wide ranging problematic due to unstructured interview which in turn reflects to analysis and conclusion of the study. To prevent this problem, Ethnographic Future Research (EFR) involves semi-structure interview adapted from past literature (exhibit in appendix 1) and cumulative summarization techniques are design to elicit their perceptions and preferences among possible and probable alternative futures for IJV cooperate culture and conflict resolution used by IJV firms in Thailand (Robert B Textor, 2000).

Discussion & Conclusion

The issues of relational exchange and inter-partner relationship has been credible to be an important sources for developing long-term competitive advantage which in turn contribute to success of IJV performance (Ainuddin, Beamish, Hulland & Rouse, 2007; Thuy & Quang, 2005; Macneil, 1980;). Surprisingly, the finding of Wadeecharon & Nik Mat, (2009, 2010, 2011) indicated that culture sensitivity and conflict management has no significance effect on IJV performance which they believed to be an important part for inter-organization relationship. However, their finding is similarly support by Thuy & Quang, (2005) whose study IJV in Vietnam manufacturing sector. This is certainly true for local firm from developing countries like Thailand and Vietnam, when firms entering into IJV they will be encouraged by learning and knowledge acquisition. For instance, IJV from host developing economic countries are typically lack of technology capabilities and managerial know-how whereas foreign partner may lack local market know-how and connection with local government authorities (Thuy & Quang, (2005). An acquisition of such knowledge is often tricky to obtain and frustrating process in organization daily routines. Due to this stage, the level of culture sensitivity is not important for IJV partners to be considered in their relationship. This is because IJV partners are encouraged by knowledge-sharing routines and building relational-specific assets (Helena et al., 2001). Thus, at this stage IJV partners require only some adjustment or adaptation for smoothing IJV inter-partner cooperation (Lin, 2004). Thereafter, IJV needs to generate a favorable exchange structure in the extent of knowledge acquisition both tactic and explicit knowledge among IJV partners (Park, 2011).
In additionally, culture sensitivity has no significant effect to IJV relationship may cause by foreign partners in the sample of Wadeecharoen & Nik Mat, (2009) has more control over the IJV compare to Thai partner side due to higher equity ownership in the rang of 51-75 percent and 75 percent plus of IJV equity are from foreign partner (208 out of 341 were foreign dominant). Thus, this may sufficient enough to explain the culture effect to IJV relationship involved ASIAN partners (Anh, Baughn, Hang & Neupert, 2006).

Moreover, culture sensitivity has no significant effect to IJV relationship. It can see from the result of Wadeecharoen & Nik Mat's research (2009) showed that foreign partners have more control over the IJV than Thai partners in the range of 51 – 75 percent or in the other word, there is 75 percent plus of IJV equity, 208 out of 341, has come from foreign partners. Therefore, this crystal clear that the culture sensitivity is not influent to the performance of IJV equity in Thailand.

Since foreign firms are transformed into IJV then the potential conflict areas are identified. For instance, when conflict occurs between partners, IJV general managers will be handing or managing conflict issues in different styles in order to achieve an effective solution and acceptation among both parties (Thomas & Kilmann, 1974). Astonishingly, conflict management has no significant effect on IJV performance (Wadeecharoen & Nik Mat, 2009; 2010), which is unexpected from their assumption.

Based on Wadeecharoen & Nik Mat, (2011) argues that IJV's conflict management styles in Thailand manufacturing sector are subscribing under integrated methods i.e. problem solving. This finding may interrelated to IJV dominant control, since foreign partners are own the majority ownership in Thailand

(Wadeecharoen & Nik Mat, 2009) then they have right to act on the conflict issues without share problem solving with local partner side (Killing, 1980). These arguments may conclude that problem solving strategy is not suitable for settle of conflict issues in Thailand. Thus, it brings out the new idea that IJV in Thailand is using another method to solve their conflict i.e. forcing and legalistic strategies (Lu, 2007: 2006)

According from these discussions, it is an inspiration for us to reinvestigating and demonstrating the phenomenon of cultural and conflict factors. To capture and has a clear picture of relational phenomenon based on strong relational exchange concept (Wilson & Brennan, 2009; Robson, Skarmeas & Spyropoulou, 2006; Robson et al., 2002; Macneil, 1987), qualitative research is chosen to create a holistic picture of possible impact of relational factors effecting on IJV performance in Thailand manufacturing sector.

Acknowledgement

This study was supported by research grants from Thonburi University, BKK, Thailand

Appendix 1: IJV General Manager Structure Interview Outline

Structure Interview
➢ *Why foreign firms are engaged in IJV?* ➢ What is the main reason for you to form an IJV in Thailand (Beamish & Lupton, 2009; Makino et al., 2007) 1. To decrease the cost of production 2. To enhance the competitive advantage 3. To gain of organization knowledge (knowledge acquisition) 4. To share of resources dependent
➢ *Is partner relationship contributes to the successful of IJV in Thailand?* ➢ What is the most important relational factors to be excite in your IJV to make both partners work out for long-term relationship orientation (Robson, Leonidas & Katsikeas, 2002). 1. communication within IJV 2. Trust within IJV 3. Commitment within IJV 4. Cooperation within IJV 5. Satisfaction within IJV
➢ *Is IJV in Thailand are using "legalistic or forcing strategic method" instead of "joint problem solving" and "compromising" to settle of conflict issues between IJV parties?* ➢ What are the common strategic used by IJV to resolve conflict issues (Lu, 2007:2006; Lin & Germain, 1998). 1. Conflict resolution is an important factor toward IJV performance in Thailand. 2. IJV is using *'legalistic strategic method'* (win/lost situation) for resolve conflict between partners. 3. IJV is using '*"forcing strategic method"* (obligation, stipulation) to resolve of conflict between partners.
➢ *Is IJV in Thailand have no "culture clash" do to culture adaptability or learning process between both side (Japanese and Thai)?* ➢ Is culture is the important factors for you to work with your partner due to different way of business action (Thuy & Quang, 2005; Lin, 2004; Johnson et al, 1996). 1. You know that business practices (decision-making criteria, management techniques) are done very differently between Japanese and Thai partners. 2. In this relationship, you always try to adapt to your partner in the way of doing thing. 3. In your firm, you try to familiarize yourself with your partner and its business environment. 3. IJV in Thailand have no *'culture clash'* due to long-term partners learning and cooperating between both side (Japanese and Thai)

Reference

Ainuddin, R. A., Beamish, P.W., Hulland, J.S., & Rouse, M. J. (2007). Resource attributes and firm performance in international joint ventures. *Journal of World Business*, *42*, 47-60.

Anderson, J. A. N. (1990). A Model of distributer firm and manufacture firm working partnerships. *Journal of Marketing, 54 (January)*, 42-58

Anh, P.T., Baughn, C.C., Hang, N.T.M., & Neupert, K.E. (2006). Knowledge acquisition from foreign partners in international joint venture: An empirical study in Vietnam. *International Business Review, 15*, 463-487

Beamish, P. W., & Delios, A. (1997). *Improving Joint Venture Performance Through Congruent Measures of Success:* In P.W. Beamish,& J.P.Killing (Eds.), Cooperating Strategies:European Perspectives. San Francisco: The New Lexington Press.

Beamish, P.W. & Lupton, N.C. (2009). Managing Joint Venture, *Academic of Management,* 77-94

BOI (Thailand Broad of Investment) (2010). Profile of BOI-Promoted Companies and Sectors, Bangkok.

Callaghan, M. McPhail, J. & Yaue, O.H.M. (1995). *Dimensions of a relationship marketing orientation: an empirical exposition*. Proceedings of the Seventh Biannual Word Mareting Congress. Vol. VII-II, Melbourne, July, p.10-65.

Child, J., Yan., & Lu, Y. (1997). *Ownership and Control in Sino-Foreign Joint Ventures*: San Francisco: The New Lexington Press.

Cullen, John, B., Johnson, Jean, L., Sakino, & Tomoaki. (1995). Japanese and Local Partner Commitment to IJVs: Psychological Consequences of Outcome and Investments in the IJV Relationship. *Journal of International Business Studies,26*(1).

Demirbag & Mirza, (2000). Factors affecting International Joint Venture success: an empirical analysis of foreign-local partner relationships and performance in Joint Venture in Turkey. *International Business Review,* 9(1), 35.

Dermirbag & Weir, (2006). *Enterprise Trust and Commitment in International Joint Ventures in Turkey: An approach through knowledge management*. CERAM Sopers, Working Papers (1).

Ding, D.Z. (1997). Control, Conflict, and Performance: A Study of U.S.-Chinese Joint Ventures. *Journal of International Marketing, 5*(3), 31-45

Ding, J. (2004). The Role of Enterprise System Implementation in International Joint Venture Development: Exploring the Relationships. *Journal of Information Systems in Developing Countries, 19*(3),1-11.

Doz, Y. (1996). *The Evolution of Cooperation in Strategic Partnerships: Success or Surrender?-The Challenge of Competitive Collaboration*. Working Paper, University of Michigan.

Dwyer, F.R., Schurr, P.H., & Oh, S. (1987). Developing Buyer-Seller Relationships. *Journal of Marketing, 51*,11-27.

Dyer, H.J., & Singh, H. (1998). The Relational View: Cooperative Strategy and Sources of Inter-organizational Competitive Advantage. *Academy of management Review*, *23*(4), 660-679.

Fay. C.F., & Beamish, P.W. (2000). Joint venture conflict: the case of Russian international joint ventures. *International Business Review*, 9, 139–162

Geringer, J. M. & Hebert, L. (1991). Measuring Performance of International Joint Ventures, *Journal of International Business Studies*, 2nd quarter, 249-264.

Geringer, J.M., & Hebert, L. (1991). Measuring Performance of International Joint Ventures. *Journal of International Studies*. *22*(2). 249.

Hebert, L. (1996). Does Control Matter? A Path Model of the Control-Performance Relationship in International Joint Venture, *Management International,* Fall, 1(1).

Hennart, F., Kim D.J. & Zeng, M. (1998). The Impact of Joint Venture Status on the Longevity of Japanese Stakes in U.S. Manufacturing Affiliates, Organization Science, 9(3), May-June ,382-395.

Hennart, J.-F., Kim, D.-J. & Zeng, M. (1998). Is cross culture conflict driving international joint venture instability? A comparative study of Japanese-Japanese and Japanese-American IJVs in the United States, *Strategic Management Journal 20*(1), 15-29.

Inkpen, A., & Tsang, E.W.K. (2005). Social Capital, Network, and Knowledge Transfer, *Academy of Management Review, 30*(1), 146-165.

Johnson, J.L., Cullen, J.B., Sakano., & Takenouchi, (1996). Setting the stage of trust and strategic Integration in Japanese-U.S. Cooperative Allliances, *Journal of International Business Studies, 27*(6), 981-1004.

Julian, C. C. (2010). The market orientation-marketing performance relationship – the empirical link in international joint ventures. *International Journal of Trade and Global Markets*, *3*(4), 414-431.

Julian, C. C. (2009). International joint venture marketing performance and manifest conflict in a developing country context, *International Journal of Trade and Global Markets*, vol. 2, no. 1, pp. 41-58.

Julian, C.C. (2008). Joint Venture Conflict: The Case of Thai International Joint Ventures", *Journal of Asia-Pacific Business, 9*(1).

Julian, C., & O'Cass, A. (2002). The effect of firm and marketplace characteristics on International Joint Venture (IJV) marketing performance. *Asia Pacific Journal of Marketing and Logistics, 14* (1).

Julian, C. C. (2005). *International Joint Venture performance in South East Asia*. MA: Edward Elgar.

Julian, C., & O'Cass, A. (2004). The impact of firm and environment characteristics on International Joint Venture (IJV) marketing performance in Thailand. *Thunderbird International Business Review, 46* (4), 359-380.

Killing, P.J. (1983). *Strategies for Joint Venture Success*, New York, NY: Praeger.

Kogut, B. (1988). Joint Ventures: Theoretical and Empirical Perspectives. *Strategic Management Journal*, *9*, 319-332.

Krasner, J. (2001). *Alliances Usually Fail, Study Says*. The Boston Globe, Thursday, May 3

Lassere, P., (1999). Joint Venture satisfaction in Asia Pacific. *Asia Pacific Journal of Management,* 16,1-28.

Li, J., Karakowshy, L., & Lam, K. (2002). East meets east and east meets west, the case of overseas investment in P.R. China. *Journal of Management Studies*, *39*(6), 378-393.

Li, J., Lam, K., & Qian, G. (2001). Does Culture Affect Behavior and Performance of Firms? The Case of Joint Ventures in China. *Journal of International Business Studies,32*(1),115-131.

Lin, X. & Germain, R. (1998). Sustaining Satisfactory Joint Venture Relationships: The Role of Conflict Resolution Strategy. *Journal of International Business Studies*, *29*(1), 179-196.

Lin, X., & Wang, C., (2002). Relational contexts of conflict resolution strategies in international joint ventures: An Intra-Asia Case. *Journal of Relationship Marketing, 1,* 23-38

Lu, K.T. (2006).The relationship between cultural distance and performance in International Joint Ventures: Acritique and ideas for further research. *International Journal of Management, 23*(2)

Lu, L.T. (2007). The effect of cultural similarity on International Joint Ventures: An Empirical Study. *International Journal of Management,* 24(2)

Luo, Y., Shenkar, O., & Nyaw, M-K. (2001). A dual parent perspective on control and performance in international joint venture: Lessons from a Developing Economic. *Journal of International Business Studies, 32*(1), 41.

Makino*, S.,* Beamish P.W., & *Zhao*, N.B. (2004). The characteristics and *performance of Japanese FDI in less developed and developed countries*. *Journal of World Business*, *2004*, vol. *39*(*4*), *377-392*.

Makino, S., Chan, C.M., Isobe, T., & Beamish, P.W. (2007). Intention and Unintentional Termination of International Joint Ventures. *Strategic Management Journal, 28,* 1113-1132.

Morgan, R.M. & Hunt, S.D. (1994). The Commitment-Trust Theory of Relationship Marketing. *Journal of Marketing, 58*(3), 20.

Nik, H., Osman, M., & T. R. (2004). *Acquisition of Marketing Knowledge in Thai International Joint Venture Firms*. The proceedings of the Academy of World Business, Marketing and Management Development Conference. The Challenge of Inter-Disciplinary Perspectives and Globalization in the 21st Century, Brisbane, Australia.

Ozorhon, B., Arditi, D., Dikmen I., & Birgonul, M.T. (2008:a). Implications of Culture in the Performance of International Construction Joint Ventures. *Journal of Construction Engineering and Management,134*(5)

Ozorhon, B., Arditi, D., Dikmen I., & Birgonul, M.T. (2008:b). Implications of Culture in the Performance of International Construction Joint Ventures. *Journal of Construction Engineering and Management,134*(5)

Park, B. (2011). Knowledge transfer capacity of multinational enterprises and technology acquisition in international joint ventures, *International Business Review, 20,* 75–87.

Poon, J.P.H., & Sajarattanochote, S.S. (2010). Asian Transnational Enterprises and Technology Transfer in Thailand. *European Planning Studies, 18*(5), May

Pothukuchi, V. K., Damanpour, F., Choi, J. Chen, J. & Park, S. H. (2002). National and Organizational Culture Differences and International Joint Venture Performance, *Journal of International Business Studies, 33* (2), 243-265.

Relations Division, Office of Top Management: EXIM BANK: (2010, April 8) Small and Medium Enterprise Development Bank of Thailand. Retrieved November 20, 2010, from http://www.newswit.com

Robson M.J., Skarmeas & Spyropoulou (2006). Behavioral attributes and performance in international strategic alliance. *International Marketing Review*, 23(6),585-609.

Robson, M.J., Leonidou, L.C., & Katsikeas, C.S. (2002). Factors Influencing International Joint Venture Performance: Theoritical Perspectives, Assessment and Future Directions. *Management International Review*, *42*(4), 385.

Samiee, S., & Walters, P.G.P. (2003). Relationship Marketing in an International Context: A Literature Review. *International Business Review,*12, 193-214.

Schuler, R., & Tarique, I.(2005). *International Joint Venture System Complexity and Human Resources Management.* In I. Bjorkman and Gunter Stahl (eds.). Handbook of Research in IHRM. London: Edward Elgar Publishing.

Seteensma, H.K. & Lyles, M.A. (2000) Explaining IJV survival in a transitional economy through social exchange and Knowledge- Based Perspective*. Strategic Management Journal ,21*(8).831

Thuy, L. X. & Quang, T. (2005). Relational Capital and Performance of International Joint Ventures in Vietnam. *Asia pacific Business Review,11*(3), 389-410.

Tiwari, P., Syamwil, B.I., Doi, M. (2003). *Spatial pattern of Japanese manufacturing industry in four ASEAN countries*. Paper in Reginal Science, RSAI: 2002, Papers Reg. Sci.82, 403-415.

Wadeecharoen, W., & Nik, Mat, N. K. (2008). The Significance of Relationship Marketing Orientation on International Joint Venture (IJV) Performance in Thailand. *The Journal of American Academy of Business, Cambridge, June 11-14.*

Wadeecharoen, W., & Nik, Mat, N. K. (2009). *The Mediating Effects of Relationship Marketing Orientation (RMO) on the Antecedents of International Joint Venture (IJV) Performance in Thailand.* Proceeding of Australian & New Zealand Marketing Conference (ANZMAC): Sustainable Management & Marketing Conference, 30 Nov–2 Dec 2009.

Wadeecharoen, W., & Nik, Mat, N. K. (2010). The Applicable of Relational Marketing Orientation (RMO) to Explain IJV Performance in Thailand. *Proceeding of International Conference on*

Business and Economics Research (ICBER 2010), Malaysia Conference, *Sponsored and publication by Thomson ISI,* 26-28 Nov 2010.

Wadeecharoen, W., & Nik, Mat, N. K. (2010). *The Direct and Indirect Determinants of SME Performence in IJV Sector.* The SMEs in a Global Economy Conferences, Sponsored by Faculty of Business Management, (UiTM), Malaysia, Japan (University of Senshu) and China (Beijing Information, Science and Technology University), 15-17 Oct 2010.

Wadeecharoen, W., & Nik, Mat, N. K. (2011). *The Significance Role of Relational Factors and the Intervening Effect of Relationship Marketing Orientation (RMO) toward inter-partner relationship: Case Study of International Joint Venture (IJV) Performance in Thailand.* Proceeding of National Conference on Research through Sustainable Development, Benjamit National Conference, 31 May, 2011 Thonburi University, BKK Thailand.

Wilson J., Brennan R. (2009) Relational factors in UK-Chinese international joint venture *European Business Review, 21*(2),159-171.

Yau, O., McFetridge, P., Chow, R., Lee, J., *Sin*, L., *Tse*, A., (*2000*). Is Relationship Marketing for Everyone, European Journal of Marketing, 34, (9/10)

Yeheskel, O., Newburry, W. & Zeira Y. (2004). Significant differences in the pre- and post-incorporation stages of equity international joint ventures and international acquisitions and their impacts on effectiveness, *International Business Review 13*, 613-636.

Zeira, Y. & Harari, E. (1977). Structural sources of personal problems in multinational corporations: Third country nationals, *Omega, 5*(2), 161-172.

Firm ratings momentum and market crisis

Nicholas Rueilin Lee
Department of Finance, Chaoyang University of Technology, Taiwan
E-Mail: rllee@cyut.edu.tw
TEL: +886-4-23323000-4490

This version: 2011/8/1

Abstract

This paper considers a link between momentum profitability and firm ratings due to the U-pattern of credit risk across naïve momentum portfolios in earlier studies. We divide into three ratings grade groups: high, middle, and low grade groups, in practice and consider the U.S. and Taiwan stocks markets during Jan. 1998- Oct. 2008. Firm ratings based momentum strategies can even earn positive profits, larger than naïve momentum strategies. Specifically, comparisons of firm ratings momentum in the U.S. and Taiwan stock markets show stronger momentum effect with low grade in the U.S. and high grade in Taiwan, suggesting that investors used to trade stocks with higher credit risk in the U.S. and with lower credit risk in Taiwan. Firm ratings can be used to strengthen naive momentum effects and may independently explain the momentum effects not captured by factors that proxy for information asymmetries. Finally, an examination of the 2007 subprime crisis on the firm ratings momentum documents that firm ratings momentum indeed helps increase the payoff during the crisis, especially for middle grade group in the U.S. market.

Key words: naïve momentum, firm ratings, information asymmetries, market crisis.
JEL classification: C12, C51, G10, E44

1. INTRODUCTION

FIRM RATINGS are quite prevalent in financial markets. The rating agencies adhere to a policy of providing a rating for most firms. Firm ratings have a range of descriptions, supplying investors with a tool for examining whether ratings (and rating changes) have a real informational content on firms. Specifically, firm ratings express risk in relative rank order, which is to say they are ordinal measures of credit risk and are not predictive of a specific frequency of default or loss. Therefore, firm ratings play an economically meaningful role, confirming their increasingly important role in practice (Boot et al., 2006).[1]

In this study, we investigate the usefulness of firm ratings in predicting cross-sectional returns for various price momentum portfolios over intermediate horizons. Although an extensive body of recent finance literature documents price momentum, mixed results are found. Studies that characterize price momentum as an underreaction include Jegadeesh and Titman (1993), Chan et al. (1996), Barberis et al. (1998), and Hong and Stein (1999). Conversely, studies that characterize price momentum to be the result of overreaction include DeLong et al. (1990) and Daniel et al. (1998).

The simple momentum investing strategy of buying prior winners and selling short prior losers appears significantly profitable both statistically and economically. The popularity of this approach has grown to the extent that momentum investing constitutes a distinct, well-recognized style of investment in the United States and other equity markets. As shown in studies by Rouwenhorst (1998, 1999), Hameed and Kusnadi (2002), Hon and Tonks (2003), Griffin et al. (2003), Iihara et al. (2004), Wang and Chin (2004), Lin (2004), Li et al. (2006), Naughton et al. (2008), and

---

[1] Credit ratings derive their value primarily from two institutional features. The first is the monitoring role of credit rating agencies, which is most apparent in their credit watch procedures. The second is the role credit ratings play in the investment decisions of institutional investors.

Siganos (2010), momentum is economically large in many European markets, small but positive in many emerging markets, and, furthermore, present in some Asian markets with exception of Japan market.[2] In the time dimension, Jegadeesh and Titman (2001) show that momentum remains large even subsequent to the period covered by the 1993 study.

Conrad and Kaul (1998) on the other hand indicate that a momentum strategy is usually profitable at the medium (three- to 12-month) horizon, while a contrarian strategy nets statistically significant profits at long-horizons but only during the 1926-1947 subperiod. Similar results are also found by Kang et al. (2002) that short-term contrarian and intermediate-term momentum profits exist in China stock market. Forner and Marhuenda (2003) show that the 12-month momentum strategy and the 60-month contrarian strategy yield positive abnormal returns in Spanish.

However, little study examines the link relation between price momentum and risk. Momentum profits are associated with several characteristics not typically associated with priced risk in standard models of expected returns. Jegadeesh and Titman (1993) and Kang et al. (2002) show that momentum is not driven by market risk. Fama and French (1996) demonstrate that their three-factor model fails to explain momentum. Rouwenhorst (1999) also find no evidence that high beta stocks outperform low beta stocks. Hurn and Pavlov (2003) also show that the presence of a strong medium-term momentum effect cannot be completely accounted for by any of the possible explanations. In contrary, Conrad and Kaul (1998) conclude that momentum profits can be explained by the cross sectional difference in individual

[2] Extent evidence now exists in support of the momentum strategy for the US (Jegadeesh and Titman, 2001), the UK (Hon and Tonks, 2003, Siganos, 2010), six Asian stock markets (Hameed and Kusnadi, 2002), Chinese (Wang and Chin, 2004, Naughton et al., 2008), Taiwan (Lin, 2004, Li et al., 2006), and a global range of stock markets (Griffin et al., 2003). But no evidence of momentum profits is found in Japan (Rouwenhorst, 1998, Griffin et al., 2003, Iihara et al., 2004, Li et al. 2006). Specifically, Rouwenhorst (1998) shows that the average momentum returns in emerging markets seem lower than those reported for developed markets by Jegadeesh and Titman (1993) and Rouwenhorst (1998).

stocks' expected returns. Avramov and Chordia (2006) indicate that momentum profits are consistent with asset pricing misspecification that varies with the business cycle. It means a systematic rather than idiosyncratic source of momentum profits. Rachev et al. (2007) analyze momentum strategies based on reward–risk stock selection criteria in contrast to ordinary momentum strategies based on a cumulative return criterion. Their findings fail to suggest that momentum based on reward–risk stock selection criteria can earn larger profits than ordinary momentum. Avramov et al. (2007) further argue that momentum profitability is large and significant among low-grade firms, but it is nonexistent among high-grade firms.

Some work demonstrates the significance of momentum for market regularities. Hong et al. (2003) show that the level of investor protection is negatively correlated with momentum effects and prices quickly reflect the information held by insiders, thus weakening momentum effects. Additionally, some work also demonstrates the significance of momentum for information uncertainty. Daniel et al. (1998) and Hong and Stein (1999) each employ different behavioral or cognitive biases to explain these anomalies.[3] Hong et al. (2000), Jiang et al. (2005), and Zhang (2006) recently provide evidence that the momentum strategy is also more effective when limited to high uncertainty stocks as measured by firm size, age, dispersion in analysts' earnings forecasts, stock volatility, and cash flow volatility. Sagi and Seasholes (2007) propose observable firm-specific attributes that drive momentum. However, Avramov et al. (2007) show that the information uncertainty variables do not capture the momentum profit across credit rating groups whereas firm ratings do capture the momentum

[3] In the study by Daniel et al. (1998), they assume that investors are overconfident about their private information and overreact to it. If overconfidence is in fact higher following market increases, then the overreactions will be stronger following these up markets generating greater momentum in the short-run. Hong and Stein (1999) employ two types of investors: "newswatchers" and "momentum traders." The newswatchers rely exclusively on their private information; momentum traders rely exclusively on the information in past price changes. Their model is based on initial underreaction to information and subsequent overreaction, which eventually leads to price reversal in the long-run.

profit across the uncertainty variables.

The contribution of the paper lays on the follows: First, momentum effects exist among stocks in US and Taiwan markets during our study period January 1998-October 2008. We repeated the J-month/ K-month method of Jegadeesh and Titman (1993, 2001). We find that it can earn positive profit in US and Taiwan markets after the portfolio formation. The results are similar with their findings. Second, firm ratings and momentum are intertwined. Momentum earns more profits for non-investment-grade group in US and high-investment-grade group in Taiwan. Specifically, by comparison of risk bearing capacity on firm ratings momentum in both US and Taiwan markets, investors in US prefer stocks with higher risk whereas those in Taiwan prefer stocks with lower risk. Third, when considering information asymmetry, firm ratings momentum profits in stocks with greater information uncertainty for non-investment-grade group in US and high investment-grade group in Taiwan. Finally, we examine the effect of the 2007 subprime crisis on the firm ratings momentum and find that firm ratings momentum indeed helps increase the payoff during the period for the subprime crisis, especially for middle-investment-grade groups (MIG) in US market.

The remainder of the paper is organized as follows. Section 2 describes the data and credit rating used in the study. Additionally, we employ the methods of Jegadeesh and Titman (1993, 2001). Section 3 reports the empirical findings are discussions. Section 4 concludes the paper.

2. METHODOLOGY AND DATA

2.1 Methodology

Our study extends the work of Avramov et al. (2007). This study is different from their study. Their study considers three credit rating groups where the low (high) credit risk group (group 1(group 3)) contains the 30% best (worst)-rated stocks based on their S&P rating. But this study also considers three credit rating groups based on traditional classifications (investment/ non-investment (or speculative) grade). In addition to non-investment/ speculative grade group labeled by low investment-grade group (NIG), we further divide traditional investment grade group into high investment-grade group (HIG) and medium investment-grade group (MIG).

The naïve momentum strategies are formed following the J-month/ K-month methodology of Jegadeesh and Titman (1993, 2001). At the beginning of each month t, all stocks are ranked by ascending order based on their performance of cumulative return during the period from t−6 to t-1, then ten quintiles are formed based on the order. These portfolios are then held for k months. We skip a month between the formation and holding periods (month t + 1 to t + H, where H is 6). Each portfolio return is calculated as the equally weighted average return of the corresponding stocks. The momentum strategies (W-L) are formed then by short the first quintile (loser portfolio, L) and use the result to buy the last quintile (winner portfolio, W). The zero-position is then held for H months from month t+1. In addition, we also construct overlapping portfolios to increase the power of the test and lower the bias of empirical study (Jegadeesh and Titman, 1993, 2001). In other word, a momentum decile portfolio in any particular month holds stocks ranked in that decile in any of the previous six ranking months. Monthly returns represent the equally weighted average return from this month's momentum strategy and all strategies from up to 5 months ago. Therefore, we compute average monthly profits during the holding period of the momentum strategy return.

Firm ratings momentum strategy is conducted by conditioning on both firm ratings and cumulative 6-month formation period returns. Investment grade – past return groups are formed on a sequential basis, sorting first on firm ratings and then past returns. The stocks in each group are then divided into 10 momentum portfolios based on their return over months $t-6$ to $t-1$. Then, in each group the momentum strategy essentially takes long winner portfolio and short loser portfolio. Average monthly profits during the holding period of the momentum strategy return are computed by following Jegadeesh and Titman (1993, 2001).

2.2 Data

Our sample includes all non-financial common shares in the S&P 500 Index in US market and those in the Taiwan Stock Exchange Capitalization Weighted Stock Index (TAIEX) in Taiwan market over January 1998 through October 2008 period.[4] They are selected from COMPUSTAT and Taiwan Economic Journal Corporation (TEJ) database, respectively, with including monthly price, riskfree rate, and firm ratings. Riskfree rates are the annualized one-month Treasury bill rate in US and the average annualized one-month deposit rate at Taiwan first six banks, respectively. As for business cycle, they are collected from the TEJ. Firms in the S&P 500 index are rated by the Standard & Poor’s and those in Taiwan index are rated by the TEJ Corporation. Additionally, we follow Jiang et al. (2005), Zhang (2006), and Avramov et al. (2007), and variables relating to information uncertainty are measured by firm size, age, a ratio of price over book value, absolute price change, and leverage (debt over equity).

To avoid that empirical findings are driven by low-priced and extremely illiquid stocks, we set up several selection criteria in US and Taiwan market. First, stocks must have at least six consecutive monthly return observations. In addition, as shown by Jegadeesh and Titman (2001), we exclude stocks in Taiwan market that, at the

[4] The Taiwan Stock Exchange Capitalization Weighted Stock Index (TAIEX) is the most widely quoted of all Taiwan Stock Exchange Corporation (TWSE) indices. TAIEX covers all of the listed stocks excluding preferred stocks, full-delivery stocks and newly listed stocks, which are listed for less than one calendar month.

beginning of the holding period, have market capitalization and volume traded that would place them in the bottom Taiwan Stock Exchange Corporation (TWSE) five percents deciles. On the other hand, stocks in the S&P 500 Index in US market are noticeable and liquid. They are not subject the second selection criteria.

2.3 Firm ratings institution

US firm ratings by the Standard and Poor's Financial Institutions Rating Service (S&P) are available on the COMPUSTAT tape. As defined by COMPUSTAT, they transform the S&P rating into conventional numerical scores, where 2 represents a AAA rating and 27 reflects a D rating as 1, 3, 22, and 25 are unassigned. Thus, a higher numerical score corresponds to a lower credit rating or a higher credit risk. Numerical ratings of 12 or below (BBB- or better) are considered investment grade and ratings of 13 or higher are labeled high yield or noninvestment or speculative grade. It is to note that, investment grade categories indicate relatively low to moderate credit risk, while ratings in the speculative categories either signal a higher level of credit risk or that a default has already occurred.

On the other hand, firms in Taiwan are also rated by TEJ. As shown by TEJ, it has constructed a Taiwan Corporation Credit Rating Index (TCRI) for many years and provides firm ratings information with TCRI. As defined by TCRI, TEJ evaluate each firm by applying 10 financial variables to calculate an aggregate rating score.[5] By ranking aggregate rating score, it represent rating score of 760 for the first grade at the first 5% level and one of 165 for the ninth grade at the last 5% level, respectively. Next, it re-divides into 7 equally grades where interval between each grade is aggregate rating score of 85. Therefore, TCRI exists for nine firm rating grades,

[5] The corporate rating methodology encompasses two basic components: business risk analysis and financial risk analysis. It is critical to understand that the rating analysis is not limited to an examination of various financial measures. In addition, it is in detail to see the website on TEJ that http://www.tej.com.tw/webtej/doc/crwatch.htm.

divided into three credit risk groups based on firm rating grades. Lowest credit risk groups include first four firm rating grades (1, 2, 3, and 4), highest credit risk groups include firm rating grade of 7, 8, and 9, and middle credit risk groups include firm rating grade of 5 and 6. Specifically, the smaller the firm rating grade is, the better the firm is.

To reconcile with firm ratings in Taiwan and US, our study, which is different from Avramov et al. (2007), follow traditional classifications (investment /speculation grade) to divide into three groups, high investment-grade group (HIG), medium investment-grade group (MIG), and low investment-grade group (or non-investment grade, speculative grade, NIG) as presented in Table1. Our classification of firm ratings is to conduct subsequent analyses on the relation between firm ratings and momentum investing.

Table 1 Firm ratings on COMPUSTAT and TEJ databases

Grade	S&P rating grade				TEJ TCRI grade
High-investment grade	1	(Unassigned)	5	(AA)	1
	2	(AAA)	6	(AA-)	2
	3	(Unassigned)	7	(A+)	3
	4	(AA+)	8	(A)	4
			9	(A-)	
Middle-investment grade	10	(BBB+)			5
	11	(BBB)			6
	12	(BBB-)			
Low-investment grade	13	(BB+)	20	(CCC)	7
	14	(BB)	21	(CCC-)	8
	15	(BB-)	22	(Unassigned)	9
	16	(B+)	23	(CC)	
	17	(B)	25	(Unassigned)	
	18	(B-)	27	(D)	
	19	(CCC+)			

2.4 Hypothesis built

It exists for the first hypothesis because behavior models (Daniel et al., 1998, Hong and Stein, 1999) and Conrad and Kaul's (1998) arguments make positive predictions about the returns of past winners and losers over the holding period.

[H1] It earns positive profits for naïve momentum.

Avramov et al. (2007) show that extreme losers and winners for naïve price momentum are the only noninvestment grade portfolios and the middle portfolio for naïve price momentum has the best credit rating of BBB+. Their findings lead to average credit rating forms of a U-shape across momentum portfolios, with suggesting that the momentum strategy essentially takes long and short positions in firms with the highest credit rating.[6] Hence, we have the second hypothesis.

[H2] The relations between return and credit risk across momentum portfolios are an asymmetry.

According to previous reasons proposed by prior studies, we infer that, when firm ratings are lower (higher) credit risk, it exist lower (higher) compensation for risk. Momentum profit by ranking returns of all stocks produces lower (higher) returns. The momentum strategy essentially takes long winner portfolio and short loser portfolio. All firms within low rating/credit risk stocks have homogeneous performances but those within high rating/credit risks stocks have heterogeneous performances. It suggests that the difference between high and low momentum stocks for low rating/credit risk exhibits smaller return range but larger return range for high rating/credit risk.

In other words, as shown by Avramov et al. (2007), the momentum strategy payoffs increase monotonically with credit risk. Their arguments show that the difference in momentum profits across credit risk groups is driven primarily by loser stocks. However, we expect larger payoffs to firms rating momentum than naïve momentum. It expects that firm rating momentum dominates naïve momentum. Here, we have the third hypothesis.

[6] In the study of Avramov et al. (2007), over formation periods of three, 6, 9, and 12 months, the extreme loser and winner portfolios of Jegadeesh and Titman (1993) consist of stocks with the lowest and the next-lowest credit rating, respectively. The extreme loser (winner) portfolio has an average rating of BB- (BB+).

[H3] Payoffs to momentum strategies strongly depend upon firm ratings. Additionally, these payoffs decrease where investment grade conserves. In other words, firm rating momentum dominates naïve momentum.

According to aforementioned testable hypotheses, we examine the US and Taiwan market by conducting firm ratings and momentum investing. Our findings could provide valuable insights on the link between firm ratings and momentum investing.

3. RESULTS

3.1 Preliminary analyses on markets

Table2 presents preliminarily descriptive statistics on markets. Panel A shows monthly average returns and standard deviations of individual and market portfolios. Average return of individual portfolios in US is larger than one in Taiwan while the risk in US is the smaller than one in Taiwan. Additionally, results comparing with individual portfolio and market portfolio are opposite. We note that market portfolios (VW) returns reflect primarily the return behavior of large stocks, while Individual portfolios (EW) returns are tilted more toward small stocks

Table2 Preliminarily descriptive statistics

Panel A: Individual and market portfolios

	US		Taiwan	
	mean	std. dev.	mean	std. dev.
P	0.0047	0.0479	-0.0073	0.0905
M	-0.0006	0.0465	0.0010	0.0140

Panel B: Individual firms

	US			Taiwan		
	mean	std. dev.	cv	mean	std. dev.	cv
RAT	9.8988	0.4092	0.0413	5.3448	0.2054	0.0384
SIZE	9.0813	0.2854	0.0314	8.6185	0.2967	0.0344
P/B	5.2910	1.2594	0.2380	1.7447	0.4128	0.2366
Year	62.9286	2.8095	0.0446	26.7319	0.9639	0.0361
Vol	0.0806	0.0292	0.3623	0.1083	0.0421	0.3885
D/E	0.0174	0.0047	0.2701	0.4893	0.2879	0.5883

Panel C: A link between individual firms and market Model1: $R_p - R_F = a + b \times (R_M - R_F)$ Model2: $R_p - R_F = a + b \times (R_M - R_F) + b_1 \times SMB + b_2 \times HML$				
	US		Taiwan	
	Model 1	Model 2	Model 1	Model 2
Intercept	0.0037**	0.0060***	- 0.0081	0.0082
Market	1.0226***	0.9037***	1.8058***	1.4893***
SMB	.	0.1905***		-0.0571
MBL	.	0.0049		0.2759***

Panel D: Momentum profits and Fama-French three factors alphas		
	momentum profits	Fama-French three factors alpha
US	0.0119***	0.01215***
Taiwan	0.0082***	-0.0258***

Notes: R_p is monthly returns of portfolio (P) formed by equal-weighted all stocks, R_F is the risk-free rate, R_M is monthly returns of market portfolio (M), SMB is the size factor (small stocks minus big stocks), and HML is the book-to-market factor (high minus low book-to=market stocks). Market is the market factor (the index minus risk-free rate). ***, **, and * represent significance at the 1%, 5%, and 10% level, respectively. The values of momentum profits are computed by using White (1980) standard errors.

Panel B shows the average value (mean), standard deviation (std. dev), and coefficient of variation (cv) of firms rating (RAT) and variable measured by asymmetric information defined as size, the ratio of price over book value (P/B), age of firms (Year), volatility (Vol), and leverage (D/E). The evidence of cv of firms rating in US larger than one in Taiwan indicates variations of firms rating have more complex in US, consistent with Table 1. On the other hand, except to P/B and Year, there exists serious information asymmetry in Taiwan by observing cv of variables.

Panel C presents a link between individual firms and market. The alphas on market model and Fama-French three-factor model in US are positive and significant but insignificant in Taiwan. Specifically, size effect is found in US whereas value effect is found in Taiwan. It means that it overreacts in Taiwan but it underreacts in US, with supporting the argument of Rouwenhorst (1999).

Panel D provides monthly returns for momentum profits and Fama-French three factors alphas. The momentum averages a profit of 0.0119 per month in US and 0.0082 in Taiwan. Our findings are the support of arguments proposed by prior studies that momentum is economically large in mature markets and small but positive in many emerging markets.

Additionally, this Panel also reports the alphas of the momentum portfolios estimated by regressing the monthly momentum returns on the monthly returns of both the index less the risk free rate and three Fama-French factors. The Fama-French alphas for whole sample are 0.01215 in US and -0.0258 in Taiwan. It means that positive alpha is due to well performance of prior winners whereas negative alpha is due to worse performance of prior losers.[7]

3.2 Momentum and firms rating over the formation period

Table3 presents a link between momentum and firms rating when considering and computing average numerical firms rating for each ten portfolios over the formation period. Average numerical ratings in the U.S. are 11.2324 (BBB) for the loser portfolio (P1) and 11.7418 (BBB-) for the winner portfolio (P10). The extent that the risk of P10 is higher than P1, according positive relation between risk and return, leads to positive momentum profits. It is consistent with results in Table2. However, the middle portfolio (P5) has the best firm rating of 9.1918 (A-). Results in the U.S. support the proposition of H2 that the relations between return and credit risk across momentum portfolios are an asymmetry.

On the other hand, similar results are found when observing results in Taiwan. It is to note that, in Taiwan the winner portfolio (P10) (5.5058) has lower average

[7] Momentum profits are significant and positive (0.0142) for prior winners and insignificant and positive (0.0023) for prior losers in US. On the other hand, Momentum profits are insignificantly negative return (-0.0026) for prior winners and significantly negative return (-0.0108) for prior losers in Taiwan.

numerical ratings than the loser portfolio (P1) (6.1017) but these results in US are opposite. Furthermore, the Taiwan extent that credit risk of P10 is lower than P1 may conjecture negative profits for naïve momentum but actually earn positive profits as shown in the Panel D in Table2. The possible reason for positive momentum profits is due to poor losers. Additionally, the middle portfolio (P7) in Taiwan has the best firm rating of 5.1010. Our argument of U-shaped regularity on average ratings across various naïve momentum portfolios suggests the proposition of H2.

Avramov et al. (2007) show that the momentum strategy of buying prior winners and selling prior losers essentially take long and short positions in firms with highest credit risk. Our results are consistent with the argument of Avramov et al. (2007).

Table3 Firm ratings profile of momentum portfolios over formation period

	U.S.	Taiwan
P1(L)	11.2324	6.1017
P2	9.8212	5.7047
P3	9.5147	5.3856
P4	9.2827	5.2436
P5	9.1918	5.2430
P6	9.2028	5.2384
P7	9.3860	5.1010
P8	9.6984	5.1389
P9	10.3511	5.1217
P10(W)	11.7418	5.5058

3.3 Momentum profits by different investment grade groups

An examination of momentum by conditioning on both firm ratings and cumulative 6-month formation period returns, we first consider three different investment-grade groups, including high investment-grade group (HIG), middle investment-grade (MIG), and non-investment-grade group (NIG) with comparison of naive momentum in all stocks (All), and then compute their monthly average return of grade groups momentum. These results are presented in Table4.

By comparing results in the U.S. and Taiwan markets, we have surprising results. In the U.S. market, the momentum payoff for non-investment grade group (NIG) reaches as high as 0.0296. For HIG, payoff to firm ratings momentum is positive and insignificant. In contrast to results in Taiwan, payoffs to firm ratings momentum are 0.0102 for HIG, 0.0055 for MIG, and 0.0074 for NIG, respectively. In general, payoffs to momentum strategies are strongly related to firm ratings comparing with payoffs to naïve momentum. It means that firm ratings based on the strategies by buying past winners and selling past losers can earn positive profits. Hence, the addition of firm ratings to momentum helps increase profits relative to naïve momentum.

Table4 Different investment-grade momentum profits and Fama-French three factors alphas

		HIG	MIG	NIG	All
US	Momentum	0.0004	0.0154***	0.0207***	0.0119***
	alphas	- 0.0016	0.0152***	0.0257***	0.0122***
Taiwan	Momentum	0.0102**	0.0055**	0.0074*	0.0082***
	alphas	0.0118***	0.0040	0.0074	-0.0258***

Notes: ***, **, and * represent significance at the 1%, 5%, and 10% level, respectively. The values of momentum profits for high investment-grade group (HIG), middle investment-grade (MIG), and non-investment-grade group (NIG) as well as naive momentum in all stocks (All) are computed by using White (1980) standard errors.

In addition, results in the U.S. show that payoffs to grade group momentum decrease as grade groups tend to be conservative, but opposite in direction in Taiwan. These U.S. firms with lower credit risk are larger market capitalizations, with suggesting that the momentum effect is weaker (Hong, Lim, and Stein, 2000 and Jegadeesh and Titman, 2001). In this segment of the market, prices for firms with lower (higher) credit risk quickly (slowly) reflecting the information leads to weaken (increase) momentum profitability.[8] In contrast to results in Taiwan, due to larger payoffs to momentum within high rating/credit risks stocks than lower rating/credit risks stocks, we provide two possible reasons. The momentum effect is relatively stronger for firms with smaller market capitalizations, lower book-to-market ratios, and higher turnover ratios (Jegadeesh and Titman, 1993, 2001, Sagi and Seasholes, 2007). One is that most firms in Taiwan are the export-oriented corporations with smaller market capitalizations and lower book-to-market ratios, with supporting that the momentum effect is relatively stronger, especially for firms with lower credit risk. Another is that investors used to trade blue chip stocks with lower credit risk. It leads to higher turnover ratios, suggesting that the momentum effect is relatively obvious. Thus, our results partially support this proposition on H3. However, the addition of firm ratings to momentum dominates naïve momentum. Our findings are consistent with the argument of Avramov et al. (2007).

Table4 also reports alphas of Fama-French three factors model for various investment-grade momentum. Alphas on MIG and NIG in US as well as HIG in Taiwan are positive and significant. It means that the sources of striking and positive payoff to grade momentum are well prior winners and poor prior losers.[9] In the holding period, the more the loser portfolio loses, the more momentum strategy will gain. On the other hand, another reason is that, the more the winners win, the more momentum strategy will gain. As shown by Avramov et al. (2007), the momentum strategy payoffs increase monotonically with credit risk. Their arguments show that the difference in momentum profits across credit risk groups is driven primarily by loser stocks.

---

[8] Hong, Lim, and Stein (2000) argue that prices for firms with lower (higher) credit risk quickly (slowly) reflecting the information leads to weaken (increase) momentum profitability.

[9] In US, payoffs to winners in MIG and NIG are 0.0130 and 0.0156 whereas those to losers are -0.0025 and -0.0052. In Taiwan, payoffs to winners and losers in HIG are 0.0007 and -0.0092.

3.4 Robustness checks

Some prior studies consider the source of momentum profitability, like investor protection (Hong and Stein, 1999, Hong et al., 2003), and asymmetric information (Hong and Stein, 1999, Jiang et al., 2005, Zhang, 2006, Avramov et al., 2007) and the state of the market (Cooper et al., 2004). This section examines the impact of above factors on firm ratings momentum.

A. The mature degree of market

Arguments in DHS (1998), which indicate that overconfident investors are likely to overreact to their private information, suggest that the momentum effect is likely to be stronger when investor protection is weaker.[10] Hong et al. (2003) also show that the level of investor protection is negatively correlated with momentum effects. We attempt to examine whether the momentum effect should be stronger (weaker) in the less (more) mature market with weak (strong) investor protection. Here, the U.S. and Taiwan markets represent the mature and immature market, respectively.

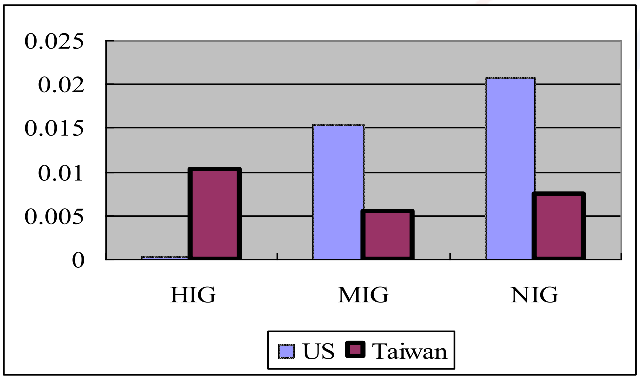


Fig. 1 Plots of monthly average payoffs to firm ratings momentum across grade groups

Figure1 plots monthly average payoffs to firm ratings momentum across grade groups from Table4 to compare payoffs to different grade momentum in the U.S. and Taiwan. We find larger payoffs for HIG in Taiwan than the U.S., supporting this

[10] If the market is more mature, investors are better protected.

proposition that the momentum effect should be stronger (weaker) in less (more) mature market with weak (strong) investor protection is only confirmed for HIG, not for MIG and NIG.[11] On the other hand, lower payoffs to firm ratings momentum for MIG and NIG in Taiwan result from the possibility that stock prices can be manipulated. In other words, market manipulation can potentially offset the momentum effect if manipulators tend to induce negative serial correlation in stock returns by pushing stock prices above their intrinsic values with false disclosures and then let the prices subsequently collapse (Chui, Titman, and Wei, 2000).

B. Information asymmetry

Next, we consider whether momentum payoffs arise with serious information asymmetry because investors underreact to news in updating their priors and news is gradually incorporated into stock prices. Table5 presents momentum profits with independent sorts by different investment-grade groups and alternative firm native. Variants for firm native are measured by size, the ratio of price over book value (P/B), age of firms (Year), absolute price change (volatility, Vol), and leverage (D/E).

Results in the U.S. show that firm ratings momentum returns increase with grade risk across all size groups. On the other hand, while firm ratings momentum profits increase with size for MIG and present inverted U-shaped pattern for NIG, there is no size impact on HIG. There is some interaction between size and firm-grade risk as the highest momentum return exists for NIG with the middle size and (0.0269) and the lowest exists for HIG with the middle size and (-0.0008). In contrast to Taiwan, payoffs to firm ratings momentum decrease with grade risk or show a U-shape pattern across all size groups. Specifically, HIG have the largest momentum

[11] For MIG and NIG, larger payoffs to firm ratings momentum in the U.S. than Taiwan suggesting the extent that, in the mature (immature) market, prices quickly (slowly) reflecting the information leads to weaken (increase) momentum profitability. On the other hand, prior studies show that momentum profits in mature markets are larger than those in immature markets (Rouwenhorst, 1999).

returns across all size groups. On the other hand, firm ratings momentum profits increase with size for HIG, but there is no size impact on MIG and NIG. The highest momentum return exists for HIG with large size (0.0078). In addition, our findings for HIG with high size in the U.S. and MIG with high size as well as NIG with high size in Taiwan are consistent with arguments that the momentum effect is weaker for larger size firms (Hong, Lim, and Stein, 2000 and Jegadeesh and Titman, 2001).

Similar results are also found when considering P/B, Year, Vol, and D/E. We also find that the momentum effect is relatively stronger for MIG and NIG in the U.S. and across grade group in Taiwan by considering firms with lower book-to-market ratios. These findings are consistent with Jegadeesh and Titman (1993, 2001) and Sagi and Seasholes (2007). In addition, our results present the highest payoff for NIG with middle Year in the U.S. (0.0273) and for HIG with low PB in Taiwan (0.0108), respectively.

In sum, grade groups shed valuable lights on payoffs to momentum strategy, but the same does not necessarily hold for sorts on size, P/B, the age of year, volatility, and leverage. These results strongly suggest that firm ratings may independently explain the momentum effects not captured by factors that proxy for information asymmetries. Our findings are consistent with Avramov et al. (2007). Our findings fail to support for a prominent stylized fact is that firms with high market-to-book ratios produce enhanced momentum profits (Sagi and Seasholes, 2007).

Table5 Momentum profits with independent sorts by different investment-grade groups and alternative firm native

			Size	Year	D/E	VOL	PB
US	HIG	L	0.0005	0.0008	0.0010	- 0.0007	- 0.0020
		M	- 0.0008	0.0011	- 0.0004	- 0.0006	- 0.0009
		H	0.0002	0.0008	- 0.0007	0.0002	0.0004
	MIG	L	0.0029	0.0049**	0.0041	0.0042**	0.0112***
		M	0.0063***	0.0056***	0.0031	0.0057**	0.0008
		H	0.0161***	0.0159***	0.0055**	0.0089***	0.0040

	NIG	L	0.0113***	0.0133***	0.0043	0.0055	0.0157***
		M	0.0269***	0.0273***	0.0149*	0.0173***	0.0090**
		H	0.0149*	0.0175***	0.0132*	0.0166***	0.0035
Taiwan	HIG	L	- 0.0015	0.0032	0.0024	0.0049**	0.0108***
		M	0.0037**	0.0081***	0.0028	0.0074***	0.0060***
		H	0.0078***	0.0082***	0.0076***	0.0069***	0.0047**
	MIG	L	- 0.0022	0.0014	- 0.0032	0.0009	0.0045*
		M	0.0033	0.0006	0.0007	0.0002	- 0.0025
		H	0.0011	0.0018	- 0.0035	0.0008	- 0.0004
	NIG	L	0.0014	0.0027	- 0.0022	0.0004	0.0081**
		M	- 0.0012	0.0009	- 0.0062**	0.0006	- 0.0005
		H	0.0042	0.0090**	- 0.0019	0.0014	- 0.0033

Notes: ***, **, and * represent significance at the 1%, 5%, and 10% level, respectively. The values of momentum profits are computed by using White (1980) standard errors.

C. 2007 subprime crisis effect

Finally, due to sample period containing 2007 subprime crisis, we examine the effect of crisis on firm ratings momentum profits and Fama-French three factors alphas.[12] These results are reported in Table6. This Table presents payoffs to three different investment-grade groups momentum and their Fama-French three factors alphas during crisis and pre-crisis periods. Findings relating to payoff to naïve momentum and alphas are also provided.

During crisis period, in US, the payoff to MIG is significant and positive (0.0110) although naïve momentum profit is also significantly positive (0.099). The evidence of negative alpha presents winners and losers seem to tend to revert. On the other hand, there exits no payoff to three different investment-grade groups momentum although there exist significantly negative payoffs to naïve momentum. Specifically, the evidence of positive alpha on HIG means winners and losers seem to tend to revert. In contrast to the period for pre-crisis, most payoffs to three different

[12] We conduct the switching regression proposed by Tasy (1989) and check the data for structural breaks. We find the switching dates on 2007 subprime crisis are June 2007 in US and July 2007 in Taiwan, respectively.

investment-grade group momentums in US and Taiwan are remarkably positive and perform well than naïve momentum. Additionally, there exist positive alphas in most cases, with suggesting well winners and poor losers.

Table6 Firm ratings momentum and Fama-French three factors alphas with 2007 subprime crisis

	Period	momentum	HIG	MIG	NIG	All
US	crisis	payoff	0.0127	0.0110**	0.0058	0.0099***
		alpha†	0.0007	- 0.0001	0.0002	0.0001
	pre-crisis	payoff	- 0.0004	0.0158***	0.0220*	0.0120***
		alpha	- 0.0010	0.0177***	0.0305***	0.0142***
Taiwan	crisis	payoff	- 0.0017	0.0008	- 0.0214	- 0.0060*
		alpha†	0.0006**	0.0000	0.0007	0.0000
	pre-crisis	payoff	0.0115***	0.0029	0.0092**	0.0092***
		alpha	0.0111***	0.0013	0.0094*	0.0082**

Notes: ***, **, and * represent significance at the 1%, 5%, and 10% level, respectively. The periods for the Crash are from 2007/7 to 2008/10 in US and from 2007/8 to 2008/10 in Taiwan. † represents to create new data containing the 100 bootstrap samples to conduct the regression analysis due to subsample less than 30. The values of momentum profits are computed by using White (1980) standard errors.

Above all, these findings account for the argument of Cooper et al. (2004) that momentum profits depend on the state of the market.[13] In particular, our part evidence of momentum profits during crisis periods is more dominant than findings during down markets of Cooper et al. (2004). Therefore, there are different momentum profits for various rating groups depending on the various states of the market, especially during crisis and non-crisis periods.

4. Conclusions

This paper considers a link between momentum profitability and firm ratings. Our paper contributes to the existing literatures in these aspects. First, our findings are

[13] In their study, from 1929 to 1995, the mean monthly momentum profit following positive market returns is 0.93%, whereas the mean profit following negative market returns is –0.37%.

based on all non-financial firms in the S&P 500 Index in US market and those in the TAIEX in Taiwan market over January 1998 through October 2008 period. Second, credit risks for various portfolios of naive momentum strategies present a U-shaped pattern. Third, due to firm ratings containing valuable information and predicting the cross-sectional stock returns, firm ratings based momentum strategies can even earn positive profits. In particular, it exist highest payoffs for non-investment grade group in US and high-investment grade group in Taiwan. Additionally, by comparisons of risk bearing capacity on firm ratings momentum, investors in US prefer stocks with higher risk whereas those in Taiwan prefer stocks with lower risk. Fourth, firm ratings can be used to strengthen naïve momentum effects. The refined momentum strategies can earn a much higher profit. Additionally, the mature degree of market is also beneficial for firm ratings momentum. Firm ratings may independently explain the momentum effects not captured by factors that proxy for information asymmetries. Finally, firm ratings momentum indeed helps increase the payoff during the period for the 2007 subprime crisis, especially for middle-investment-grade groups (MIG) in US market.

References

Antoniou, A., Lam, H., Paudyal, K.: Profitability of momentum strategies in international markets: The role of business cycle variables and behavioural biases. J. Bank. Financ. **31**, 955-972 (2007)

Avramov, D., Chordia, T.: Asset pricing models and financial market anomalies. Rev. Financ. Stud. **19**, 1001-1040 (2006).

Avramov, D., Chordia, T., Jostova, G., Philipov, A.: Momentum and credit rating. J. Finance **62**, 2503-2520 (2007)

Barberis, N., Shleifer, A., Vishny, R.: A model of investor sentiment. J. Financ. Econ. **49**, 307-343 (1998)

Boot, A., Milbourn, T., Schmeits, A.: Credit ratings as coordination mechanisms. Rev. Financ. Stud. **19**, 81-118 (2006)

Chan, L.K., Jegadeesh, N., Lakonishok, J.: Momentum strategies. J. Financ. **51**, 1681-1713 (1996)

Chordia, T., Shivakumar, L.: Momentum, business cycle, and time-varying expected returns. J. Finance **57**, 985-1019 (2002)

Chui, A., Titman, S., Wei, J.: Momentum, legal systems and ownership structure: An analysis of Asian stock markets. Working paper, Hong Kong Polytechnic University (2000)

Conrad, K., Kaul, G.: An anatomy of trading strategies. Rev. Financ. Stud. **11**, 489-519 (1998)

Cooper, M., Gutierrez Jr., R., Hameed, A.: Market states and momentum. J Finance **59**, 1345-1365 (2004)

Daniel, K., Hirshleifer, D., Subrahmanyam, A.: Investor psychology and investor security market under-and overreactions. J. Finance **53**, 1839-1886 (1998)

DeLong, J.B., Shleifer, A., Summers, L.H., Waldmann, R.J.: Positive feedback investment strategies and destabilizing rational speculation. J. Finance **45**, 379-395 (1990)

Fama, E.F., French, K.R.: Multifactor explanations of asset pricing anomalies. J. Finance **51**, 55-84. (1996)

Forner, C., Marhuenda, K.: Contrarian and momentum strategies in the Spanish stock market. Eur. Financ. Manag. **9**, 67-88 (2003)

Giannikos, C.I., Ji, X.: Industry momentum at the end of the 20th century. Int. J. Bus. Econ. **6**, 29-46 (2007)

Griffin, J.M., Ji, S., Martin, J.S.: Momentum investing and business cycle risk: evidence from pole to pole. J. Finance **58**, 2515–2547 (2003)

Grinblatt, M. and Moskowitz, T.: Does industry explain momentum?. J. Finance **54**, 1212–1249 (1999)

Grundy, B.D., Martin, J.S.: Understanding the nature of risks and the source of the rewards to momentum investing. Rev. Financ. Stud. **14**, 29-78 (2001)

Hameed, A. and Kusnadi, K., 2002. Momentum strategies: Evidence from the Pacific Basin Stock Markets. J. Financ. Res. **25**, 383-397 (2002)

Hon, M., Tonks, I.: Momentum in the UK stock market. J. Multinatl. Financ. Manag. **13**, 43-70 (2003)

Hong, D., Lee, C., Swaminathan, B.: Earnings momentum in international markets. Working paper, Cornell University (2003)

Hong, H., Stein, J.C.: A unified theory of underreaction, momentum trading and overreaction in asset markets. J. Finance **54**, 2143-2184 (1999)

Hong, H., Lim, T., Stein, J.C.: Bad news travels slowly: Size, analyst cover- age, and the profitability of momentum strategies. J. Finance **55**, 265-295 (2000)

Hurn, S., and Pavlov, V.: Momentum in Australian stock returns. Aust. J. Manag. **28**, 141-156 (2003)

Iihara, Y., Kato, H.K., Tokunaga, T.: The winner–loser effect in Japanese stock returns. Jpn. World Econ. **16**, 471-485 (2004)

Jegadeesh, N., Titman, S.: Returns to buying winners and selling losers: Implications for stock market efficiency. J. Finance **48**, 65-91 (1993)

Jegadeesh, N., Titman, S.: Profitability of momentum strategies: An evaluation of alternative explanations. J. Finance **56**, 699-720 (2001)

Jiang, G., Lee, C., Zhang, G.: Information uncertainty and expected stock returns. Rev. Account. Stud. **10**, 185-221 (2005)

Kang, J., Liu, M., Ni, X.: Contrarian and momentum strategies in the China stock market: 1993-2000. Pac. Basin Financ. J. **10**, 243-265 (2002)

Li, C.A., Luo, J.S., Su, Y.Y.: Momentum returns, investor sentiments and business cycle. J. Financ. Stud. **14**, 73-109 (2006)

Lin, M.C.: Underreaction, trading volume, and momentum profits in Taiwan stock market. Asia Pac. Manag. Rev. **9**, 1115-1142 (2004)

Liu, L., Zhang, L.: Momentum profits, factor pricing, and macroeconomic risk. Rev. Financ. Stud. **21**, 2417-2448 (2008)

Naughton, T., Truong, C., Veeraraghavan, M.: Momentum strategies and returns: Chinese evidence. Pac. Basin Financ. J. **16**, 476-492 (2008)

Rachev, S., Jasic, T., Stoyanov, S., Fabozzi, F.J.: Momentum strategies based on reward-risk stock selection criteria. J. Bank. Financ. **31**, 2325-2346 (2007)

Rouwenhorst, K.G.: International momentum strategies. J. Finance **53**, 267-284 (1998)

Rouwenhorst, K.G.: Local return factors and turnover in emerging stock markets. The J. Finance **54**, 1439-1464 (1999)

Sagi, J.S., Seasholes, M.S.: Firm-specific attributes and the cross-section of momentum. J. Financ. Econ. **84**, 389-434 (2007)

Tsay, R.S.: Testing and modeling threshold autoregressive models. J. Am. Stat. Assoc. **84**, 231-240 (1989)

Wang, C., Chin, S.: Profitability of return and volume-based strategies in China's stock market. Pac. Basin Financ. J. **12**, 541-564 (2004)

White, H.: A heteroskedasticity-consistent covariance matrix estimator and a direct test for heteroskedasticity, Econometrica **48**, 817-838 (1980)

Zhang, X.F.: Information uncertainty and stock returns. J. Finance **61**, 105-136 (2006)

Effect of Selected Marketing Mix Elements on Brand Equity Extended Aacker's Model: Evidence Agriculture- Bank in Mazandaran Province

Mehdi Zaribaf [1] , Seyed Reza Hosseini[2]

[1]Assistant professor of Islamic Azad University, Firoozkuh Branch
[2]Master of business management from Islamic Azad University, Firoozkuh Branch

Dr Mehdi Zaribaf
Address : Management department , Islamic Azad University
Tel :+98 – 2177368523- 09121898543
Email : mzrbf1@gmail.com

Seyed Reza Hosseini
Address : Haghparast Ave , Rodaki St, Amir mazandarani Blv , Sari City , Mazandaran Province , IRAN
Tel : +98- 1512298258- 09111556632
Email : hosseini_s_r@yahoo.com

[2] Corresponding author . Tel : +98-9111556632
Email address :Hosseini_s_r@yahoo.com

Effect of Selected Marketing Mix Elements on Brand Equity Extended Aacker's Model: Evidence Agriculture- Bank in Mazandaran Province

Mehdi Zaribaf [2] , Seyed Reza Hosseini[2]

[1]Assistant professor of Islamic Azad University, Firoozkuh Branch
[2]Master of business management from Islamic Azad University, Firoozkuh Branch

Abstract: This study explores to affect selected marketing mix in banking industry on brand equity dimensions with yoo and his colleagues (extended model of Aacker),for current account customer at branches of Agricultural Bank in Mazandaran Province. Our samples consist of 450 of these customers and selected by categorized random sample method. The methodology of this study is based on descriptive and Structural Equation Modeling (SEM).To achieve this , we analyze data from questionnaire based on structural equation modeling supports the hypothesis of direct effect between variables .the results of research indicate , loyalty among Aacker ' s elements and service among selected marketing mix elements affect more than other elements on brand equity . At the end, author proposes not only for better marketing mix management in order to enhance the level of brand equity but also a new model for financial service industries.

Key words: brand equity, marketing mix elements of services, agriculture bank, structural equation modeling

[2] Corresponding author . Tel : +98-9111556632
Email address :Hosseini_s_r@yahoo.com

1. Introduction

Brands are always initial points of completive offers in consuming markets, and then they can be so critical for organizations success. It is very important for brands to be strategically well managed (wood, 2000, p663). Brand equity shows price gain absorbed by a strong brand vs. a mediate one (Aaker 1996, p15, Barwise, et al. 1989, p25). Besides brand equity increases company's value indirectly through supporting customer's value. Brand equity and customer value convey value to company via improving: marketing schedule efficiency and effectiveness, brand loyalty, price and profit margin, trade leverage and competitive advantage (Aaker, 1991, p15).
The banks as a part of the country's economical system have a great role in development and during recent years encountered several challenges such as being on the increasing competition between Banks and customers awareness and knowledge level. Speeds environmental changes and expedite movements of competitors in government and private sections and urgency of absorbing resources have motivated the banks for improving their customers' satisfaction degree in order to create lifetime patrons, maintain and enhancing their advantage through creating new values which require affiliation of banks and customers (Ghasemi & Salehian, 2005).
Shocker, A.D., Srivastava, R.K. and Rueckert, R.W. (1994, p 157) believed that more attention should be focused on development of systematic point of view about products/services and brands, in order to describe how tangible assets- which are a brand manager's selective marketing mix- can combine with the product/ service forming brand equity and affecting buyer's decision.
It seems that Iranian banks especially governmental ones have not organized systematic and scientific plans to recognize and meet customers' needs and stop losing customers and to make lifetime patrons. Besides, low cost of shifting their banks for Iranians and displacing competitors are as a result of having insufficient planned strategies such as creating trademarks, and permanent values. In fact, the banks increase customers cost of shifting their banks and replacing competitors through providing loyalty programs for different class of customers.
In this research we are going to identify those marketing mix components which have an impact on creating brand equity and specify how the impact of marketing mix on Agricultural Bank in Mazandaran Province is, and if customers' satisfaction about brand equity are equal in all classified branches, and finally trough acquired results, we can help managers to implement marketing activities. So, the study of impediments for marketing activities and finding proper and scientific based solutions seems to be essential for developing marketing in organizations especially for banks.
Our initiative in this research is applying yoo and his colleagues' model in the field of Iranian bank services and examining the model for creating brand equity, with considering the conditions, sensitivity analysis has been done in model's empirical experiment.
The findings can help Agricultural Bank in specific and all other banks in common, to formulate marketing strategies according their requirements. The proposed model is what this research could share in scientific marketing theories related to brand equity and development of banks' strategies for effectiveness in managing, and help marketing researchers to expand theories of brand and brand equity in Iranian companies, which are all the sub-purpose of this research.

2. Literature review

Brand equity operations are usually divided in two categories: consumer's perceptions (brand awareness, brand association, and perceived quality) and consumer's behavior (brand loyalty and tendency towards paying higher prices). Brand equity is defined in 1995 by Lasser, et al as improvement in gaining profit from a product's brand name.
Customer-based brand equity only includes conceptual dimensions and not their behaviors and attitudes, such as loyalty and usage intention which are different from Aaker's definition (1991, p

70). Four dimensions of brand equity, brand loyalty, brand awareness, perceived quality, and brand image which have been presented by Aaker (1991) and Joachimsthaler , E. (2000) were high accepted by experts(for example, Keller, 1993, Mo'tameni & Shahrokhi, 1998, low &Lamp Jr. (2000), Prasad & Dav.(2000), Yoo, B. & Donthu, N. (2001).
Aaker is one of the few writers who combined two perceptual and behavioral aspects.
The advantage of combining both consumer perceptions and actions into a single marketing measure of brand equity is that it is well documented that attitudes alone are generally a poor predictor of marketplace behavior. (Myers, 2003, p 40)
Clarity of defined variables, simple measurement of variables, and wide usage of the model in research studies and frequent application of questionnaire in different countries are the strong points of Aaker's model.

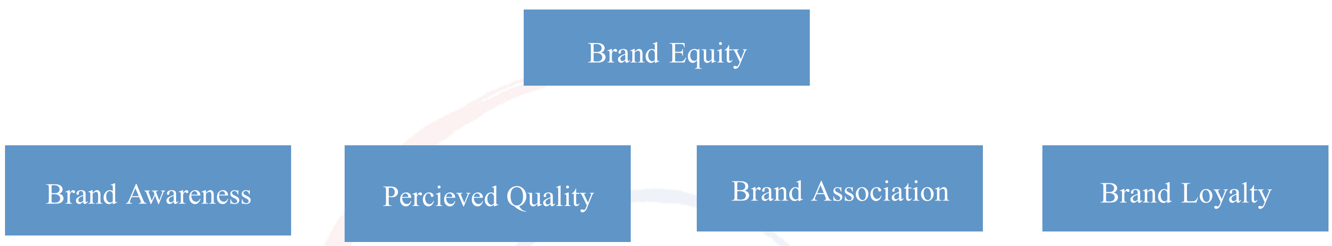


Figure1. Brand Equity – Ref.: Aaker & Joachimsthaler, E. (2000, p 17)

Yoo, et al have applied confirmatory factor analysis for measuring brand equity too and considered it as a three dimensional structure in which brand awareness and brand association are combined into one dimension.

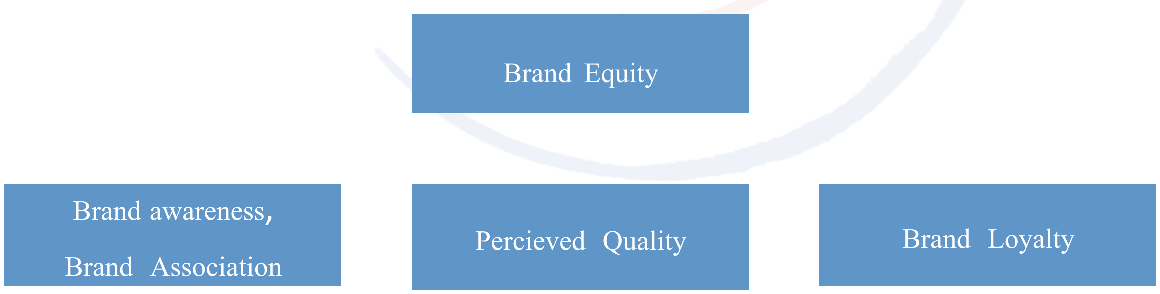


Figure 2. Brand Equity – Ref.: Yoo, et al. (2000, p 197)

Yoo, B. and Donthu, N. (2001) were the first researchers who presented a multidimensional scale for customer based brand equity and tested it psychometrically. They considered three dimensions for it. Later, Washburn and plank (2002) emphasized on dimensional state of brand equity and demanded for differentiate between awareness and association dimensions of brands. Though, these two are conceptually different (Aaker, 1991, p 153), but empirical evidences (Yoo, B. and Donthu, N., 2001, Yoo, et al. 2000) indicate that they should combine.

2.1.Definitions of brand equity dimensions :

Brand: A name, term, design, symbol, or any other feature that identifies one seller's good or service as distinct from those of other sellers.

Brand equity (OBE): a set of capabilities and assets attached to a brand, a name or a symbol which is added or deduct to the value of a product for customers by company (Aaker , D.A and Joachimsthaler , E.,2000, p 17).

Perceived Quality (QL): customer's evaluation and judgeship about a product or service's preference and advantage, consider to its usage as distinct from other products and services in existing markets (Zeithamal, V.A. 1988, p 3).

Brand loyalty (LO): creating strong commitment for repurchasing a product or service over time despite of situational effects and marketing activities which can cause behavioral changes (Oliver, R.L., 1997, p 392).

Brand Awareness, Brand Association (AA): brand awareness is the customers' ability for having in mind a product which belongs to an especial class of goods (Aaker, 1991, p 61). Brand awareness along with frequent association of it can cause an image for product. Brand associations can be anything that connects the customer to the brand. It can include user imagery, product attributes, use situations, organizational associations, brand personality, and symbols (Aaker, D.A and Joachimsthaler, E., 2000, p 17).

The newest and most related studies about brand equity have been summarized in below table. All the materials in this section are based on Aaker's model which is a customer-based one. As mentioned before this research is similar work.

scholar	Year	Research goals
Buhrmann , Christopher	2009	In that research, the influences of staff has applied for developing a model for brand equity
Brady, Micheal & Cronin, Joseph	2008	Researchers are examining the role of brand equity as strategies for preventing undesirable effects of unsuccessful activities.
Konecnik , M., and Gartner , W.C.	2007	Proposed model which has been approved by theoretical hypotheses and empirical aspect completes previous studies about target evaluation in tourism perspective.
Yasin, N.M, Noor, M.N, & Mohammad , O	2007	Regression analysis results indicate that the image of origin country has no direct and observable effect on brand equity.
Kayaman , R and Arasli , H.	2007	The article says that hotel managers should have an influence on perceived quality, brand loyalty, and brand awareness in their organizations and on their delivery process through recognizing the relations between customer-based brand equity components.
-Pappu , R., Quester ,P.G., Cooksey , R.W.,	2005	The discussion helps for identifying customer-based brand equity via testing and examining its dimensions.

Kim , H.B. and Kim , W.G.	2005	This article is about development of fundamental aspects of brand equity and its effects on hosting industry, especially luxurious hotels and chain restaurants.
Yoo, B. and Donthu , N.	2002	The purpose of this article is to find the possibility of generalizing brand equity formation process which is resented by Yoo, et al. (2000) in order to recognizing the cultural differentiations between American and Korean samples, and other eastern cultures and languages.
Yoo, B. and Donthu , N.	2001	Developing and validating multidimensional customer-based brand equity.

Ref.: done by author

2.2. Conceptual Model:

In today's perspectives, marketing includes growing customers that means pay attention to customer satisfaction, desired quality, and loyalty and so communicating with them. Organizations try to make loyal customers through performing adequate marketing activities. Hence, personal contacts are more frequent in service industries, loyalty has been considered as an important dimension of brand equity.

Customers' brand loyalty, along with perceived quality of services and brand awareness/association can increase market share and as we know market share has a close relationship with rate of return and interest.

Although great focus of researches is on studying concepts of brand equity dimensions (perceived quality, brand loyalty, and brand awareness/association) for consuming products, these concepts are generally important in service industries, and particularly in financial services. The complicated nature of services is due to some attributes such as intangibility, perishable nature, too much contact with customers, simultaneous producing and consuming, and heterogeneity.

These essential differentiations can cause different approaches in markets. As we mentioned before, this research will study the effects of selected service marketing mix (services, branch location and physical equipments, promotion activities, personnel, and operation and process management) on brand equity dimensions (perceived quality, brand loyalty, and brand awareness/association) and overall brand equity for customers of Agricultural bank in Mazandaran Province.

As shown in above figure, gamma correlation coefficient () indicates the relation of an extrovert latent variable (ξ) and an introvert latent one (η). Beta correlation coefficient (β) shows the relation of an introvert latent variable (η) to another introvert latent one (η), the relation of error variables show with (Ψ) symbol.

Selected marketing mix: with selected marketing mix, we mean services (S), branch location and physical equipments (DE), promotion activities (PR), personnel (P), and operation and process management (PRO). The reason for such selection is experts' emphasis on importance and strong relationship of these factors to brand equity in Agricultural bank services.

Services/products (S): as any kind of industries and markets, banks sell their products too. Financial products such as mortgage loans, savings accounts, banking assignments, car loans, investment counseling, export financial affordance, money changes, and credit cards…

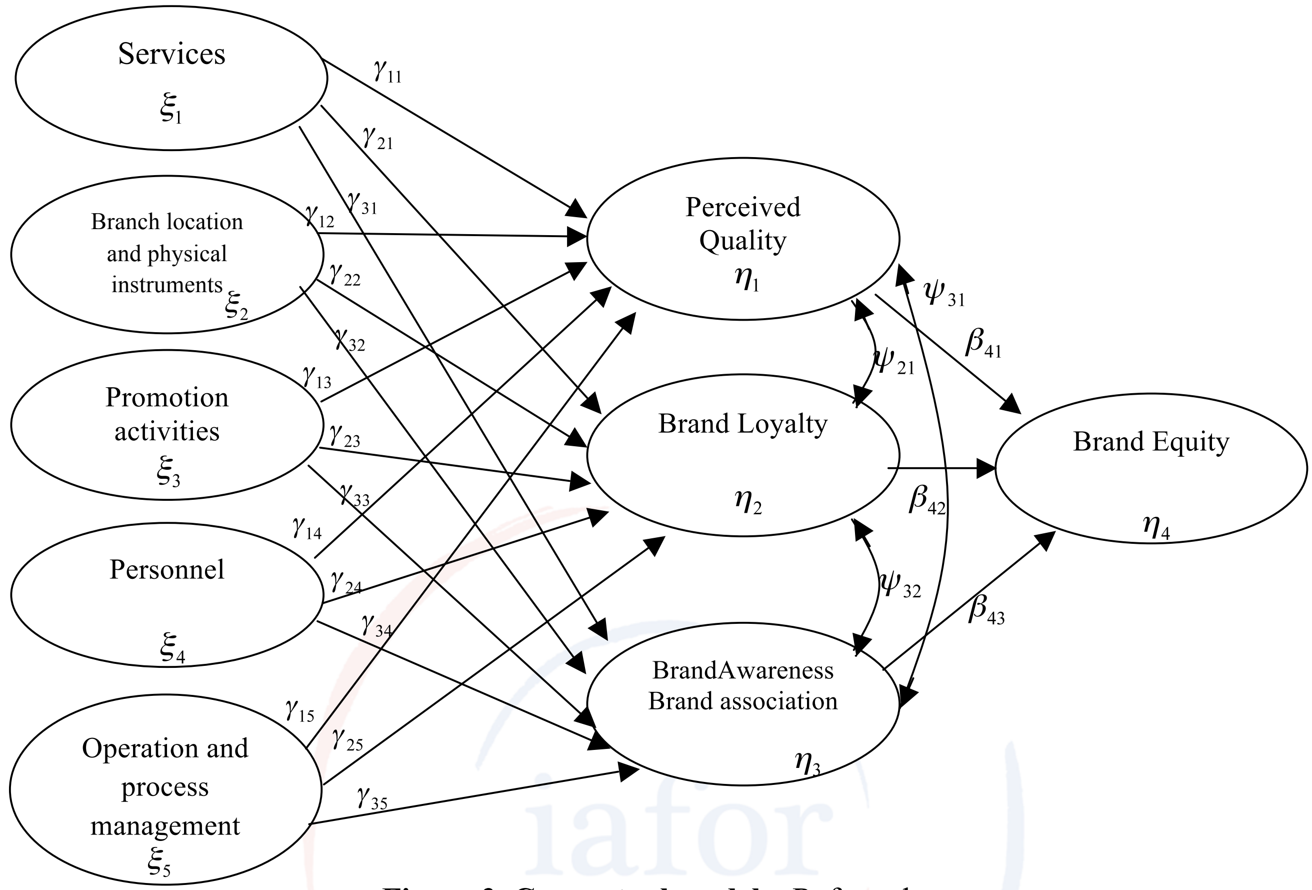


Figure 3. Conceptual model – Ref.: author

Branches locations and physical equipments (PR): the most important factor in banking services is the matter of branches locations, the more the number of branches, and the easier access to them are, the better services presented by banks. Branches equipments can facilitate the services as well.
Promotion activities (PR): a number of activities are done by company to inform customers about product/ service's value and encourage them to purchase it. Companies usually do these activities through advertising in media.
Personnel (P): the personnel of a service company or people who do services are considered as the main marketing elements, because most customers know service's employees as the company.
Operation and process management (PRO): operation management ensures the availability, and constant proper quality of services. The role of this service marketing element is to balance supply and demand. As the services can not been preserved, operational manager should supply all kind of services in emergency or usual situations via professional ways.

2.3. Hypotheses

In this research three main hypotheses have been tested and specified with A, B and C letters. There are subsidiary hypotheses for each main hypothesis.
A: there is a significant relationship between brand equity dimensions (perceived quality, brand loyalty, and brand awareness/association) and brand's total value.
B: there is a significant relationship between service marketing mix and brand equity dimensions.
C: service marketing mix has a significant relationship with brand's total value.
For testing above hypotheses, we should first examine the accuracy of following hypotheses.

Hypothesis	Path	Hypothesis	Path	Hypothesis	Path
A		B5	PRO → QL	B14	P → AA
A1	QL → OBE	B6	S → LO	B15	PRO → AA
A2	LO → OBE	B7	DE → LO	C	
A3	AA → OBE	B8	PR → LO	C1	S → OBE
B		B9	P → LO	C2	DE → OBE
B1	S → QL	B10	PRO → LO	C3	PR → OBE
B2	DE → QL	B11	S → AA	C4	P → OBE
B3	PR → QL	B12	DE → AA	C5	PRO → OBE
B4	P → QL	B13	PR → AA		

Table2. Subsidiary hypotheses

3. Methodology

3-1. research methodology

Regarding to objectives, this study is an applied one, and to data collecting, it is a descriptive survey research, and specifically it is based on structural equation model.

3-2. Statistical Population and Samples

Statistical population in this research comprises all customers (368969 real persons) with checking accounts in ninety four branches of Mazanadaran Agricultural Bank. Samples are 450 persons which were drawn by random sampling in classified branches. The sample size for above mentioned population was determined via Morgan table.

The instruments for collecting data in this study are manual and computer fiches (note cards), interview with bank professionals and questionnaire.

3-3. validity

Questionnaire's validity admitted by professors and experts of R&D department of Agricultural bank. A sample 90 questionnaires pretested and validity of data has been tested by confirmatory factor analysis through SPSS software. For total questionnaire, acquired score is 81.3, and for each dimensions of perceived quality, loyalty, awareness and association, services, branches facilities and dispersal, promotion activities, personnel, operation and process management, and brand equity, scores are 78.2, 85.4, 74, 82.4, 81, 79.5, 83.3, 67.3, 71.4, which are acceptable considering universal standard norms.

3-4. Reliability

Cronbach’s coefficient alpha was used for reliability. This method is used for testing internal concordance of assessment instrument of various attributes. A sample 90 questionnaires pretested and reliability of data has been tested by Cronbach’s alpha coefficient through SPSS software. For total questionnaire, acquired score is 95.1, and for each dimensions of perceived quality, loyalty, awareness and association, services, branches facilities and dispersal, promotion activities, personnel, operation and process management, and brand equity, scores are 78.8, 86.4, 75, 83, 85.8, 78.1, 87.5, 72, and 87.2, which are acceptable considering universal standard norms. Acquired alpha for the designed questionnaire shows an admissible level of reliability.

3-5. Data Analysis

In this research descriptive and inferential statistics have been used for data analysis. Kruskal – Wallis H. test is the expansion of Man Whitney U-test for three or more groups. This test can be considered similar to one-way analysis of variance for non-parametric data. The logic of the test is the same as Man Whitney's U-test. Here we are going to testing whether customer satisfaction of brand equity for different classified branches is different.

3-5-1. Structural Equation Model

One of the strongest and most appropriate approaches for data analysis in social and behavioral science researches is multivariate analysis, because the nature of such studies is multivariate and it cannot been computed by two-way analysis of variance method.
For analyzing data of hypotheses we used Lisrel software and structural equation model.
The main objective here is to finding correlation extent between variables which are related.

4. Analysis

4-1. Structural Equation Model Test

A: Aakers dimensions (perceived quality, brand loyalty, brand awareness/ association) have significant relationship with brand equity.
Hypothesis A1: there is a significant relationship between perceived qualities of services and brand equity.
Based on structural equation model's results: standard trace coefficient equals 0.13 and meaningful number is 1.40, so the above hypothesis is not confirmed, and we realize that data resulted from Iran's service industries (Agricultural bank) is not an exact match of Aaker (1991), Yoo, et al. (2000) researches that means there is no significant relationship between perceived quality of services and brand equity.
Hypothesis A2: Brand loyalty has a significant relationship to brand equity.
Based on path analysis test results (structural equation model): standard trace coefficient equals 0.62 and meaningful number of 6.36, the above hypothesis is confirmed, that means for every one unit of variation in loyalty, we have 0.62 unit of variation in brand equity.
The results of Iran's services market (Agricultural Bank) is an exact match of Aaker (1991), Yoo, et al. (2000) researches that means there any variation in loyalty can affect brand equity, so planning for reinforcing customers perceived economical value which is the result of their tendency toward gaining more profit, can affect their loyalty.
Hypothesis A3: Brand awareness/association has a significant relationship with brand equity.
Based on structural equations model's results: standard trace coefficient equals 0.03 and meaningful number is 0.42, so the above hypothesis is not confirmed, and we realize that the results of Iran's services market (Agricultural Bank) is not an exact match of Aaker (1991), Yoo, et al. (2000) researches that means there is no significant relationship between perceived quality of services and brand equity.
B: There is a significant relationship between service marketing mix and Aaker's dimensions.
Hypothesis B1: there is a significant relationship between presented services and perceived quality of a brand.
Iran services industry evidences indicate that any variation in presented services has an impact on perceived quality of a brand.
Hypothesis B2: branch location and equipments has a significant relationship with perceived quality of a brand.

Based on structural equations model's results: standard trace coefficient equals -0.07 and meaningful number is -1.05, so the above hypothesis is not confirmed, and we realize that the results of Iran's services market (Agricultural Bank) is not an exact match of previous studies about satisfaction measurements for services quality (Parasuraman perspective**)**, consists of physical equipments, tools and machinery and also Yoo, et al. (2000) researches that means the branch location and equipments has no significant relationship to perceived quality of a brand.

Hypothesis B3: there is a significant relationship between promotion activities and perceived quality of a brand.

Based on structural equations model's results: standard trace coefficient equals -0.07 and meaningful number is -0.68, so the above hypothesis is not confirmed, and we realize that the results of Iran's services market (Agricultural Bank) is not an exact match of Yoo, et al. (2000) researches, that means there is no significant relationship between promotion activities and perceived quality of a brand.

Hypothesis B4: personnel abilities for presenting services have a significant relationship to perceived quality of a brand.

Iran services industry evidences indicate that any variation in personnel abilities for services has an impact on customers' perceived quality of a brand.

Hypothesis B5: the quality of operational and process management has a significant relationship to perceived quality of a brand.

Based on structural equation model's results: standard trace coefficient equals -0.31 and meaningful number is -2.11, so the above hypothesis is confirmed, that means the results of Iran's services market (Agricultural Bank) is an exact match of previous studies about some measurements for services quality (Parasuraman perspectives, 1996**)**, consists of communication and giving information, speed and proper services, and indicates that the quality of operational and process management has a significant relationship to perceived quality of a brand.

Hypothesis B6: there is a significant relationship between services and brand loyalty.

In other words customers perceived economical value leads to their loyalty and so it confirms the importance of financial policies for customers' loyalty.

Hypothesis B7: Branch location and equipments have a significant relationship to brand loyalty.

Based on structural equations model's results: standard trace coefficient equals -0.13 and meaningful number is -1.08, so the above hypothesis is not confirmed, and we realize that the results of Iran's services market (Agricultural Bank) is not an exact match of Yoo, et al. (2000) researches that means there is no significant relationship between branch location and equipments and brand loyalty.

Hypothesis B8: There is a significant relationship between promotion activities and brand loyalty.

Based on structural equations model's results: standard trace coefficient equals -0.15 and meaningful number is -1.38, so the above hypothesis is not confirmed, and we realize that the results of Iran's services market (Agricultural Bank) is not an exact match of Yoo, et al. (2000) researches that means there is no significant relationship between brand promotion activities and brand loyalty.

Hypothesis B9: Personnel abilities for services have a significant relationship with brand loyalty.

Based on structural equation model's results: standard trace coefficient equals -0.12 and meaningful number is -1.67, so the above hypothesis is not confirmed, that means the results of Iran's services market (Agricultural Bank) is not an exact match of previous studies about some measurements for services quality consists of responsibility, commitment, good and lawful behavior, which affects customers' loyalty and indicates that the personnel abilities for services has a no significant relationship brand loyalty.

Hypothesis B10: The quality of operational management for services has a significant relationship to brand loyalty.

Based on structural equation model's results, there is a negative correlation between the quality of operational management for services and brand loyalty, standard trace coefficient equals -0.28 and meaningful number is 2.05 that mean for every one unit of variation in the quality of operational management for services, we have -0.28 unit of variation in loyalty. Iran's services industry evidences indicate that any variation in the quality of operational management for services has an impact on brand loyalty.

Hypothesis B11: Presented services have a significant relationship to brand awareness/ association.

Based on structural equation model's results, there is a positive correlation between presented services and brand awareness/association, standard trace coefficient equals 1.05 and meaningful number is 8.10 that mean for every one unit of variation in the presented services, we have 1.05 unit of variation in brand awareness/association. Iran's services industry (agricultural Bank) evidences indicate that any variation in presented services has an impact on brand awareness/ association.

Hypothesis B12: Branch location and equipments have a significant relationship to brand awareness/ association.

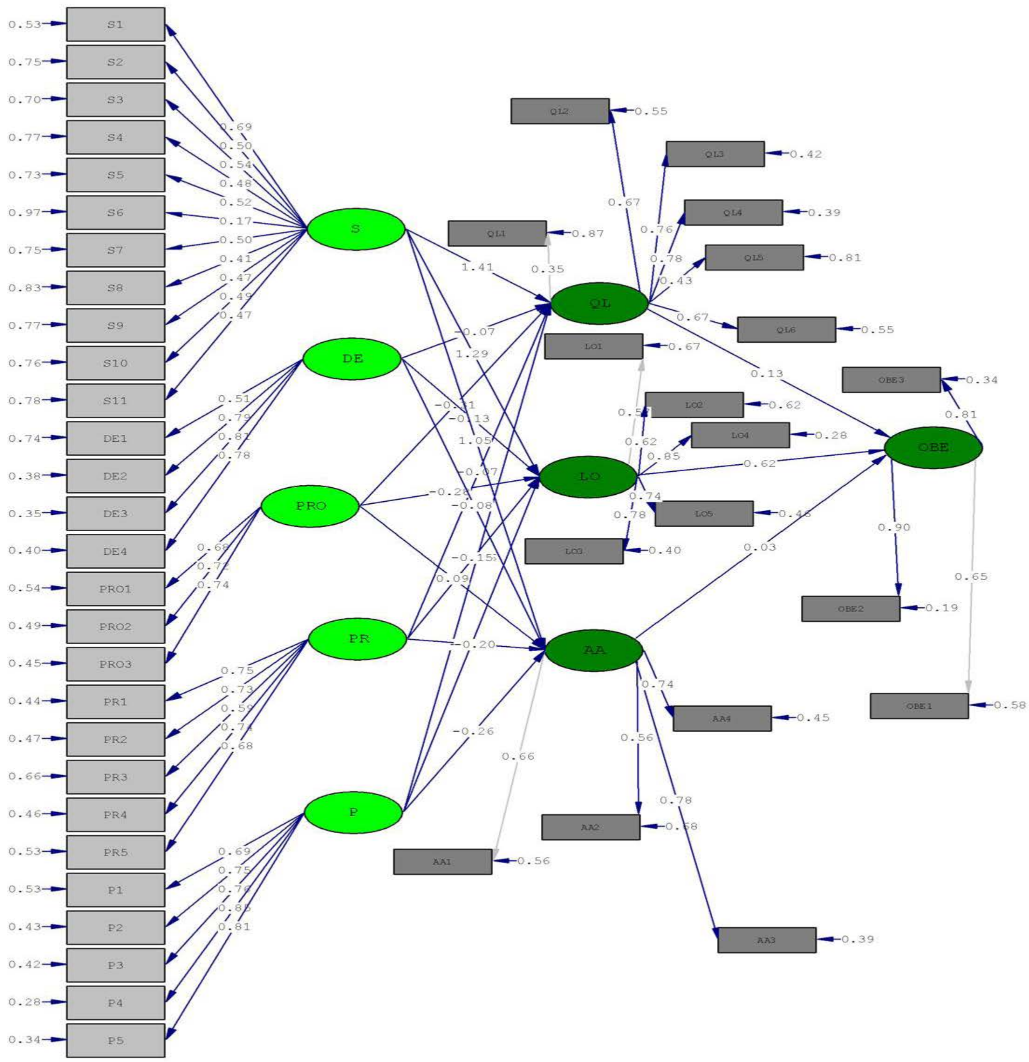
Based on structural equations model's results: standard trace coefficient equals -0.08 and meaningful number is -1.06, so the above hypothesis is not confirmed, and we realize that the results of Iran's services market (Agricultural Bank) is not an exact match of Yoo, et al. (2000) researches that means there is no significant relationship between Branch location and equipments and brand awareness/ association.

Hypothesis B13: Promotion activities have a significant relationship to brand awareness/ association.

Based on structural equations model's results: standard trace coefficient equals -0.20 and meaningful number is -1.81, so the above hypothesis is not confirmed, and we realize that the results of Iran's services market (Agricultural Bank) is not an exact match of Yoo, et al. (2000) researches that means there is no significant relationship between promotion activities and brand awareness/ association.

Hypothesis B14: Personnel abilities for services have a significant relationship to brand awareness/ association.

Iran's services industry evidences indicate that any variation in the personnel abilities for services has an impact on brand awareness/ association.



. **Figure4.** Standard Estimation of Model
Chi-square=2369.6, df=961, p-value=0.00000, RMSEA=0.058

Hypothesis B15: The quality of operational management for services has a significant relationship to brand awareness/ association.
Based on structural equations model's results: standard trace coefficient equals -0.09 and meaningful number is 0.64, so the above hypothesis is not confirmed, and we realize that the results of Iran's services market (Agricultural Bank) is not an exact match of previous studies about some measurements for services quality consists of communicating paths, giving information…, which affects customers' awareness and association, and indicates that the quality of operational management for services has no significant relationship to brand awareness/ association.

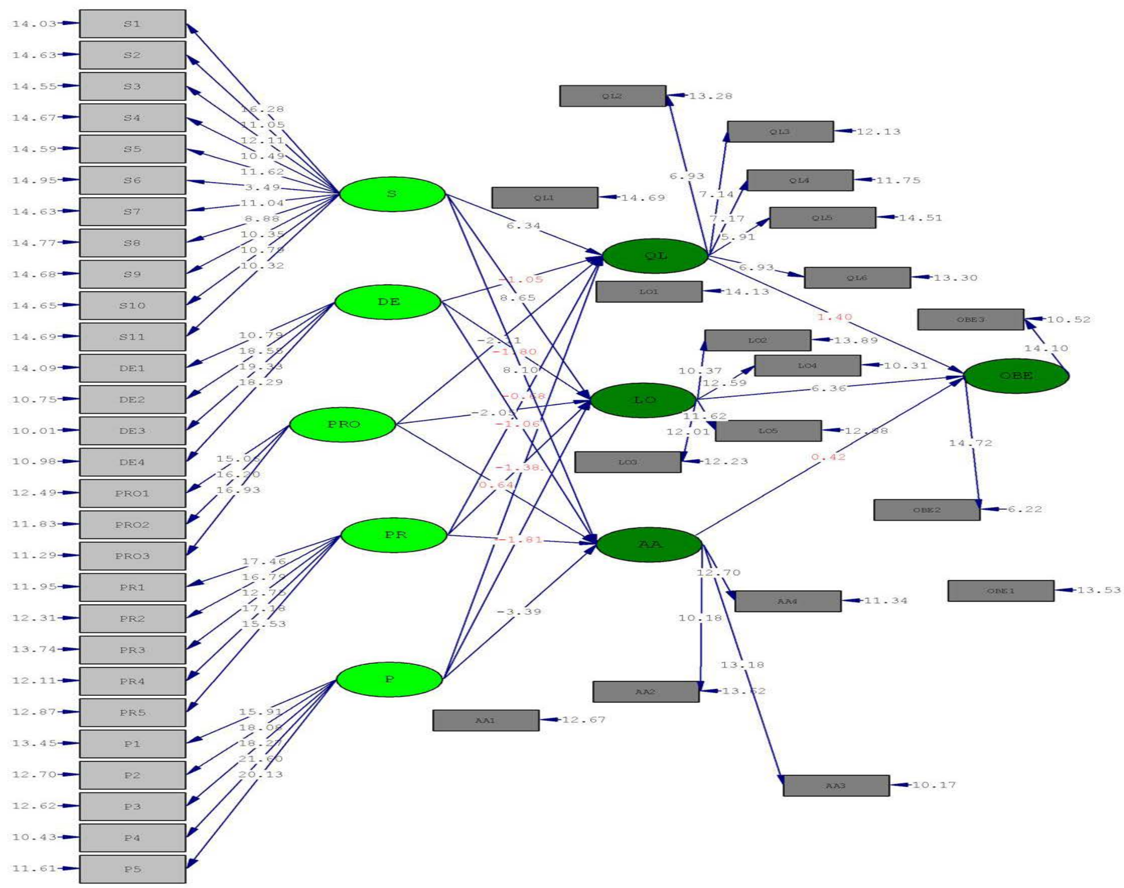


Figure5. Meaningful numbers (T-values)
Chi-square= 2369.60, df=961, p-value=0.00000, RMSEA=0.058

C: There is a significant relationship between the services marketing mix and brand equity.

Hypothesis C1: Presented services have a significant relationship with brand equity.

Iran's services industry (agricultural Bank) evidences indicate that any variation in presented services has an impact on brand equity.

Hypothesis C2: Branch location and equipments have a significant relationship with brand equity.

The main reason for this matter is very similar financial strategies used by many companies which create no more competitive advantages.

Hypothesis C3: There is a significant relationship between promotion activities and brand equity.

Evidences show that the bank should revise promotion activities and direct them toward creating more values for customers. Results indicate that previous activities had no efficiency for creating brand awareness/association.

Hypothesis C4: Personnel abilities for services have a significant relationship with brand equity.

Based on structural equation model's results, the correlation between personnel abilities for services and brand equity, is not confirmed because, Personnel abilities for services have no relationships with brand loyalty which is the only variable related to brand equity.

Hypothesis C5: The quality of operational management for services has a significant relationship to brand equity.

Based on structural equation model's results, there is a positive correlation between the quality of operational management for services and brand equity.Iran's services industry (agricultural Bank) evidences indicate that any variation in the quality of operational management for services has an impact on brand equity.

4-1-1. Regression Equations:

Among effecting variables on perceived quality, services variable with standard indirect trace coefficient of 1.41 has the highest impact on perceived quality in comparison with other variables. The coefficient means for every one unit of variation in services, we have 1.41 unit of variation in perceived quality. Numbers in parentheses show T statistic or significant figures.

QL= 1.41*S - 0.074* DE - 0.073 * PR – 0.31* PRO – 0.26* P, ERRORVAR = 0.14, R2 =0.86
(6.34) (- 1.05) (- 0.68) (- 2.11) (-3.21) (2.62)

Coefficient of determination 0.86 means that three variables of services, process and personnel together with variance error factor explain 86 percent of perceived quality variations.

Considering results, among effecting variables on loyalty, services with standard indirect trace coefficient of 1.29 has the highest impact on loyalty in comparison with other variables. The coefficient means for every one unit of variation in services, we have 1.29 unit of variation in loyalty. Numbers in parentheses show T statistic or significant figures.

LO= 1.29 *S – 0.13 * DE – 0.15 * PR – 0.28 * PRO – 0.12 * P, ERRORVAR = 0.29, R2 =0.71
(8.65) (- 1.80) (- 1.38) (- 2.05) (-1.67) (5.01)

Coefficient of determination 0.71 means that two variables of services and process together with variance error factor explain 71 percent of loyalty variations.

Lisrel software outputs indicate that among effecting variables on awareness/ association, services with standard indirect trace coefficient of 1.05 has the highest impact on awareness/ association, in comparison with other variables. The coefficient means for every one unit of variation in services, we have 1.05 unit of variation in awareness/ association. Numbers in parentheses show T statistic or significant figures.

AA=1.05 *S –0.076 * DE – 0.20* PR + 0.089 * PRO –0.26 * P, ERRORVAR= 0.40, R2 =0.60
(8.10) (- 1.06) (- 1.81) (0.64) (-3.39) (5.91)

Coefficient of determination 0.60 means that two variables of services and personnel together with variance error factor explain 60 percent of awareness/ association variations.

Finally, among effecting variables on brand equity, loyalty with standard indirect trace coefficient of 0.62 has the highest impact on brand equity in comparison with other variables. The coefficient means for every one unit of variation in loyalty, we have 0.62 unit of variation in brand equity. Numbers in parentheses show T statistic or significant figures.

OBE = 0.13 * QL + 0.62 * LO + 0.029 * AA, ERRORVAR = 0.45, R2 = 0.55
(1.40) (6.36) (0.42) (6.70)

Coefficient of determination 0.55 means the variable of loyalty together with variance error factor explains 55 percent of brand equity variations.

4-1-2. Data Sensitivity Test

In this section, we are going to restrict empirical examinations and data sensitivity tests. In other words, we want to know, we have the same results, if questionnaire data are divided into smaller and more specialized parts.

So, regarding with bank's specialized activities, we arrange data of samples gathered from replies to this question that: in your opinion how specialized is the bank's activities? Descriptive statistics show that 37 percent of repliers (167 people) recognized the bank's activities as specialized one.

Considering new data at this stage, we run the proposed model in Lisrel software again, in order to find if bank's activities become more specialized, it will have a considerable impact on brand equity.

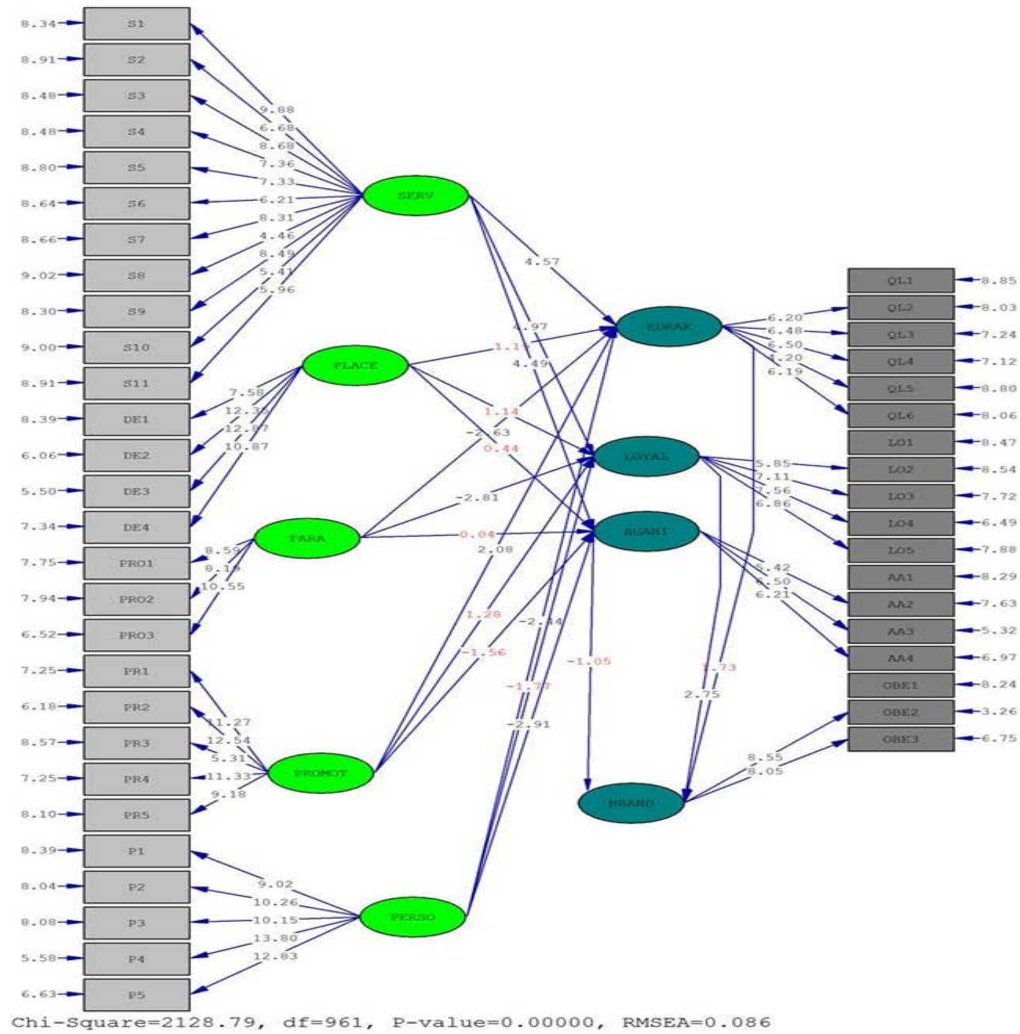


Figure6. Significant figures (t- values)

The results of most previous hypotheses are confirmed except one. Hypothesis no.6 (promotion activities have a significant relationship with perceived quality of a brand) affects the primary conclusion, in other words this hypothesis which was not confirmed at real situation for bank activities, would confirm if the activities become more specialized from the customers point of view. Confirmed hypothesis no.6 is a match of Yoo, et al. (2001) researches and with regard to results, if the bank's activities become more specialized, for every one unit of variation in promotion activities, we have 0.44 units of variations in perceived quality of services. Significant figures and relationships in structural model based on sensitivity analysis have led to confirmation of hypothesis no.6 shown in figure 6.

4-2. Kruskal – Wallis H. test

The outputs indicate that chi-square is equal to 5.003 and sig=0.174 is not significant because significance level of 0.95 is more than 0.05, so the null hypothesis (in different classified branches, customers' satisfaction is not different) is confirmed.

5. Discussions

In this research we used the concept of relation–based banking for presenting services. Based on research's plan, service marketing components and communicating patterns presented by the bank, only motivate customers' economical and emotional values which affect their loyalty. The loyalty finally affects brand equity. Results suggest that, no other significant relationships between other mediator variables such as perceived quality of services and brand awareness/association and brand equity have been observed. Despites, no relationships observed between some marketing mix components such as branch location and equipments and promotion activities which are considered as powerful tools of marketing mix and mediator variables (perceived quality, brand awareness/ association, and loyalty), some components such as services have relationship with three mediator variables (perceived quality, brand awareness/ association, and loyalty), and others have relationships to one or two mediator variables too. Regarding hypotheses testing, differentiation of customers' satisfaction in quadruplet branches of Agricultural bank, rejects the hypothesis that branch's kind affects customers' satisfaction.

5-1. Proposed Model

Different models with assumption of data continuity and possibility of using Likert scale have been tested through structural equation model test by Lisrel software. The following proposed model has been tested in Iran - as a developing country where the most major financial companies are still managed by government, but gradually moving towards privatization- and made significant relationship between marketing mix and brand equity dimensions. Three new relationships have been suggested including:

Branch location and physical equipments → brand equity

brand awareness/association → Brand loyalty

Services → brand equity

Branch location and physical equipments: the main transactions are done in branches. The earliest description of bank (brand equity) is its physical features that show the bank's attitude toward customers, counters design, convenient places for sitting, colors and painting, environmental designs are the main requirements for location. The direct relation of brand location and physical equipments with brand equity which is a kind of attitude toward customers has shown in the model.

Brand awareness/association: creating an image is essential for attracting and maintaining customers. So satisfaction and creating image are related processes (Johnson et al., 2001; Helgesen and Nesset, 2007, Gupta and Prisch, 2008).

Keaveney and Hunt (1992) declared that: the mind image of a small company is built through class oriented theory. It means that when a customer visits a bank, an image forms in his mind. He tries to make a comparison with his previous experiences of banks. Sirgi and sameli (1989), Kayaman, R and Arasli, H. (2007), reported a positive relationship between brand image and loyalty as a sample. On the other hand, they shown the relationship of brand image and loyalty is modified by customers evaluation and judgments.

Services: Wang, et al. (2003) believed that supplying high quality products and services, increases a business reputation (brand equity) and facilitates customer maintenance and leads to attract new customers by oral propagation and improves financial operation and profit.

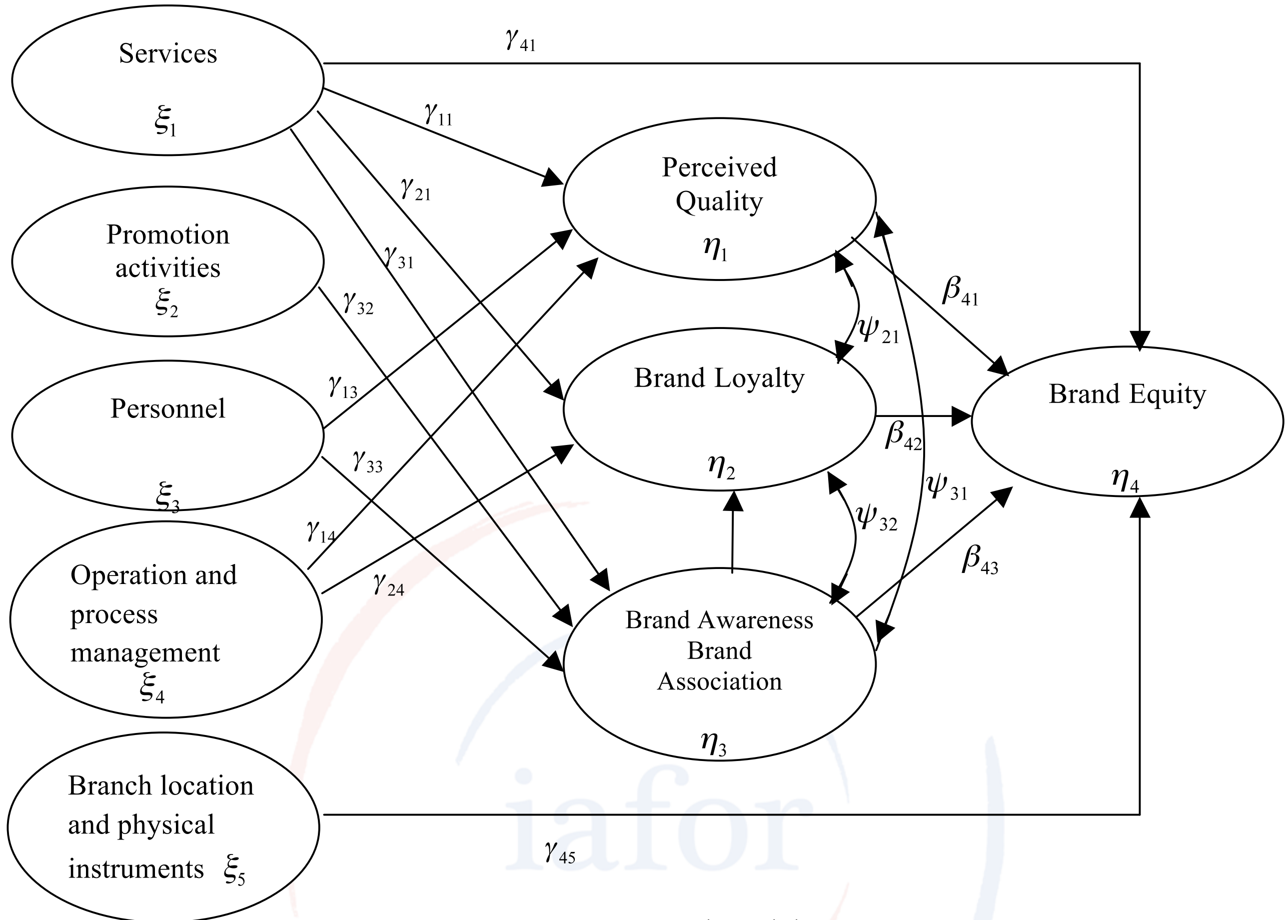


Figure7.proposal model

In new banking activities, the banks initiate one-on-one and data base marketing for identifying customers and recognizing their needs. One-to-one marketing means creating and managing a one-to-one relationship with customers. Data base technology makes the possibility of tracing each customer's information. Though banking services can be easily imitated and the advantages are faded soon, the variety of services and considering customers needs and desires can create a good competing situation. Direct relationship between services and brand equity proposed in the new model shows this fact and suggests that if the banks continually invest in service initiations, they can precede competitors.

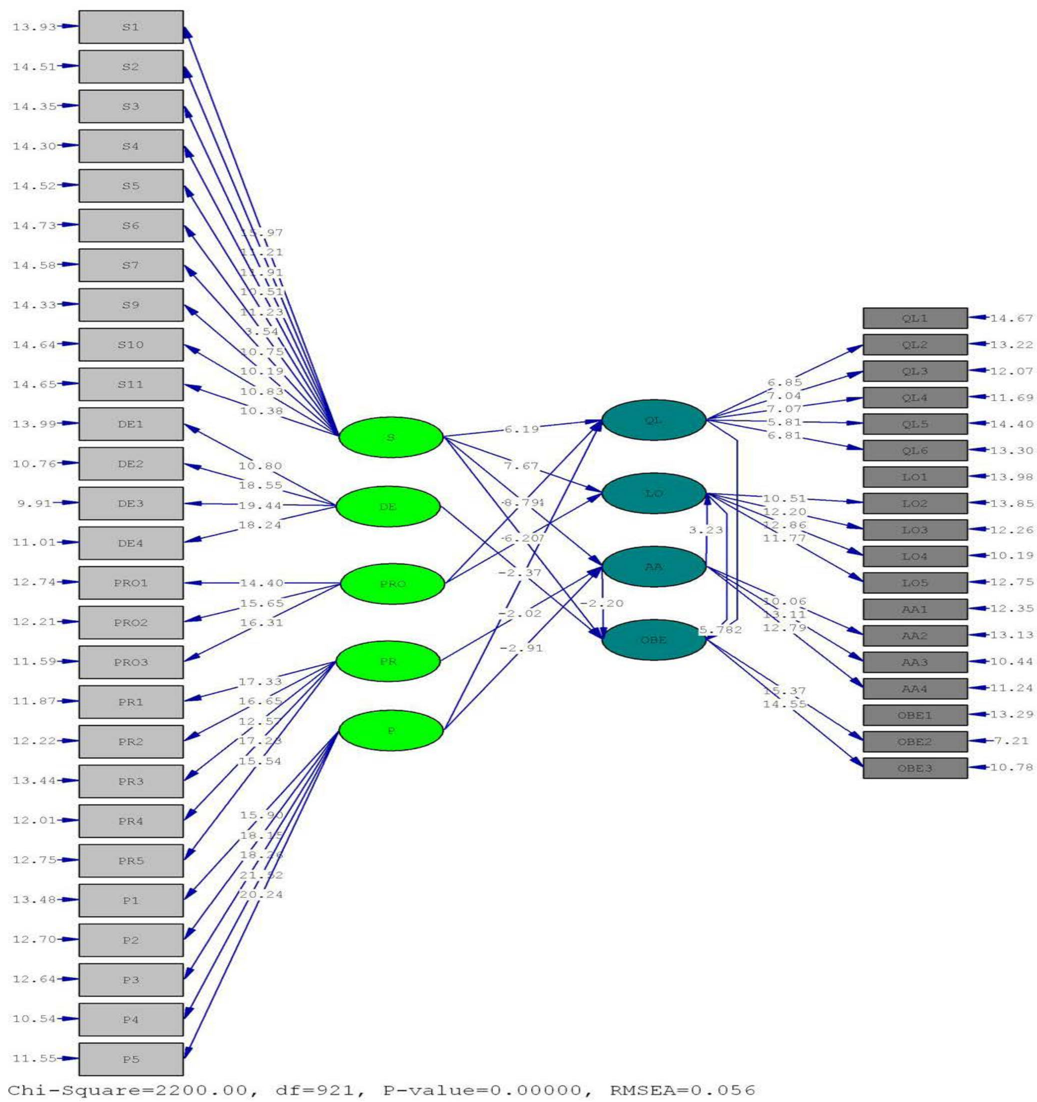


Figure8. Significant figures (t-value)

As shown in above figure, gamma correlation coefficient () indicates the relation of an extrovert latent variable (ξ) and an introvert latent one (η). Beta correlation coefficient (β) shows the relation of an introvert latent variable (η) to another introvert latent one (η), the relation of error variables show with (Ψ) symbol.

5-2. conclusion and proposition

Services marketing mix and creating brand equity

Services: there are customers who use bank services in order to pay fewer fees and gain more profit.. Such customers find their bank through analyzing different bank services and making comparison between them. Some customers prefer to acquire more social credit and advantages in their bank. Agricultural bank managers should consider such customers and develop friendly and intimate relationships as their priority in order to maintaining them. Easy going customers are another group which has high loyalty. This loyalty is as a result of high costs of shifting, the bank imposed on them. Through structural software and programs such as consolidation, data mining, and slicing, prepares reports and special systems for VIP members, increase their bank changing costs. In this case, some advantages with value added are available for customers.

Branch location and equipments: because all banks in Iran have the same strategy for branch location and kind of equipments, the effect of these two factors is less than others. The location and methods in which services are sold can deeply affect trade name and sales ultimate success and create value. Channel strategy for creating brand name, is dealing with designing and managing direct and indirect channels for brand awareness and associations.. On the other hand, indirect channels such as ATM, internet, cell phones, short message services, and telephone bank- in this research have a little share of channels- can also support brand name. The banks should notice that the possibilities and competencies of direct and indirect channels may unified effectively for enhancing brand equity in long time.

Promotion activities: New demanded services should plan and present based on marketplace information. Bank advertising divided in two categories: brand-making and service-based advertising. In brand-making advertising, the addressee is mainly the whole market and the objective is to establish brand name in whole market mind and banking system. Despite of Agricultural bank's mission and huge amount of facilities and credits for subjects which are prone to brand making, little attention has been paid for such advertising. Some of these subjects are: food safety supply, environment improvement and protecting, social responsibility, making jobs for agricultural industry…

Today is the age of electronic media in which see a revolution in marketing rules especially in philosophy of marketing. From marketing perspectives, today is the age of attracting and involving customers via electronic media and websites. The ultimate objective is developing a self service possibility for customers and membership, and not like TV advertising which is usually unwelcomed by audiences. With such a universal technological space, the banks should be more active in electronic marketing and promotion.

Personnel: increasing competition in Iran's banking system with privatization of some governmental ones and establishment of new private banks, have made it difficult for governmental banks to attract new customers or maintain existing ones. Though selecting employees as the brand's identity elements are very important for creating value, but supporting marketing activities for marketing mix and communications create such an identity. Supporting tactics and approaches for recognizing customers' needs with competitive forces are issues which financial marketers should notice.

Operation and process management: in new banking system, great attention has been devoted for operation and process management, both for physical and electronically processes. It is essential to invest in research and development of new services and process, particularly in brand name and symbol which the main association is their traits and services advantages.

5-3. research restrictions

The main restrictions for this research are Shortage for references and resources, samples did not spend enough time to answer, is no standard questionnaire, long time for visiting samples(owners of checking accounts).

References:

[1] Aaker , D.A.(2004a), **Brand Portfolio Strategy . Creating Relevance, Differentiation, Energy, Leverage and Clarity.** New York, Free Press.

[2] Aaker , D.A.(2004b) , **" Leveraging the Corporate Brand"** , California Management Review,46(3), 6-18.

[3] Aaker , D.A and Joachimsthaler , E. (2000) , **Brand Leadership** , London , Free Press.

[4] Aaker , D.A. (1996a) , **" Measuring Brand Equity Across Products and Markets "** , California Management Review, vol . 38 no.3,pp 102-20.

[5]Aaker,D.A.(1996b)."**Building Strong Brand",** free press. New York. NY.

[6] Aaker,D.A.(1992),**" The Value of Brand Equity "** , Journal of Business Strategy , Vol.38 No.3, pp.27-32.

[7] Aaker,D.A.(1991),"**Managing brand equity: capitalizing on the value of a brand name**" ,free press, New York, NY.

[8]Aaker , D.A.(1989) , **"Managing Assets and Skills : A Key to The Sub stainable Competitive Advantage"** , California Management Review.

[9]Bahreini Nezhad, Manijeh**," Study and Explanation of Brand name Concept from customers Percpectives and Introducing Different Approaches for Creating Brand name"** , Business Studies Magazine, (2008), no. 30, pp 71-88.

[10]Barwise,p.(1993)."**Brand equity: snark or boojum?**" international jurnal of research In Marketing, vol.10 march, pp.93-104.

[11]Brady , M.K. , Cronin Jr, J.J. , Fox , G.L. and Roehm , M.L. ,(2008) , **" Strategic to Offset Performance Failure: The Role of Brand Equity** ", Journal of Retailing, Vol . 84 NO.2, PP. 151-164. -Burmann , C. , J-Benz , M. and Riley , N. (2008) , **" Toward An Identity – Based Brand Equity Model ",** Journal of Business Research, Vol .62, pp. 390- 397.

[12]Farquhar,P.H.(1989),"**managing brand equity**", marketing research , September ,pp. 24-34.

[13]Ghafari, Ashtiani, P. 2008, **"Presenting a Pattern for Evaluating Effecting Factors on Positive Oral advertisements in Services Market- Case Study: Arak Banks"**, PHD Thesis, Azad University, Olum Tahghighat, pp 44-102.

[15]Ghasemi, J., Salehian, A. 2005, "New Marketing Approaches and Revolutions, Challenges and Solutions in Banking Marketing", Agricultural Bank Magazine, no.10, new edition.

[16]Gupta , S., Pirsch , j 2008. **"The influence of retailers corporate social responsibility program on reconceptualizing store image".** Journal of Retailing and Consumer Services 15, 516-526.

[17]Helgesen , Ø., Nesset , E., 2007**." Images, satisfaction and antecedents: drivers of student loyalty? A Case Study of a Norwegian University College".** Corporate reputation review 10(1), 38-59.

[18]Hosseini, MehdizadeAshrafi, (2009), "Research Method in Human Sciences",Yekan ublication.

[19]Johnson M., Gustafsson A., Andteassen T., Lervik L., Cha J, (2000) **;" The evolution and future of national customer satisfaction index models "** , Journal of Economic Psychology.-Kayaman , R and Arasli , H.(2007), **" Customer- Based Brand Equity : Evidence from The Hotel Industry "**, Managing Service Quality, Vol.17 No.1 , 2007. Pp.92-109. ٢٢

[20]Keller,K.L.(2003). " **strategic brand management ; building , Measuring and Managing brand equity**" , prentice – hall ,2nd ed ,engle wood cliffs, Nj ,pp.48.

[21]Keller, K.L.(1993)." **Conceptualizing, measuring and managing customer- base Brand Equity**", journal of marketing , Vol .57 January , pp.1-22.

[22]Kim, H.B. and Kim, W.G. (2005), **"The Relationship between Brand Equity and Firm Performance in Luxury Hotels and Chain Restaurants.**

[23]Khaki, Gholamreza, (2000), **“Research Methods in Management”** Tehran, Azad University Publication.
[24]Konecnik , M., and Gartner , W.C. , (2007), **" Customer- Based Brand Equity for a Destination “,** Annals of Tourism Research, Vol . 34 No.2, pp. 400-421.
[25]Myers, A. (2003), **" Managing Brand Equity: a Look at The Impact of Attributes "** , Journal of Product & Brand Management , Vol.12 Nos.1,pp.39-51.
[26]Oliver, R.L. (1997), **"Satisfaction: A Behavioral Perspective on the Consumer”,** McGraw-Hill, New York, NY.
[27]Pappu , R., Quester ,P.G., Cooksey , R.W., (2005) , **" Consumer-Based Brand Equity : Improving the Measurement – Empirical Evidence “,** Journal of Product & Brand Management, 14/3, 143-154.
[28] Shocker, A.D., Srivastava ,R.K. and Rueckert , R.W.(1994) , " **challenges and Opportunities Facing brand Management: an introduction to the special issue**" , Journal of marketing research, vol.31,may,pp.149-158.
[29] Vazquez, R., Del Rio, A.B. and Iglesias, V.(2002), **" Consumer-Based Brand Equity: Development and Validation of a Measurement instrument"**,Journal of Marketing Management , Vol. 18 Nos.1/2,pp.27-49.
[30] Wood, L.M.(2000) , **" brand and brand equity : definition and management** " , Management decision ,Vol, 3819 , pp.662-669.
[31] Yasin , N.M, Noor, M.N, Mohammad , O.(2007). **“Does image of Country-of-origin matter to Brand Equity ?"** , Journal of Product & Brand Management ,16/1(2007)38-48.
[32] Yoo , B . and Donthu , N.(2002) , **" Testing Cross-Cultural Invariance of the Brand Equity Creation process "** , Journal of Product & Brand Management , Vol . 11 No. 6 , pp. 380-398 .
[33] Yoo , B . and Donthu , N.(2001) , **" Developing and Validating a Multidimensional Consumer- Based Brand Equity scale "** , Journal of Business Research , 52(1) , 1-14.
[34] Yoo,B.,Donthu,N.and Lee, S.(2000)," **An examination of selected marketing mix Elements and brand equity** " , Journal of the Academy of marketing science , Vol. 28No.2,pp.195-211.
[35] Zeithamal , V.A. (1988) , " Consumer Perception of Price , Quality , and Value : a Means-End Model and Synthesis of Evidence " , Journal of Marketing , Vol .52 No. 3,pp. 2-22.

An Empirical Investigation on Firms' Proactive and Passive Motivation for Bribery: Evidence from China

Abstract

One of the most important concerns for doing business in emerging markets is the bribery issue. Based on the resource dependence theory and anomie theory, this research identifies the resource conditions (e.g., general and task environmental conditions) as firms' proactive motivation to bribe, whereas the perceived institutional environment (e.g., crime and corruption conditions) as firms' passive motivation to bribe. We use the data from 2002 World Business Environment Survey, collected by the World Bank, to investigate the mechanisms of firms' bribery behaviors in the world's largest emerging market, China. The results from statistical analyses show that the unsatisfactory general and task environmental conditions may encourage firms to bribe to compete for better resources and opportunities. The institutional environment conditions such as the security expenditure and anomie climate may make firms perceive bribery as a common phenomenon and thus firms bribe. This research provides new insights to better understand business bribery behavior in China. We also suggest some managerial implications and guidelines for policy making from the findings of this research.

Key Words: Bribery, Proactive Motivation, Resource Dependence Theory, Passive Motivation, Anomie Theory

Introduction

One of the most important concerns for doing business in emerging markets is the bribery issue. Business bribery increases the costs of doing business in emerging markets (Wu, 2009). It is estimated that corruption adds 5% to the costs of doing business in Asia (Kaar, 1995). Therefore it is very important to understand the bribery behaviors in emerging markets. Most research to date examines bribery from the perspective of macro environment conditions such as national culture (e.g., Fritzsche, 2000; Sanyal, 2005), social norms (e.g., Powpaka, 2002), and cross-national contexts (e.g., Cullen et al., 2004; Chen et al., 2008). However, the roles of institutional environment and task environment are left unexamined in the literature. The institutional theory emphasize the important profound influence of institutional environment in shaping an organization's legitimacy and performance (e.g., Meyer and Rowan, 1977; Scott, 1987; Zucker, 1987). And the economic and strategic approaches call the attention to the organization's task environment where the organizations compete to acquire and control scarce resources in order to survive (Pfeffer and Salancik, 1978). Following the logics on these two perspectives, we attempt to address this research void and argue that these environment conditions actually help explain the different motivation for firms to bribe in the context of emerging market.

Firms' strategic decision making is suggested as the pivotal result of the alignment between organizations and their environment (Bourgeois, 1980). In this vein, firms' bribery behaviors also result from the alignment of organizations and their environment. Therefore, we should take environment into account in our research in order to examine the motivation of the firm bribery as a strategy. The resource dependence theory accentuates the importance of the interactive relationship between firm and environment in terms of resources. Moreover, this theory investigates the proactive role of firm in dealing with the environment. The anomie theory, from another perspective, lays emphasis on the social and group influence for firm in the social environment, and further sheds light on the firm's passive following behaviors. We thus adopt theoretical reasoning from the resource dependence theory and the anomie theory to analyze the firm's bribery behavior. Based on these two theories, we argue that the resource conditions motivate firm to bribe proactively and the crime institutional conditions make firm bribe passively. The resource dependence theory proposes that firms make strategies in order to seek resources in the environment. While the anomie theory argues that the unethical firm behaviors are actually influenced by the institutional environment.

The resource dependence theory describes firms' dependence on the environment for resources. It is very likely that a firm would experience the constraints of its environment, including its general and task environmental factors. According to resource dependence theory, a firm should act proactively in response to the environment. If the environmental conditions for firm are not satisfactory such that firms cannot obtain valuable resources via legal approaches, it is very likely that firms would like to gain access to these resources via illegal approaches such as bribery. Therefore in emerging markets where the opportunity to access to resources is not equal, firms bribe to avoid or reduce taxes, secure public procurement contracts, bypass laws and regulations, or to block the entry of potential competitors into desirable markets (Powpaka, 2002; Rose-Ackerman, 2002).

In addition, the institutional environmental situations would also influence firm bribery behaviors. In the environment where corruption and bribery are considered as normal phenomenon, firms may have no other choice but to give gifts and pay informal payments for government services they are in fact entitled to. Thus the anomie theory provides another perspective to examine the motivation of firm's bribery behavior. The anomie theory describes the breakdown of social norms and values as a common phenomenon in a society (Messner and Rosenfeld, 1997), because people have no moral qualms about choosing any means necessary to achieve their goals (see Cullen et al., 2004, pp.411-2). Therefore, anomie theory can help explain the bribery behaviors in emerging markets where bribery is a common phenomenon. That is, managers tend to normalize their anomie behaviors such as bribery where crime and corruption are assumed normal in the society.

In this research, we test our theoretical hypotheses with data from the World Business Environment Survey in the year of 2002. We apply logistic regression model to examine our theoretical models. The results support our theoretical hypotheses. We find that factors suggested by the resource dependence theory (i.e., the investment climate and the relationship with government), have significant impacts on firms' bribery behaviors. Meanwhile, factors suggested by the anomie theory such as the security expenditure and anomie behavior climate also significantly influence firms' bribery behaviors. The findings also provide some new insights and managerial implications for firms as well as the policy makers in emerging markets. These implications are provided in a later section.

The rest of this article is organized as follows. We first review the existing literature on resource dependence theory and anomie theory. Then we propose testable hypotheses based on the theoretical foundation. Following that, we conduct empirical analyses to test the hypotheses. We discuss the theoretical contributions and managerial implications, and conclude with the limitations and directions for future research.

Theoretical Background and Hypotheses Development

Firm strategy can be viewed as the alignment of organization-environment (Rice 1963), and this alignment process has been heavily emphasized in both the business policy and organization theory literature (cf. Bourgeois, 1980). Literature on business policy provides a perspective that views strategic management as a proactive or opportunistic agent of the firm in the environment (Hatten et al., 1978; Mintzberg, 1972). This view emphasizes the proactive motivation of firm strategy. This proactive motivation refers to the propensities of firm to seek out or avoid certain kinds of stimuli, and these propensities, in return, influence behavior and are major determinants of performance (cf. Katzell at al., 1990). The proactive motivation of firm strategy towards the environment would prompt the firm to take control and bring about the changes to improve the firm strategies and their fit with the environment (Parker et al., 2010). And this proactive motivation performs more effective in the emerging market where the institutional environment is immature (Griffin et al., 2007). The firms have to act proactively to do something to avoid the uncertainties and get the rewards (resources) from the environment to survive. However, the organization theory, from another angle, proposes a more reactive stance by viewing the environment as a deterministic force to which organizations respond (Anderson and Paine, 1975; Duncan, 1972; Lawrence and Lorsch, 1967). Hall and Soskice (2001) found that political and social institutions determine the nature of firms, while firms collectively support the institutions that they come to rely on. In particular, the emerging market, where the political and social institutions have greater power due to the fragmentary law and market system, would induce the firms' passive actions to follow the environmental climates. This passive view focuses on motivationally relevant independent factors that can be changed by external environment. In that sense, the firms have to behave passively in accord with the peers and follow the social norms to prevent "being knocked out of the game".

Bribery as a kind of the firm strategy in dealing the environment can be analyzed in terms of the proactive and passive motivation. The environment stimulus (e.g., constraints) triggers the proactive motivation of firm to bribe in order to acquire the necessary resources. If the environmental conditions for firms are not satisfactory such that firms cannot obtain valuable resources via legal approaches, it is very likely that firms would like to gain access to these resources via illegal approaches such as bribery. Therefore in emerging markets where the opportunity to access to resources is not equal among all firms, entrepreneurs may bribe to avoid or reduce taxes, secure public procurement contracts, or bypass laws and regulations, in order to survive. Meanwhile, the environment norms also induce the passive motivation of firm bribery. In the environment where corruption and bribery are considered as normal phenomenon, firms may have no other choice but to give gifts and pay informal payments for government services they are in fact entitled to. And this situation is extremely in the emerging market. The individuals have high levels of discretion, goals are not tightly specified, the means for achieving them are uncertain, and attainment is not clearly linked to rewards in the emerging market (Mischel and Shoda, 1995). The firms in emerging market thus would follow the social norms and act like the peer firms to bribe.

As discussed previously in introduction, we adopt the resource dependence theory and the anomie theory to examine firms' different motivation to bribe in proactive and passive models. Specifically in the proactive model, we apply the resource dependence theory to investigate that firms may proactively bribe in order to gain access to better resources. In the passive model, we inspect the whether the firm is forced to bribe given the social anomie climate. To illustrate our theoretical thinking, we build up our theoretical framework for this research in Figure 1.

Insert Figure 1 about here

Proactive Motivation (Resource Dependence Theory)

The resource dependence theory posits that the environment is a source of scarce resources which are sought after by competing organizations (Pfeffer and Salancik, 1978). The theory's central proposition is that organizational survival hinges on the ability to procure critical resources from the external environment (Casciaro and Piskorski, 2005). According to this theory, the firm has to perform actively in response to the environment requirement and struggle to obtain the resources in order to survive and further make success. Besides, Aldrich (1976) proposed that in an environment of limited resources, in order for an organization to survive and to maintain its development, they must obtain those scarce resources from other organizations. To obtain resources, there must be transactions with other organizations, thereby creating interdependence. In this vein, the firm itself cannot obtain the necessary internal resources so that it needs to exchange complementary or unique resources with other organization to maintain its competitive advantage in such an open and changing environment. The theory highlights the vital role that the environment and relationship among the other related organization play in terms of developing the firm strategy. As a result, the environmental impacts should be taken into account when examining the motivation of firm strategic behaviors.

Organizational theory conceptualizes the firm external environment as having several sectors that exist in two layers (Bourgeois, 1980; Dill, 1958). The layer closest to the organization is the task environment which includes sectors that have direct transactions with the organization. The task environment influences daily organizational operations and goal attainment, and includes sectors such as competitors, suppliers and customers. The outer layer is called the general environment[1] and refers to sectors that affect organizations indirectly. The general environment often includes social, demographic and economic sectors (Daft et al., 1988). The distinction between institutional and task environment relationships reflects fundamental differences between institutional and economic or strategic theories in the motives they ascribe to organizations in establishing environmental relationships and the organizational outcomes that are predicted to result from these relationships (Oliver, 1997). And the table 1 summarizes the general-task environment dichotomy in terms of the divergent pressures, constraints, and relevant constituents in these respective environments that are predicted to be causally predominant in shaping organizations' structure and performance.

Insert Table 1 about here

----

[1] Some research treats the general environment as the institutional environment. They are equal in this research.

The general environment emphasizes the survival value of conformity and the advisability of adhering to institutional rules and norms. Institutions in the general environment refer to regulatory structures, government agencies, rules, laws and professions (Oliver, 1997). And the key constituents predicted to influence organizations in general environments are not purveyors of scarce production factors but representatives of the state and, to a lesser extent, professional associations that define or enforce the public or collective rules governing an organization's actions. The mechanisms of environmental control over organizations are not exchange dependencies, but rules, regulations and inspections (Meyer et al., 1983). The requirements of the general environment specify the organizational structures and activities that are publicly or collectively viewed as appropriate, legitimate, or socially acceptable. Therefore, the organizational behaviors in general environments would be less determined by the acquisition of task resources than by the public conferral of legitimacy and approbation on an organization's processes or outputs. The bribery behaviors thereby are strongly affected by the government and the institutional authorities. Literature on bribery shows the important role of the government in both the economic perspective (the demand side) (e.g., Beets, 2005) as well as the managerial perspectives (e.g., Quah, 1999; Pope and Vogl, 2000). Accordingly, the perceptions of government should be treated as the vital indicator to reflect the firm's general environment. The effective and efficient government would have less ambiguous regulations and deal with official affairs in the formal way, which would leave no room for the firm to bribe. In that sense, the firm would not be willing to bribe the government. Therefore, we propose our hypothesis 1 on the general environment's impacts on the firm bribery.

Hypothesis 1: The worse the general environment conditions are, the more likely firms would bribe.

The task environment conceptions, however, tend to emphasize the technical interdependence of organizations and environments, the scarcity of environmental resources, and the competitive pressures imposed on organizations to design efficient work arrangements, to manage problematic exchange dependencies, and to acquire and control critical input resources (Dill, 1962; Lawrence and Lorsch, 1967; Pfeffer and Salancik,1978; Thompson, 1967). A task environment perspective also coincides approximately with economists' conception of the classic competitive market (Scott, 1983). From this perspective, key constituents in an organization's task environment include those who control the critical factors of economic production, such as land, labor, capital and supplies that are essential to the organization's core work activities (Jacobs, 1974). In this vein, the firm behaviors in the task environment are dependent on the acquisition of scarce resources and the effective management of task interdependencies in a competitive market context.

The task environment sheds more light on the firm's own resources and capacities. Unfortunately, in the bribery context, the resources of firm are often ignored in the previous research. Yet, according to the resource-based view, the firm's resources can be changed into the firm capacities in order to get the competitive advantages in the task environment. Therefore, we argue that the firm with valuable and rarely resources (e.g., innovation, financial, and marketing) in accord with the task environment would have more competitive advantages than its competitors. In that sense, the firm with resources needs not to adopt the informal channels, such as bribery, to “get things done”.

Therefore, we propose our hypothesis 2 on the task environment’s impacts on the firm bribery.

Hypothesis 2: The worse the task environment conditions are, the more likely firms would bribe..

Passive Motivation (Anomie Theory)

The anomie theory refers to a situation in which there is an apparent lack of fit between the culture's norms about what constitutes success in life (goals) and the culture's norms about the appropriate ways to achieve those goals (means). And the term “anomie” means "personal feeling of a lack of social norms or the situation of normlessness", and describes the breakdown of social norms and values. This theory denotes some of “common” diseases of modern society, which describes the mismatch of legitimate goals and illegitimate means due to the dramatic societal changes (Durkheim, 1893). A number of scholars applied the idea of anomie to study social anomie behavior, such as crime. For example, Messner and Rosenfeld (2001) extended Merton’s anomie theory (1938) by treating both economic and non-economic institutions of a society as the structural drivers in promoting anomie behaviors. In their opinion, Merton (1938) paid enough attention on social and cultural drivers of anomie behaviors, but not on the institutional level factors. However, since institutions and organizations in a society are interconnected, failing in one institution can cause the problems in another institution, for example, failing in education can cause failing in economic performance, be it competitive advantage, technological innovation, or business ethics. Cullen et al (2004) identified that institutions like economy, polity, family, and education can all have a significant influences on the firm managers’ willingness to justify ethically suspect behaviors. The application of anomie theory has been extended to cross-national context and continues to investigate cultural and institutional drivers of bribery, the effects of interplay of culture and institutions (Martin et al., 2007). However, they failed to trace the late development of anomie theory and thus failed to achieve its full potential.

The late development of anomie theory, especially the application in the organizational studies, moves anomie theory to next level by treating organization, in addition to institution and societal culture, as a universe for the creation of anomie, deviance, and crime. Furthermore, it unpacks the mechanism of accepting anomie by taking into consideration the individual’s perception of the anomie.

Other things being equal, organizations may still be different in terms of their organizational behaviors including anomie organizational behavior. Vaughan (1998) and Perrow (1999; 2007) studied technical and other accidents, which were caused by organizations, and concluded that organizational anomie are collectively constructed; when organizations become the complex system and they consist of different components and parts, the failure in one part would be often neglected or left unnoticed until it causes a big trouble, or even an apparent serious accident in the society. And these unusual practices and anomie behaviors in organizations may be contagious. When organizations perceive the anomie behaviors as “common practice” around, they may normalize their anomie behaviors in order to make sense of these behaviors and “fit in” the environment. Specifically, bribery is in many nations considered as worse than the anomie behavior, a crime. If firms perceive crime to be a common issue, and public security is not a concern here, they may take severe anomie organizational practices, including bribery, as the common activities:

Hypothesis 3: The more severe social disorder, theft, and crime are, the more likely firms would bribe.

Furthermore, unusual or anomie behaviors may even get normalized inside organizations, i.e. people in organizations may consider some anomie behaviors to be not deviant, even normal. It is due to the people see these anomie behaviors frequently; these behaviors do not seem to cause problems, however, they may be quite helpful in archiving organizational goals.

The individuals, e.g. firm managers, perceive norms subjectively, and interpret them and act upon them differently. The personal educational experience, value, and attitude may predispose an individual to internalize a norm, but the ways they perceive the norm or anomie will be different. Individuals may act rationally in their own terms, but the consequential behaviors are different (Dubin, 1951). In this vein, an individual who strives to attain the common goals of a specific society yet being unable to reach these goals legitimately because of the structural limitations in society would exhibit anomie behavior (Merton, 1994). Caruana et al. (2000) confirm a link between anomie on academic dishonesty among university students and suggest that universities needed to foster codes of ethics among students in order to curb it. Therefore, the anomie can be treated as the push factor in the social disorder.

The firm bribery behavior is obviously one type of anomie behaviors by account of the firm who bribes focuses only on the ends (get some done) but ignores the ethic means (formal channels). The bribery behavior is a result of ignorance towards the ethics mean and social anomie perceptions.

Hypothesis 4: The more likely the firms perceive social anomie climate as normal, the more likely firms would bribe.

Method

Data

The firm bribery data are collected from the World Business Environment Survey (WBES), conducted by the World Bank, to determine the constraints that businesses confront and investment environment worldwide. WBES recorded information on corruption and bribery from individual firms across sampled countries. WEBS data are particularly suitable for comparative analysis of bribery activities in worldwide. The survey includes several important questions directly related to corruption and bribery in firms' business environment. For example, it asks the respondents how often the individual firm must make "additional payment" to public officials to get things done, and it elicits the amount of bribes paid as a percentage of the firm's revenues (Wu, 2008). The data for present research are from the WBES in the year of 2002. Data are collected mostly though personal interviews conducted at the managerial level, and in this research, 700 Chinese firms from 26 industries participated in this survey.

Measures

Bribery Behavior

The survey contains several important items directly linked to bribery in firms' business environment and bribery. In the survey, the participants are requested to directly indicate the percentage of annual sales value would be cost by the "gift or additional payment" to public officials to get things done. In the survey, the 39th question reads: "*On average, what percent of annual sales value would such expenses cost a typical firm like yours?*" The responses for this question are all in the percentage type. In this research, we treat this percentage number as our dependence variable to capture the Chinese firms' bribery behaviors. In the empirical analysis, we transform the percentage into a binary data. That is, we keep the number of zero percent and encode the other non-zero percent number into 1. Therefore, we have the binary bribery variable to measure whether or not the firm has the bribery behavior.

Resource Dependence Variables

General Environment

Business-Government Relationship The business-government relationship portrays the firm's perception of the government policy interpretations. The question 35th in survey describes "In general, government officials' interpretations of regulations affecting the establishment are consistent and predictable". The participants are required to express their agreements toward this statement, with a six point scale ranging from fully disagree to full agree.

Task Environment

Exporter The firm's ability to sell its product to the foreign market can be treated as an indicator of its competitive capacities. The product sale overseas costs much more firm resource than in the domestic market due to the export regulations and foreign competition. Thus, the overseas sale reflects that the firm has the ability to either decrease its operational cost or invent the new product to achieve the competitive advantage. In addition, the successful overseas sale reveals the corporate international marketing capability. Therefore, the firm has the export business can be regarded as its competitive advantage. We adopt the data from question 11th that reflects the percent of sales that sold domestically or exported. In this research, we transform the data into the binary variable to measures whether the firm's sales are exported directly or indirectly (through a distributor). And we use the number 1 to identify the firm that has exported activities and the number 0 to represent non-exporter.

Financial Resource The financial resource provides firm with the ability to compete with other competitors. Question 28th in the survey depicts the firm's ability to achieve financial resource by an overdraft facility or line of credit. This variable is a dummy variable, and the number 1 indicates that the firm has the overdraft facility or line of credit (the financial resource).

External Auditor This variable represents the importance of corporate governance in determining the propensity for bribery, especially indicates whether a firm's annual financial report receives an external audit. We use the data from question 32nd in the survey to capture this governance variable. This variable is also in the binary type and the number 1 means the firm has an external auditor.

Location The location variable measures the firm's location in the country. The location represents the economic status and institutional environment. Previous research shows that the economic condition contributes to the bribery behaviors. In particular, the developed regions have less bribery issues than the developing regions. We adopt the variable to take care for economic factors. According to the question 7th in the survey, the location is a categorical variable scaling from 1 to 5 (1=Capital City; 2=Other city of over 1 million population; 3=City of 250,000-1million; 4=City of 50,000-250,000; 5=Town or Location with less than 50,000 population).

Anomie Variables

The anomie climate of business firms are measured in two aspects: one is the actual spending on the protection of business from crimes; another is the perceived constraints caused by anomie climate in the social environment.

Security Expenditure This variable is measured by the percentage of the firm's cost spending on the security and protection payments. WEBS data provide the information of percentages of operating cost spent on the protection payments (e.g., to organized crime to prevent violence), respectively. We adopt this variable that measures firms' costs on prevention from crimes, either minor or organized crimes.

Anomie Climate The WBES investigates the investment climate constraints for the establishment. The climate issues listed in the survey are composed of 18 items, ranging from telecommunications to legal system/conflict resolution. The data measure the perceptions of firm on the extent to which the issues are an obstacle to business activity (ranging from "no obstacle" to "very severe obstacle"). We use several indicators to capture the climate of anomie in the social environment: whether a firm' perceived *Corruption*, and *Crime, Theft, and Disorder* as obstacle in operation and growth of its business. According to the previous research, the tax administration plays the influential role in the investment climates (e.g., Wu, 2009). We follow this paradigm and choose the *Tax Administration* as the indicator of investment climate.

Control Variables

The control variables in this research are *firm age*, *firm size*, *ownership*, and *industry*. The *firm age* measures how long the firm has established. And the *firm size* is measured by the log-transformation of the average number of workers 1 year ago. *Ownership* is a dummy indicating whether the firm is domestic or foreign-own firm, and the value 1 refers to the domestic firm. Finally, the *industry* is also a categorical variable that reflects the industry which the firm belongs to. In the statistical analysis, the *industry* is controlled and treated as the dummy variables in order to take care of the industry effect.

Results

The descriptive and correlation analysis results are reported in the table 2 and 3. In this research, our sample contains 700 Chinese firms in 26 industries.

Insert Table 2 about here

Insert Table 3 about here

Using the bribery behavior as the dependent variable, we develop four binary logistic regression models. Model 1 is the null model that only includes the control variables, *firm age, firm size, ownership, and industry*. In model 2, we add the resource dependence variables into the null model as the independent variables to measure the effects of resource dependence. Similarly, we employ the model 3 to test the effects of anomie theory by employing the anomie variables in the analysis. Finally, we incorporate the overall effects of resource dependence and social anomie in model 4 to make the complete picture for our research. All of the model analysis results are reported in the Table 4. All of the four regression models contain only 686 out of 700 firms. The reason why we have only 686 observations included in our regression analysis is that these 16 observations that have missing value in the variables of *firm age* and *ownership*. The statistic software automatically drops these observations out during the analysis processes.

First column of table 4 reports the coefficients and standard errors of the null model. Results show that the *ownership* has the effects on the bribery behaviors; it appears that the domestic firms are more likely than foreign invested firms to bribe.

Insert Table 4 about here

In the second column, we test our hypothesis 1 of resource dependence theory. We find that the general environmental factors and the task environmental factors both play the influential role here. In particular, in the general environment, the business-government relationship has the significant negative effect on the bribery behavior. That is to say, the more firms interpret the government to be inconsistent and unpredictable, the more likely firms would bribe. The reason for this phenomenon is that the firm would face the institutional uncertainty with the inconsistent and unpredictable governmental authority. Specially, in the emerging market, the social institution is not mature and the government decision is quite arbitrary. In order to deal with the uncertainty, the firms have to act proactively to bribe or make gifts to government so that they can easily "get things done". It also sheds light on the role of bribery that provides the firm with a mean to get in touch with the governmental authority in order to get some benefits. Therefore, this result supports the hypothesis 1 that the worse the general environment that the firm faces, the more likely the firm would bribe.

And for the task environmental factors, the variables all significantly influence the bribery behaviors. Specifically, the *Exporter* and *Financial Resource* have the negative effects on the bribery. The effects reveal that the more capacities and resource the firm owns, the less likely it would go to bribe. And the negative effects also reflect that the shortage of firm resources contributes to the bribery behavior. If the firm lacks of the task related resources, it would act proactively to commit bribery. The coefficient of *Location* is positive, and it means that the impact of location reveals that the firms in small area are more likely to bribe than the firms in large cities. It is consistent with our prediction that small area that has limited institutional restriction would boost the bribery climate. Firm would act proactively in order to make up for its shortage in the task related resources. Besides, The *External Auditor* has the negative coefficient. That is, the external auditor existing in the organization would decrease the likelihood for firm to bribe. These results are in accord with the hypothesis 2 that the worse the task environment conditions are, the more likely firms would bribe. In addition, we conduct the Delta likelihood Chi-square test to measure the effects of resource dependence theory. The result shows that the significant increase between the null model and resource dependence model with Delta Chi-square equals to 51.28%.

Model 3 reflects the impacts of the social anomie. The social anomie means that the people treat the social anomie as normal and concern only the ends regardless of the ethic means. According to the model 3 results, the *Security Expenditure* contributes to the firm bribe significantly. Security expenditure reflects the environmental anomie condition. The results show that the more the firm spends on the security, the worse the environment anomie is. This positive coefficient also implies that the firm in the anomie environment would passively follow the anomie norms and treat the bribery as a normal behavior. In this vein, the firm would tend to bribe in the environment that needs high security expenditure.

In terms of the anomie climates, the perception of *Crime, Theft, and Disorder* indicates the level of social anomie. The results show that the less firm perceives the crime, theft, and disorder as obstacles in business, the more likely the firm would bribe. Thereby people, in consequence, would passively regard the anomie behaviors to be acceptable so that they have the passive motivation to conduct these anomie behaviors. The results provide support for the hypothesis 3 that the more the firms spend on security to prevent from disorder, theft, and crime, the more like firms would bribe.

The results also express that the *Corruption* has the positive impacts on the firm bribery behavior. And it means that the more firm perceives the corruption as an obstacle in business, the more motivation the firm would have to bribe. According to the institutional anomie theory, in the environment, the firm is rather difficult to change the corruption climate of anomie but have to act passively to recognize it and do something to fit the environment needs. In that sense, the firm would react to the environment and try to make some strategies to in accord with the social norms. It is in accord with the hypothesis 4 that the more the firms perceive corruption as a severe obstacle to business, the more likely they would bribe. Thus, the hypothesis 4 is supported. However, the *Tax Administration* is not significant here. One possible reason for this concern is in China 2002, the tax administration is a long stand and general accepted regulation and all the firms have to obey this rule. Therefore, the tax administration doesn't have the effects on the firm bribe. Similarly, we test the incremental likelihood Chi-square to examine the effects of anomie theory. The result shows that the anomie model is significantly more effective than the null model and the delta Chi-square is 14.21%, which in turn provides the supports for the hypotheses 3 and 4.

Model 4 is the full model that includes the overall effects of resource dependence and social anomie. The results of full model reveal that nearly all the independence variables have the significant effects on the bribery behaviors, and the valences of effects are consistent with the resource dependence model. But for the anomie variables, the variable of *Crime, Theft, and Disorder* is insignificant in the full model. This discrepancy can be explained that the perception of crime, theft, and disorder is based on the firm resources. In this vein, when we add the resource dependence variables into the full model, the effects (variances) of the crime, theft, and disorder perception have been interpreted by the resource dependence variables. In general, the results of model 4, the full model, provide extra supports for the hypotheses. And the Delta Chi-square test also demonstrates the significant integrated effects of resource dependence theory and anomie theory. And the delta likelihood Chi-square is 64.44%, which reflects greater incremental improvement compared to the null model.

Robustness Test

We have shown that the resource dependency theory and social anomie theory help to explain the proactive and passive motivation of firm bribery in the emerging market. To further investigate the nature of firm bribery motivation in the broader context, we conduct a post hoc analysis to examine the two theories by extending the sample to include other Asian countries. Many Asian countries have been consistently rated as having high levels of corruption for the most current decade and some of them (Myanmar and Bangladesh, for example) are perceived as among the most corrupt countries in the world (Wu, 2008). Therefore, the Asian countries would be very appropriate for the extended investigation.

To be consistent with the previous research, our post hoc analysis sample contains 10 Asian countries[2] (Wu, 2008). We conduct the same transformations to the Asian countries data, and we eliminate the observations with missing value in the dependent variable. We thus have the analysis sample includes 5670 observations from 9 countries. Table 5 illustrates the sample coverage in the different countries. Then we perform the same binary logistic regression full model to examine the two theories' effects in the Asian countries. In addition, we control for the GDP effects among these countries in order to control the country economic difference.

Insert Table 5 about here

The post hoc binary logistic regression analysis results reveal the supports for the anomie theory. Table 6 elaborates the results of post hoc regression analysis. We can know in table 6 that the social anomie climates play a significant influential role in the bribery. These results confirm the importance of passive motivation in the Asian countries, and in return, reflect the similarity of social anomie climates among the Asian countries. But for the resources dependency theory, the post hoc analysis results are inconsistent with our predications. One possible reason for this discrepancy refers to the variations of government and legitimacy system in these countries.

Insert Table 6 about here

Discussion and Conclusion

Literature has shed the light on the role of the macro cultural values and social norms in bribery, and the effects are mediated by the managers' perceptions and attitudes toward the bribery behaviors. And some literature also tries to corporate the macro cultural and economic

[2] The 10 Asian countries contain Azerbaijan, Bangladesh, Cambodia, China, Indonesia, Kazakhstan, Malaysia, Pakistan, Philippines, and Thailand.

and micro firm level factors to explain the bribery behaviors. Yet, the previous research is mainly conducted in the cross-national context, and the literature overlooks the important linkage between the macro environment and the micro firm resources. This research addresses the gap between the macro and micro link in the emerging market context. In this research, we employ the resource dependence theory and anomie theory to provide the new insights on the firm bribery behaviors. And the findings reveal the important explanations for bribery in the perspective of these two theories, especially for the emerging market context.

And the findings of this research have many managerial implications as well as the guidelines for policy making. First, in the aspect of the managerial implication, the firm in the emerging market is vulnerable to the general environment and task environment. Therefore, when doing business in the emerging market, the practitioners should pay more attentions to the general environment and concern the relationship with government. But it is not the whole story. The firm should also make full use of its own resources, especially the task environment specific resources. The task specific resources can supply the firm with competitive advantages and further decrease the probability to conduct the anomie behavior by the unethical means. One more important concern is the social anomie level. The practitioners should take the social anomie level into account when beginning the business in the emerging market. The acceptance of anomie behaviors would play the pushing role here that motivates the firm to bribe due to the normalization of social anomie. In the policy making aspect, the government should be careful to make the policy in order to create the friendly investment atmosphere to attract more investors. Similarly, the investment climate is not the only case. More importantly, it is the obligation of the government to take care of the social anomie behaviors and set up the clear legislation to regulate the people's behaviors as well as their perceptions of the anomie behaviors.

As for the future research on firm bribery behavior, the researchers should further extend this framework and examine more indicators in terms of these two theories. Besides, the other factors that drive the bribes should be taken into account in the future research. Another intriguing point raised by this research is the context of emerging market. The emerging market is a topic both of economics and management, and much research is targeting the drivers of the rapid economic growth. However, the business ethics in the emerging market are worried, but have not received enough systematic investigation. This research intends to make a contribution moving to this direction.

References

Aragon-Correa, J. A. 1998. Strategic proactivity and firm approach to the natural environment. *Academy of Management Journal*, 41(5): 556-67.

Aldrich, H. 1976. Resource dependence and interorganizational relations: local employment service offices and social services sector organizations, *Administration and Society*, 7: 419-454.

Anderson, C. R. & Paine, F. T. 1975. Managerial perceptions and strategic behavior. *Academy of Management Journal*, 18(4): 811-823.

Barney, J. 1991. Firm resources and sustained competitive advantage. *Journal of Management*, 17(1): 99-120.

Beets, S. D. 2005. Understanding the demand-side issues of international corruption. *Journal of Business Ethics*, 57(1): 65-81.

Bernardi, R. A., Witek, M. B., & Melton, M. R. 2009. A four-country study of the associations between bribery and unethical actions. *Journal of Business Ethics*, 84(3): 389-403.

Bourgeois, L. J. 1980. Strategy and environment: A conceptual integration. *Academy of Management Review*, 5: 25-39

Calderon, R., Alvarez-Arce, J. L., & Mayoral, S. 2009. Corporation as a crucial ally against corruption. *Journal of Business Ethics*, 87: 319-332.

Casciaro, T., & Piskorski, M. J. 2005. Power imbalance, mutual dependence, and constraint, absorption: A close look at resource dependence theory. *Administrative Science Quarterly*, 50(2): 167-199.

Caruana, A., Ramaseshan, B., and Ewing, M.T. 2000. The effect of anomie on academic dishonesty among university students. *International Journal of Educational Management*. 14(1):23 – 30

Crant, J. M. 2000. Proactive behavior in organizations. *Journal of Management*, 26: 435-462

Chen, Y., Yasar, M., & Rejesus, R. M. 2008. Factors influencing the incidence of bribery payouts by firms: A cross-country analysis. *Journal of Business Ethics*, 77(2): 231-244.

Cullen, J. B., Parboteeah, K. P., & Hoegl, M. 2004. Cross-national differences in managers' willingness to justify ethically suspect behaviors: A test of institutional anomie theory. *Academy of Management Journal*, 47(3): 411-421.

Daft, R. L., Sormunen, J. & Parks, D. 1988. Chief Executive Scanning, Environmental Characteristics, and Company Performance - an Empirical-Study. *Strategic Management Journal*, 9:2, 123-39.

Dill, W. 1958. Environment as an influence on managerial autonomy, *Administrative Science Quarterly*, 3: 409-443.

Dill, W. 1962. The impact of environment on organizational development. In Malik, S. and Van Ness, E. H. (Eds), *Concepts and Issues in Administrative Behavior.* Englewood Cuffs, NJ: Prentice-Hall, 94-109

Duncan, R.G. 1972. Multiple decision-making structures in adapting to environmental uncertainty: The impact on organizational effectiveness. *Human Relations*, 26: 273-291.

Durkheim, E. 1893. *The Division of Labour in Society*. New York: Free Press

Frese, M., & Fay, D. 2001. Personal initiative (PI): An active performance concept for work in the 21st century. In B. M. Staw & R. M. Sutton (Eds.), *Research in organizational behavior* (23): 133-187. Amsterdam: Elsevier.

Fritzsche, D. J. 2000. Ethical climates and the ethical dimension of decision making. *Journal of Business Ethics*, 24(2): 125-140.

Grant, A. M., & Ashford, S. J. 2008. The dynamics of proactivity at work: Lessons from feedback-seeking and organizational citizenship behavior research. In B. M. Staw & R. M. Sutton (Eds.), *Research in organizational behavior* (28): 3-34. Amsterdam: Elsevier.

Griffin, M. A., Neal, A., & Parker, S. K. 2007. A new model of work role performance: positive behavior in uncertain and interdependent contexts. *Academy of Management Journal*, 50: 327-347.

Habib, M., & Zurawicki, L. 2002. Corruption and foreign direct investment. *Journal of International Business Studies*, 33(2): 291-307.

Hall, and Soskice, D. eds. (2001). *Varieties of Capitalism: The Institutional Foundations of Comparative Advantage*, Oxford: Oxford University Press.

Hatten, Kenneth J., Schendel, Dan E., & Cooper, Arnold C. 1978. A strategic model of the U.S. brewing industry, 1952-1971. *Academy of Management Journal*, 21(4): 592-610.

Herzberg, F., Mausner, B., & Snyderman, B. B. 1959. *The motivation to work*. New York: Wiley.

Jacobs, D., 1974. Dependency and vulnerability: An exchange approach to the control of organizations. *Administrative Science Quarterly*, 19: 45-59.

Katzell, R.A. & Thompson, D.E. 1990. Work motivation: theory and practice. *American Psychologist*, 45(2): 144-153.

Kraar, L. 1995, “How corrupt is Asia?” *Fortune*

Lawrence, P. & Lorsch, J. 1967. *Organization and environment*. Boston: Division of Research, Harvard Business School.

Locke, E. A. & Bryan, J. (1969). The directing function of goals in task performance. *Organizational Behavior and Human Performance*, 4, 35-42

Locke, E. A. & Latham, G. P. 1990. 'Work motivation and satisfaction - light at the end of the tunnel.' *Psychological Science*, 1(4): 240-46.

Locke, E. A. & Latham, G. P. 2002. 'Building a practically useful theory of goal setting and task motivation - A 35-year odyssey.' *American Psychologis*t, 57(9): 705-17.

Martin, K. D., Cullen, J., & Parboteeah, K.P. 2007. Deciding to bribe: A cross-level analysis of firm and home country influences on bribery activity. *Academy of Management Journal*, 50(6):1401-22.

Mauro, P. 1995. Corruption and growth. *Quarterly Journal of Economics*, 110(3): 681-712.

Messner, S.F. and Rosenfeld, R. 1997. Political restraint of the market and levels of criminal homicide: A cross-national application of institutional-anomie theory. *Social Forces*, 75:(4) 1393-1416.

Merton, R.K. 1938. Social Structure and Anomie. *American Sociological Review*, Vol. 3(5): 672-682

Meyer, J. W., and Scott, W. R. 1983. Centralization and the legitimacy problems of local government'. In Meyer, J. W. and Scott, W. R. (Eds), *Organizational environments: ritual and rationality.* Beverly Hills, CA: Sage, 199-215.

--------------, -------------, and Deal, T. E. 1983. Institutional and technical sources of organizational structure: explaining the structure of educational organizations. In Meyer, J. W. and Scott, W. R. (Eds), *Organizational environments: ritual and rationality.* Beverly Hills, CA: Sage, 45-67.

Mischel, W., & Shoda, Y. 1995. A cognitive–affective system theory of personality: Reconceptualizing situations, dispositions, dynamics, and invariance in personality structure. *Psychological Review*, 102: 246-268.

Oliver, C. 1997. The influence of institutional and task environment relationships on organizational performance: The Canadian construction industry. *Journal of Management Studies*, 34(1): 99-124.

Parker, S. K., Bindl, U. K. & Strauss, K. 2010. 'Making things happen: a model of proactive motivation.' *Journal of Management*, 36(4): 827-56.

Perrow, C. 1999. *Normal Accidents.* Princeton University Press.

----------. 2007. *The Next Catastrophe.* Princeton University Press.

Pfeffer, J. and Salancik, G.R. 1978. *The external control of organizations*. New York: Harper & Row.

Pope, J. and Vogl, F. 2000. Making anticorruption agencies more effective, *Finance & Development*. 37: 6-9.

Powpaka, S. 2002. Factors affecting managers' decision to bribe: An empirical investigation. *Journal of Business Ethics*, 40(3): 227-246.

Quah, J. S. T. 1999. Corruption in Asian countries: Can it be minimized? *Public Administration Review*, 59(6): 483-494.

Roethlisberger, F. J., & Dickson, W. J. (1939). *Management and the worker.* Cambridge, MA: Harvard University Press.

Rose-Ackerman, S. 2002. "Grand" corruption and the ethics of global business. *Journal of Banking & Finance*, 26(9): 1889-1918.

Sanyal, R. 2005. Determinants of bribery in international business: The cultural and economic factors. *Journal of Business Ethics*, 59(1): 139-145.

Studenmund, A. H.: 2001. Using Economics: A Practical Guide, (Addison Wesley Longman, Inc).

Thompson, J. D. 1967. *Organizations in Action*. New York: McGraw-Hill.

Vaughan D. 1998. Rational choice, situated action, and the social control of organizations. *Law & Society Review*. 32(1):23-61

Vroom, V. (1964). *The motivation to work*. New York: Wiley

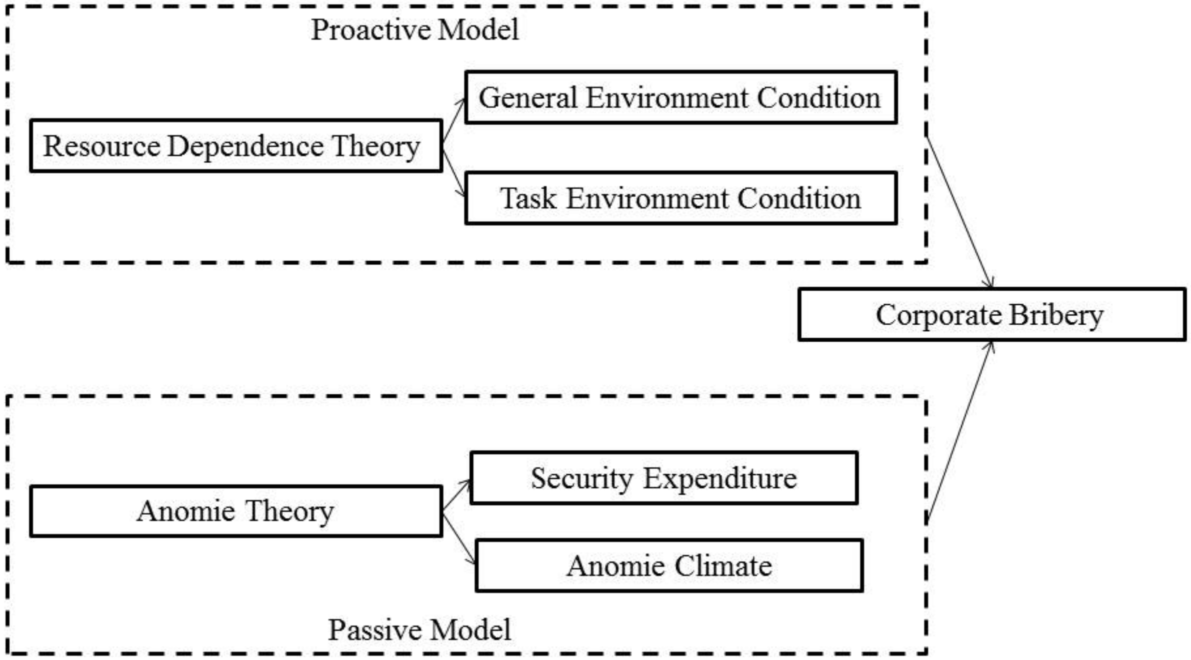
Wated, G., & Sanchez, J. I. 2005. The effects of attitudes, subjective norms, attributions, and individualism-collectivism on managers' responses to bribery in organizations: Evidence from a developing nation. *Journal of Business Ethics*, 61(2): 111-127.

Wei, S.-J., “How taxing is corruption on international investors?,” *Review of Economics and Statistics*, 82(1):1-11, February 2000

Wu, X. 2009. Determinants of bribery in Asian firms: Evidence from the world business environment survey. *Journal of Business Ethics*, 87(1): 75-88.

Zhang, L. N. & Messner, S. F. 1994. The severity of official punishment for delinquency and change in interpersonal-relations in Chinese society. *Journal of Research in Crime and Delinquency*, 31(4): 416-433.

Figure 1 Theoretical Framework



The Effects Of Joining To WTO on Non-Oil Export Of Iran

Seyed Mohammad Hossein Sadr[1]

Ilia Torshizian[2]

ABSTRACT

In this study we aim to evaluate the effects of globalization with the precision and non-precision factors on non-oil export of Iran .The underlying objective of the paper is to provide support for a model that predicts these effects with the GMDH-neural network method as an instrument for complicated non- linear trends especially with the limited observations. We used International Trade Integration of Industry (IIT) as an index of globalization. The results indicate the globalization variables have much more effects on non-oil export in globalization process.

JEL codes: C45-C53-F47

Key words: globalization- non-oil export- GMDH, neural network –factors of production productivity - oil revenues- inflation- exchange rate- gross domestic production (GDP) - growth rate of world income- imports of capital goods.

1) INTODUCTION

One of the basic goals in the economic policies is augmentation in share of Iran economy and to improve his situation in international trade and world economy. Because of that the sale of oil and its products as well as the government revenue of crude oil were not sustainable during the past years and the fact that crude oil is an exhaustible resource make it unreliable for sustainable development of the Iran economy so diversifying the economy away from its heavy reliance on oil revenues and improving the economy's future growth is an important goal and the policies should concern over the years with a view to expand non-oil export and reduce the dependence of Iran economy on oil export .

Having a competitive environment is the most important need for improving non-oil export so being in international markets specially globalization become necessity.

Stability in international economic relation , policies , programs and economic activities are the first and most important advantage of joining to WTO(World Trade Organization) that bring with itself suitable situation for diversify the nations export base.

The statistic of Iran export shows the various export expansion. In 2006 the growth rate of non-oil export was 47.2%amounting to 16.3 $billion, trade partners of Iran exeeds 100 countries. Values of exports in $million as well as percentage shares of the major export commodity group are shown on table1-1.

Table 1-1) Value of non-oil exports and percentage shares in 2005-2006 (in million dollars)

Name of products	Year:2005		Year:2006	
	Value	Percentage shares	value	Percentage shares
Manufactures	6850	61.8	11210	68.8
Agriculture	1650	14.9	2070	12.7
Carpet and household manufactures	641	5.8	527.5	3.2
Mineral material	444.6	4.0	849.5	5.2
Others	1490.7	13.5	1643.8	10.1
Sum	11076.3	100	16300.8	100

The paper is divided in to 4 sections. The first section introduced the subject matter, the second section discussed method and material, result and discussions are presented in third section, while the fourth examine the conclusions.

2) METHOD AND MATERIAL

2-1) MODELLING USING GMDH NEURAL NETWORKS

By means of GMDH algorithm a model can be represented as set of neurons in which different pairs of them in each layer are connected through a quadratic polynomial and thus produce new neurons in the next layer. Such representation can be used in modelling to map inputs to outputs. The formal definition of the identification problem is to find a function $\hat{f}$ so that can be approximately used instead of actual one, f in order to predict output $\hat{y}$ for a given input vector $X = (x_1, x_2, x_3, ..., x_n)$ as close as possible to its actual output y. Therefore, given M observation of multi-input-single-output data pairs so that

$$y_i = f(x_{i1}, x_{i2}, x_{i3}, ..., x_{in}) \quad \text{(i=1, 2,…, M)}$$

It is now possible to train a GMDH-type neural network to predict the output values $\hat{y}_i$ for any given input vector $X = (x_{i1}, x_{i2}, x_{i3}, ..., x_{in})$, that is

$$\hat{y}_i = \hat{f}(x_{i1}, x_{i2}, x_{i3}, ..., x_{in}) \qquad \text{(i=1,2,…,M).}$$

The problem is now to determine a GMDH-type neural network so that the square of difference between the actual output and the predicted one is minimised, that is

$$\sum_{i=1}^{M} [\hat{f}(x_{i1}, x_{i2}, x_{i3}, ..., x_{in}) - y_i]^2 \rightarrow \min .$$

General connection between inputs and output variables can be expressed by a complicated discrete form of the Volterra functional series in the form of

$$y = a_0 + \sum_{i=1}^{n} a_i x_i + \sum_{i=1}^{n}\sum_{j=1}^{n} a_{ij} x_i x_j + \sum_{i=1}^{n}\sum_{j=1}^{n}\sum_{k=1}^{n} a_{ijk} x_i x_j x_k + \ldots \quad \textbf{(1)}$$

Which is known as the Kolmogorov-Gabor polynomial (Sanchez et al. 1997; Iba et al. 1996; Ivakhnenko 1971; Farlow 1984; Nariman-zadeh et al. 2003)? This full form of mathematical description can be represented by a system of partial quadratic polynomials consisting of only two variables (neurons) in the form of

$$\hat{y} = G(x_i, x_j) = a_0 + a_1 x_i + a_2 x_j + a_3 x_i x_j + a_4 x_i^2 + a_5 x_j^2 \quad \textbf{(2)}$$

In this way, such partial quadratic description is recursively used in a network of connected neurons to build the general mathematical relation of inputs and output variables given in equation (1). The coefficient a_i in equation (2) are calculated using regression techniques (Farlow 1984; Nariman-zadeh et al. 2003) so that the difference between actual output, y, and the calculated one, $\hat{y}$ for each pair of x_i, x_j as input variables is minimized. Indeed, it can be seen that a tree of polynomials is constructed using the quadratic form given in equation (2) whose coefficients are obtained in a least-squares sense. In this way, the coefficients of each quadratic function G_i are obtained to optimally fit the output in the whole set of input-output data pair, that is

$$E = \frac{\sum_{i=1}^{M} (y_i - G_i())^2}{M} \rightarrow \min \quad . \qquad \textbf{(3)}$$

In the basic form of the GMDH algorithm, all the possibilities of two independent variables out of total n input variables are taken in order to construct the regression polynomial in the form of equation (2) that best fits the dependent observations (y_i, i=1, 2, …, M) in a least-squares sense. Consequently, $\binom{n}{2} = \frac{n(n-1)}{2}$ neurons will be built up in the first hidden layer of the feed forward network from the observations $\{(y_i, x_{ip}, x_{iq})$; (i=1, 2, …, M)} for different $p, q \in \{1,2,\ldots,n\}$. In other words, it is now possible to construct M data triples { (y_i, x_{ip}, x_{iq}); (i=1, 2, …, M)} from observation using such $p, q \in \{1,2,\ldots,n\}$ in the form

$$\left[\begin{array}{cc:c} x_{1p} & x_{1q} & y_1 \\ x_{2p} & x_{2q} & y_2 \\ \hdashline x_{Mp} & x_{Mq} & y_M \end{array}\right].$$

Using the quadratic sub-expression in the form of equation (2) for each row of M data triples, the following matrix equation can be readily obtained as

$$A\mathbf{a} = Y$$

where $\mathbf{a}$ is the vector of unknown coefficients of the quadratic polynomial in equation (2)

$$\mathbf{a} = \{a_0, a_1, a_2, a_3, a_4, a_5\} \quad (4)$$

And

$$Y = \{y_1, y_2, y_3, \ldots, y_M\}^T$$

is the vector of output's value from observation. It can be readily seen that

$$A = \begin{bmatrix} 1 & x_{1p} & x_{1q} & x_{1p}x_{1q} & x_{1p}^2 & x_{1q}^2 \\ 1 & x_{2p} & x_{2q} & x_{2p}x_{2q} & x_{2p}^2 & x_{2q}^2 \\ \hdashline 1 & x_{Mp} & x_{Mq} & x_{Mp}x_{Mq} & x_{Mp}^2 & x_{Mq}^2 \end{bmatrix}$$

The least-squares technique from multiple-regression analysis leads to the solution of the normal equations in the form of

$$\mathbf{a} = (A^T A)^{-1} A^T Y \quad \mathbf{(5)}$$

Which determines the vector of the best coefficients of the quadratic equation (2) for the whole set of M data triples. It should be noted that this procedure is repeated for each neuron of the next hidden layer according to the connectivity topology of the network. However, such a solution directly from normal equations is rather susceptible to round off errors and, more importantly, to the singularity of these equations

2-2) VARIABLES IN THE MODEL

For finding out the variables that have probable effect on non-oil export we are inspired by papers like: Kuze(1981)- Goldeschtien and khan .M.s patterns (1971) - Pesaran M. H.(1984)- Thirlwall.(1999) - Band.M (1979),(1987)- Hothaker H.S. and S.P. Magee.(1969)- Pakdaman .R(1997)- Shakeri.A (2004)- Ameliau Santos-Paulino(2002)- Abrishami.H and his callgous (2006) etc.

Because of that Iran is an oil exporting country and the importance of oil in Iran economy, so we use oil revenues as a variable in pattern. The study utilized annual data for model estimation **that** was extracted from central bank of Iran.

.

3) MODEL SPECIFICATION, RESULTS AND DISCUSSIONS

We used the Multi-Objective Optimization Program that was designed with target of reducing the error in modelling and forecasting that simultaneously increase the precision of forecasting and the stability of process for measurement the scale of variables effects in different patterns.

$$GNOX = f\,(RP_t, RPE, GW_t, GW_{t-1}, GMC_t, GMC_{t-1}, GGDP_{t-1}, EB_{t-1}, AP_t, AP_{t-1}, GPRO_t, GPRO_{t-1}, OR_{t-1}, IIT_{t-1}, OPENOX, GNOX_{t-1})$$

All variables are as defined in below table:

Table 3-1)

Title	variables
Relative prices[1]	RP_t
Real exchange rate export (Pd/Pf)	RPE
Growth rate of world income	GW_t, GW_{t-1}
Growth rate of capital goods import (in current year and one term ago)	$_{t-1}, GMC_t, GMC$
Growth rate of GDP in one term ago	$_{t-1}$ GGDP
Informal exchange rate in one term ago	$_{t-1}$ EB
Inflation (in current year and one term ago)	$_{t-1}, AP_t, AP$
Growth rate of production factors productivity(in current year and one term ago)	$_{t-1}, GPRO_t$ GPRO
Oil Revenues in one term ago	$_{t-1}$ OR
International Trade Integration of Industry in one term ago	$_{t-1}$ IIT
Trade intensity index	OPENOX
Growth rate of Non-Oil export in one term ago	$_{t-1}$ GNOX

Note: it's *conventional to specify the export demand function as a multiplicative or constant elasticity function of relative prices measured in a common currency and foreign income. RP=Pd/Pf*

Pf: the foreign price, Pd: the domestic price

By means of the ability of GMDH algorithm for discretion non-linear trends in modelling and forecasting the growth rate of non-oil export , the effective variables are world income- globalization indexes- real exchange rate export- prices relative that used as an input for GMDH that the result are shown on table 3-2.

Table3-2) out put of GMDH method for first process.

RP_t, GW_t, GW_{t-1}, GMC_t, GMC_{t-1}, $GGDP_{t-1}$, $GPRO_{t-1}$, $GPRO_t$, IIT_{t-1}, $GNOX_{t-1}$, $OPENOX_t$, RPE_t, AP_t, AP_{t-1}, EB_{t-1}, OR_{t-1}	**Variables**
$_t$, AP_{t-1}, EB_{t-1}, OR_{t-1} AP	**Omitted variables**
GW_t, , IIT_{t-1}	**Variables with double effect**
0.014	**RMSE**
.118	**MAPE**
3.654	**Prediction error percentage**
96.346	**Prediction exactitude percentage**
0.061	**Theil in equality coefficient**

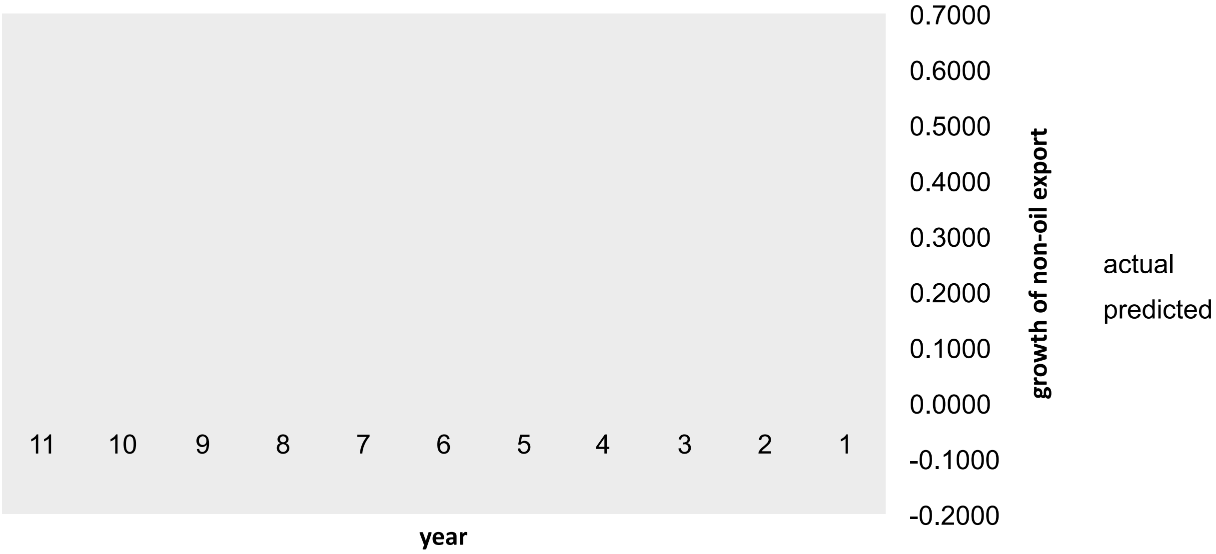
The first row indicates the primarily variables. One of the most important features of GMDH algorithm is the ability of omitting the redundant variables so we have the omitted variables in second rows. In view of the fact that we put Inflation and its first cease in price relative variables (RP) and the effect of exchange rate in real exchange rate export variable (RPE) so were omitted in modelling process. Also oil revenue was distinguished without impressive that the research shows it's authoritative. So in first process all variables were omitted except and the growth real production (GGDP) and productivity (GPRO).

All of the exogenous variables were effective in modelling process but the third row contains: growth of world income (GW) and index (IIT) were had double effect on growth rate of non-oil export.

The fourth to eighth rows were determined the standards measurement of prediction errors in first process GMDH test that shows high exactitude and enough authoritative in predicting. Also Theil statistic less than 0.55 shows that modelling has high authoritative.

The figure 3-1 shows the comparison between actual and predicted in first process.

Figure3-1



In second process we used the effective variables that were distinguished in first process as the inputs for neural networks so second patterns have 12 variables that are shown with their results on table 3-3.

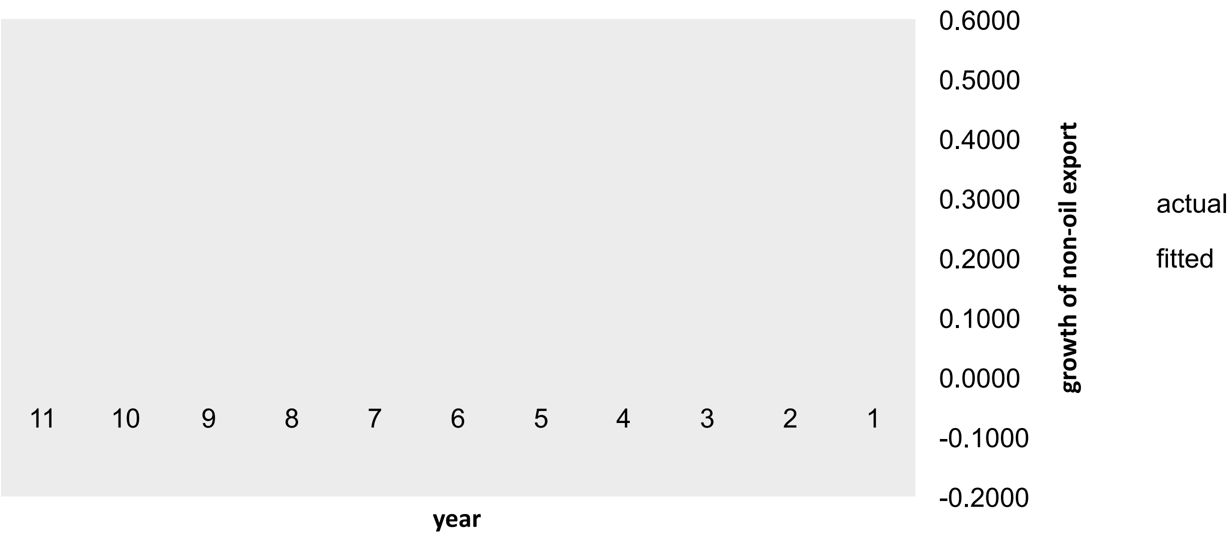
Table3-3) out put of GMDH method for second process

RP_t , GW_t , GW_{t-1} , GMC_t , GMC_{t-1} , $GGDP_{t-1}$, $GPRO_{t-1}$, $GPRO_t$, IIT_{t-1} , $GNOX_{t-1}$, $OPENOX_t$, RPE_t	**variables**
GW_{t-1} ,GMC_{t-1} ,$GPRO_{t-1}$,$GPRO_t$	**Omitted variables**
RP_t ,GMC_t ,$GGDP_{t-1}$, IIT_{t-1} , RPE_t	**Variables with double effect**
0.0096	**RMSE**
0.036	**MAPE**
2.503	**Prediction error percentage**
97.497	**Prediction exactitude percentage**
0.0416	**Theil in equality coefficient**

The results of second process out put indicate that factors of production productivity were putted away of the effective variables group in globalization. In the face of that abas shakeri in his paper (2004) was recognized this variable and exchange rate and inflation as effective variables on non-oil export with out globalization .So this variable has effect on non-oil export but in globalization process its effect is very little square up to other effective global variables that let us to omit it. The capital goods import, growth rate of world income in one term ago aren't impressive. The variables that have double effect on non-oil export are: growth rate of GNP in one term ago- growth rate of capital goods import in present - relative prices- real exchange rate export and International Trade Integration of Industry (ITI) index in one term ago and the other effective variables have the same effect. At last the standard errors were increased and Theil statistic like in first process shows that modelling has high auth oritative.

The figure 3-2 shows the comparison between actual and predicted in second process.

Figure3-2



In third process, in final pattern we use effective variables in second process as inputs for neural-network. The results are shown on table3-4.

Table3-4) out put of GMDH method for final process

RP_t, GW_t, GMC_t, $GGDP_{t-1}$, IIT_{t-1}, $GNOX_{t-1}$, $OPENOX_t$, RPE_t	**Variables**
---------	**Omitted variables**
RP_t, GW_t, GMC_t, $GGDP_{t-1}$, IIT_{t-1}, $OPENOX_t$	**Variables with double effect**
0.0056	**RMSE**
0.012	**MAPE**
1.469	**Prediction error percentage**

98.531	**Prediction exactitude percentage**
0.0244	**Theil in equality coefficient**

All of the variables in final patterns were effective on non-oil export and all variables except real exchange rate export and growth rate of non-oil export in one terms ago have double effect on growth rate of non-oil export. The prediction error in final process was reduced in comparison with two former processes and Theil statistic corroborate that the modelling authoritative was increased.

In final pattern we have effective variables:

$$GNOX_t = f(RP_t, GW_t, GMC_t, GGDP_{t-1}, IIT_{t-1}, GNOX_{t-1}, OPENOX_t, RPE_t)$$

The figure 4-3 shows the comparison between actual and predicted in final process.

Figure3-3

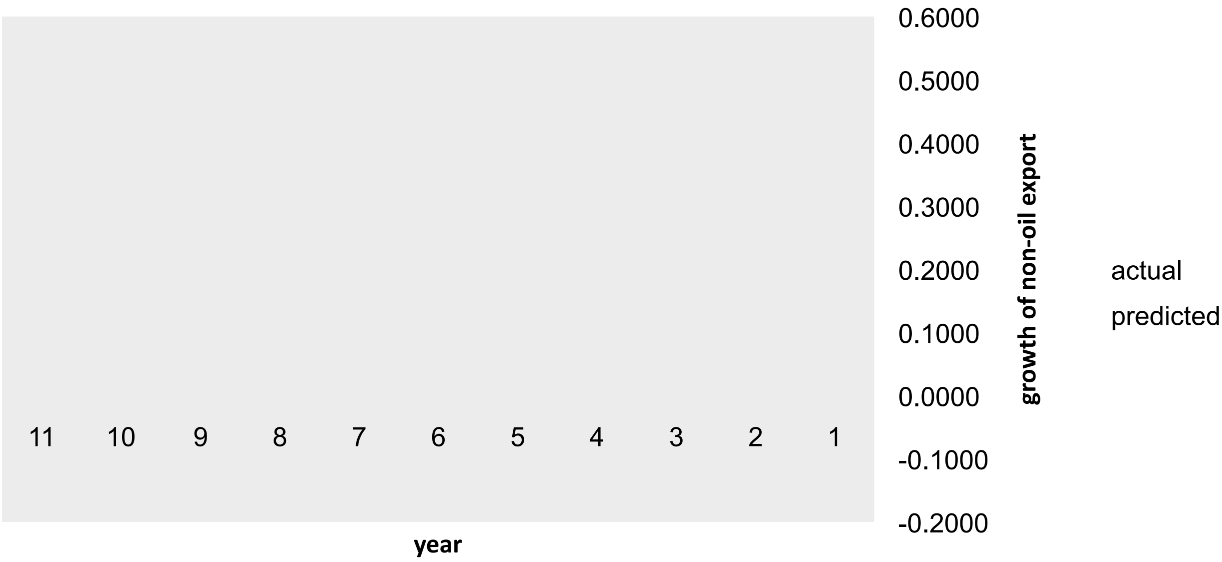


Table3-5 was compared triple pattern in standard errors.

pattern	RMSE	MAPE	Prediction error percentage	Theil in equality coefficient
First process	0.014	0.118	3.654	0.061
Second process	0.0096	0.036	2.503	0.042

Final process	0.0056	0.012	1.469	0.024

Table 3-5

It's observable that standard errors in process were decreased and the prediction exactitude was increased. In other words by moving to final process errors have considerable reduction, as errors in second process reduce within the limits of 14.6% in comparison with first processes. The difference between numeral RMSE in first and final processes pattern is equal to F (10, 10) = 62.5that is more than its critical value $F_{0.05}$ (10, 10) = 2.98. [F= MSE (1)/MSE (3) **[.**

By omitting the endogenous variables except real growth production the scale of errors in modelling and forecasting improved but by omitting the exogenous variables specially globalization indexes – growth rate of world income and growth rate of capital goods import from pattern, errors in modelling and forecasting will increase. Consequently growth rate of non-oil export in globalization are affected by exogenous and international variables.

4) CONCLUSION

The underlying objective of the paper was modelling non-oil export of Iran and in these processes it was used two group of variables (internal and external) as inputs for neural network in premier model and because of the ability of GMDH algorithm in omitting redundant variables we could gain the final pattern that have more prediction exactitude in comparison with first pattern. Also the results indicate that globalization indexes, growth rate of world income and growth rate of capital goods import are more effective on growth rate of non-oil export than the other variables. Of course the growth of real production as the most important internal factor has the effective role on non-oil export.

REFERENCES

1. Okoh. N. Rosemary , "Global Integration and Growth of Nigeria`s Non-oil Exports" , Department of Economics, Delta State University, Oxford, UK, March 2004.
2. Santos-Paulino A & Thirwall,"The impact of trade liberalization on export growth, import growth, the balance of trade and the balance of payments of developing countries" ,University of kent, Working paper.
3. Pesaran M.H. ,Kim K. and Williamson , S.D.(1997), "Measuring Globalization Industries a national Industry Approach: Emperical Evidence across five countries and over time: , Journal of International Business Studies , Forth Quarter.
4. Lori Wallach & Woodall, "Whose trade organization? The Compehensive Guide to the WTO" , new book of public citizen.
5. Charles E. Hhanrahan & Randy Schnepf , "WTO Doha Round: The Agricultural Negotiations" , September 12, 2006.
6. Rosenblatt , A.B ,and Silis, Ya. "Algorithms for Construction of Decision Function in the Form of a Complex Logic Proposition," Soviet Automatic Control, 9,1-5
7. SCOTT, D.E., and HUTCHINSON, C.E. (1976)." The GMDH Algorithm- A Technique for Economic Modeling." Report No.ECE-SY-67-1, University of Massachusetts, Dep. of Computer Sciece.
8. DUFFY, J., and FRANKLIN, M. (1975), "A Learning Identification Algorithm and Its Application to an Environment System," IEEE Transactions on Systems, Man, Cybernetics, 5, 226- 239.
9. VAKHNENKO,A.G. , and STEPASHKO,"Self Organization of Dynamic Models of Growth of Agricultural Crops for Control of Irrigated Crop Rotation," Soviet Automatic Control, 10,32-44
10. Simon J. Evenett & Carlos A. Primo Baraga , International Trade Department, www.world bank.org ,June 6, 2005.
11. "World Trade Organisation"The Geneva Briefing Book.

12. " WTO: The story in photos" , www.wto.org , 22.2.2007.
13. www.IMF.org
14. Ivakhnenko, A.G. The group method of data handling; a rival of the method of stochastic approximation. Soviet Automatic Control, 13(3), 43-55, 1968.
15. Y.P. Yurachkovskiy, "Improved GMDH algorithms for process prediction", Soviet Automatic Control c/c of Avtomatika, vol.10, no.5, pp.61-71, 1977.
16. A.G. Ivakhnenko and G.A. Ivakhnenko, "The review of problems solvable by algorithms of the group method of data handling (GMDH)", Pattern Recognition and Image Analysis, vol.5, no.4, pp.527-535, 1995.
17. G. Ivakhnenko, G. A. Ivakhnenko. "Problems of Further Development of the Group Method of Data Handling Algorithms." Part I, Pattern Recognition and Image Analysis, Vol. 10, No. 2, pp. 187–194, 2000.
18. L. Anastasakis, N. Mort. "The Development of Self-Organization Techniques in Modeling: A Review of The Group Method of Data Handling (GMDH)", Department of Automatic Control & Systems Engineering The University of Sheffield, Mappin St, Sheffield, No. 813, 2001.
19. Fang Chen , Jiuping Xu. "Factor analysis for well-off construction based on GMDH", World Journal of Modeling and Simulation, Vol. 2, No. 4, pp. 213-221, 2006.
20. Nariman-zadeh, N.; Darvizeh, A.; Darvizeh, M.; Gharababaei, H "Modelling of explosive cutting process of plates using GMDH-type neural network and singular value decomposition". Journal of Materials Processing Technology, 2002, vol. 128, no. 1-3, pp. 80-87, Elsevier Science.
21. N Nariman-Zadeh; A Darvizeh; G R Ahmad-Zadeh. "Hybrid genetic design of GMDH-type neural networks using singular value decomposition for modeling and prediction of the explosive cutting process", Journal of Engineering manufacture Proceedings of the I MECH E Part B, Volume: 217 Page: 779 -- 790, 2003.
22. N. Amanifard, N. Nariman-Zadeh, M. Borji, A. Khalkhali and A. Habibdoust, "Modelling and Pareto optimization of heat transfer and flow coefficients in microchannels using GMDH type neural networks and genetic algorithms",
Energy Conversion and Management, 2007.
23. K. Atashkari, N. Nariman-Zadeh, M. Gölcü, A. Khalkhali and A. Jamali, "Modelling and multi-objective optimization of a variable valve-timing spark-ignition engine using polynomial neural networks and evolutionary algorithms", Energy Conversion and Management, Volume 48, Issue 3, March 2007, Pages 1029

Interactive Relationship of Knowledge Transfer and Learning Capability in Enterprises

Wen-Hsiang Lai
whlai@fcu.edu.tw

Graduate Institute of Management of Technology
Feng Chia University
100, Wenhwa Rd., Seatwen, Taichung 40724, Taiwan

Abstract

The current dynamic environment prompts enterprises to realize that self-sufficient learning is not the most beneficial approach to enhancing the business core value; instead, obtaining and transferring knowledge from external enterprises is a more effective method to build a competitive advantage. The purpose of this study is to explore ways of improving the effectiveness of knowledge storage and knowledge transfer by outsourcing through interactions among enterprises and intra-enterprise learning capability. This study aims to evaluate the relations among variables from the viewpoints of outsourcing, learning capability, interactive relationship and knowledge transfer. The study finds that better interactive relationships among enterprises significantly increase the learning capability and that enterprises with higher learning capability also achieve greater efficiency in knowledge transfer; furthermore, better interactive relationships among enterprises also increase the knowledge transfer efficiency. In addition, information sharing, partner differences, and relationship sustainability do not have significant influences on an enterprise's learning capability; absorptive capacity and carrying capacity do not have positive impacts on an enterprise's knowledge transfer performance.

Key words: organizational learning capability, interactive relationship, knowledge transfer, enterprise outsourcing

1. Introduction

In the era of knowledge-based economy, the key to maximize corporate profits has changed from utilization of natural resources, labor and land to adopting knowledge oriented strategies. Enterprises are no longer stand-alone units but rather strategic partners. Increased interactions among enterprises cause individual business activities to influence each other and the industrial environment, which in turn increases the uncertainty in the competitive business environment. On the other hand, the increasing reliance on outsourcing may not generate equivalent knowledge accumulation (Gavious and Rabinowitz, 2003), and nearly 40% of the work relies heavily on outsourcing in hi-tech industries (Bettis, Bradley and Hamel, 1992). While outsourcing is the getaway to a breakthrough and internationalization for a company, the challenge lies in giving consideration to the benefits of enterprise learning, interactive relationships and knowledge transfer at the same time. High-tech industries are capital-intensive and require special attention to the quality and quantity of skilled labor. There is an increasing demand for diversified labor as well as the overall number of labor.

The present knowledge transfer focuses on the process and extent of transfer while neglecting enterprise learning, causing the imported knowledge and technology unable to be applied, maintained, disseminated and further improved. Therefore, if enterprises direct more attention to knowledge characteristics, transfer patterns and the impacts occurred through the process of knowledge transfer, much of the knowledge could be reused to help promote business growth. Enterprises must devote significant resources to learning, transformation and innovation in order to keep ahead of the competition. Knowledge has been regarded as the most valuable asset of a company and the key to innovation, and enterprise learning is the source of knowledge accumulation and innovation, therefore, this study discusses from the viewpoint of outsourcing how organizations make improvement in human resources management, resource allocation and overall business dynamics to further enhance their competitiveness in the global market.

2. Literature Review

Knowledge has been recognized as one of the important strategic resources to enterprises. The domestic and international research on enterprise knowledge management can be divided into two general categories: internal and external. The research topics range from knowledge creation, integration and transfer to strategic alliances and outsourcing partnership etc. knowledge obtained from external sources should undergo the process of selection, acquisition and learning, and the created or acquired knowledge must be disseminated to the entire staff of the enterprise. Selected knowledge must be retained by a methodical system and converted to be the enterprise's memory; this process is known as knowledge storage. Several studies have been conducted on the organization's process of knowledge creation (Nonaka and Takeuchi, 1995; Nonaka and Konno, 1998; Eleuterio, 2000; Wong, 2000), and most researchers base their research on the theory proposed by Nonaka (1991, 1994), which suggests knowledge creation involves an interaction between tacit and explicit knowledge, also known as knowledge creation spiral. The concept of knowledge creation by Nonaka and Takeuchi (1995) leads to further discussion on the intra-organizational context which facilitates knowledge creation. Nonaka and Konno (1998) propose that knowledge creation resides in both individual interactions and group interactions, and the dynamic interactions among staff members are what create the enterprise's core knowledge. A similar conclusion is reached by Eleuterio (2000) in the study of knowledge creation in material sciences and engineering, which shows knowledge is accumulated and created by both individual and group interactions. Furthermore, Weill (1993) proposes that a well-developed information infrastructure could promote the creativity of an enterprise and prompt the organization to go beyond the existing knowledge to creating a management process for knowledge. Spender and Grant (1996) suggest several measures to help promote knowledge creation, including incentive programs, team support, intrinsic motivation, and flexible information infrastructure. Thus, when external resources are no longer sufficient to support an organization's needs, the best solution is to create knowledge and develop new technology.

The integration and dissemination of knowledge is a process which converts the acquired knowledge into practical application within an organization. (Hedlund, 1994; Leonard-Barton, 1995; Teece, Pisano and Shuen, 1997). Hedlund (1994) conducts a study on knowledge management in western and Japanese companies and concludes that different types of knowledge are disseminated in different ways; furthermore, a comparison between M-form (Multidivisional form) corporation and N-form (Novelty form) corporation shows N-form performs noticeably more efficient in knowledge integration. Teece *et al*. (1997) proposes that an organization should determine a method for knowledge integration with consideration of factors such as business culture, structure, and context, and then disseminate the knowledge through a proper management mechanism to obtain benefit. Grant (1996) suggests that knowledge has exclusivity and would only be disseminated efficiently provided it is openly available and accessed. Howells (1996) proposes that technology knowledge transfer requires both explicit knowledge and tacit knowledge to maximize its applications and enhance the overall learning capability of an enterprise rather than a particular individual or unit.

Collaboration between enterprises not only reduces costs but also provides learning opportunities and creates knowledge (Inkpen, 1996). Therefore, the concept of outsourcing (particularly human resources) has become increasingly important for knowledge management. The research conducted on knowledge transfer focused mainly on the impact on enterprises' knowledge management process (knowledge flow) and the interactions through corporation collaboration (Inkpen, 1996; Inkpen and Dinur, 1998; Crossan, Lane and White, 1999). Inkpen (1996) and Inkpen and Dinur (1998) use the knowledge flow of a U.S. and Japan joint venture to discuss how parent companies create and manage knowledge through collaboration with their subsidiaries and the influence knowledge flows have over enterprises by the tacit and explicit nature of knowledge. In addition, Mowery and Rosenberg (1989) suggest that interactions, understanding and experiences in learning external knowledge are as important as the source of the knowledge in terms of learning efficiency. Senge (1990) also proposes that business mangers should convert their enterprises into a learning organization to promote and enhance the ability to acquire knowledge. Therefore, learning management in an enterprise means creating an environment to help its staff members to acquire knowledge in the most efficient way. The research on knowledge transfer among alliance enterprises focused mainly on the influence of knowledge transfer on network interfaces and types (Appleyard, 1996); for example, Appleyard (1996) performs a study on knowledge transfer among the semiconductor industry and suggests organizations provide a working environment with proper information technology, organizational structure and culture to support the development of knowledge acquisition.

Senge (1990) suggests that an organization's learning capability is its essential resource and the most important core competitiveness; it is also the organization's shared memory and symbolizes the process of change in enterprise value. Capability is a combination of resources, and the most important element is the enterprise's capability for learning external knowledge, which includes learning intention, absorptive capacity and carrying capacity. In addition, enterprise learning is closely related to previous experiences because the existing resources, such as the knowledge base, enterprise culture and various functional departments all exert strong influences on enterprise learning and the learning outcome. Nevis, Dibella and Gould (1995) propose that an organizational learning system is established based on culture, experience, core competitiveness and practical applications, which is in line with the organizational learning theory. Cohen and Levinthal (1990) suggest that the development of an enterprise's internal learning capability is to cultivate its ability to utilize external technology or knowledge, and such ability is strongly associated with an enterprise's prior related knowledge. Prior knowledge provides a reference for enterprises to assess the external technology or knowledge before it is absorbed and utilized to develop enterprises' ability to commercialize their products and technology; this is the so-called knowledge absorptive capacity. Mowery, Oxley and Silverman (1996) propose that an enterprise's learning capability is an important factor in the process of inter-organization knowledge transfer, and technological capability is one important element in determining an enterprise's learning capability. This proposition echoes the conclusion drawn by Cohen and Levinthal (1990). Nonetheless, Hamel (1991) emphasizes the use of receptivity, intention, and transparency to assess the knowledge learning capability in inter-organization knowledge transfer. The cited literature all indicates a strong relationship between learning capability and knowledge transfer and only varies in the definitions of the formation. This study adopts the proposition by Lyles and Salk (1996) and Grant (1996) and discusses learning capability in terms of absorptive capacity and integration capability.

The interactions between outsourcing partners implies the established communication, responses and adjusted behavior during the outsourcing process, that is, when enterprises engage in learning oriented collaborations, the shared knowledge and inter-enterprise interactions are affected by the committed resources invested in the process. Mjoen and Tallman (1997) point out that the traditional presumption, which believes the ownership level in joint ventures leads to higher control, is not accurate; instead, the relative bargaining power is determined by the relative importance of resources they each contribute. The integration of knowledge is influenced by past partnership experiences, which also affects knowledge transparency and indicates the smoothness in communication and the relationship of the collaborative efforts. The technical knowledge learning outcomes are affected by the degree of transparency in shared knowledge, and the overall degree of satisfaction is positively correlated with the degree of the transparency as well (Leonard-Barton, 1995). If alliance partners fail to realize this concept or are unable to reach a compromise, then miscommunication may occur, which would lead to loss of support for each other (Niederkofler, 1991); therefore, the interactive relationship between alliance partners is an critical factor in determining the knowledge learning outcomes. Mohr and Spekman (1994) suggest that tolerance between alliance partners generates trust and an efficient collaborative relationship; furthermore, mutual trust, cooperation willingness and ability to reach consensus are the key components for building a collaborative relationship, avoiding conflict and successfully transferring knowledge. Business management should incorporate activities which support alliance companies and aims for mutual benefits. Lack of communication and trust may lead to higher costs for business management and technology transfer (Clegg, 1990), thus establishing good communication and reaching consensus are the priorities for most business seeking effective collaborations.

3. Research Method

The importance of organizational ability refers to the integration of the specialized knowledge contributed by each individual and department within an organization, and this ability could be further discussed from the aspects of competitive dynamics, resource views, organizational capability and organizational learning (Grant, 1996). A strong willingness from both organizations to engage in collaboration and contribute resources promotes positive and effective interactions, which confirms the organizational learning theory that suggests the existence of a strong willingness by organizations in the initial stage of collaboration in order to create learning opportunities. Senge (1990) suggests that when enterprises plan collaborations, they usually create a harmonious business environment to promote effective learning and communication as well as facilitate positive interactive relationship and enhance staff's learning ability. However, in a changing environment, learning capability and shared information significantly affect the anticipated benefits and results; better learning capability and greater amount of shared information induce more accurate anticipated benefits and facilitate commercialization of advanced technology. Therefore, organizations with better learning capability and advanced information technology are able to establish more efficient communication and better interactive learning experiences. Argyris and Schon (1978) propose the concept of double-loop learning which implies that enterprises with better learning capability would consistently make efforts and provide feedback to enhance learning and absorptive capacities, which in turn facilitates interactions and stimulates self-reflection and efficiency. Thus, intra-enterprise learning capability affects the interaction between outsourcing partners. This study hypothesizes that:

H1: interactive relationship has positive impact on learning capability.

H1-1: quality of communication has positive impact on learning capability.
H1-2: information sharing has positive impact on learning capability.
H1-3: partner differences have positive impact on learning capability.
H1-4: degree of trust has positive impact on learning capability.
H1-5: relationship sustainability has positive impact on learning capability.

Past studies on the relation between enterprise learning and knowledge transfer suggest more successful technology transfer between organizations with comparable technical competence (Bidault and Fischer, 1994). Makhija and Ganesh (1997) stress that a company with greater learning capability achieves better learning outcomes. Szulanski (1996) conducts applied research on the practice of enterprise knowledge transfer and proposes that enterprises should direct their attention to developing learning capability besides offering inducement and incentive to reduce the difficulties in intra-enterprise knowledge transfer because enterprise learning facilitates both absorptive and adaptation capacities, accelerates knowledge transfer, and enhances learning outcomes. Lyles and Salk (1996) propose that learning capability significantly affects the outcome of knowledge transfer; they evaluate enterprises' learning capability by assessing the flexibility in joint ventures, company creativity and employee knowledge. Enterprise's learning capability is reflected in the effectiveness of knowledge transfer in inter-enterprise collaboration; on the other hand, enterprises' carrying capacity - the ability to carry out business activities or development - also has a great influence on the outcomes of enterprise learning and knowledge transfer. If an enterprise is not able to further absorb, carry, disseminate, and transfer the external knowledge, there will be a negative impact on the learning performance (Lane and Lubathin, 1998). Goh (1998) particularly emphasizes the staff members' ability to absorb knowledge and the strategy adopted to support enterprise learning in his proposed enterprise learning model. Therefore, the stronger an enterprise's learning capability, the more effective it is to acquire the target knowledge and enhance knowledge transfer. Thus, this study hypothesizes that:

H2: learning capability has positive impact on knowledge transfer

H2-1: learning intention has positive impact on knowledge transfer
H2-2: absorptive capacity has positive impact on knowledge transfer
H2-3: carrying capacity has positive impact on knowledge transfer

The enterprise learning theory states that interdependence between alliance enterprises is one of the important elements during the initial establishment of a collaborative relationship because harmonious interactions positively promote learning outcomes (Davenport, Davies and Grimes, 1999). Outsourcing is an ongoing process which involves communication, coordination, trust, implementation and evaluation, and a well-established outsourcing management mechanism facilitates the process of inter-enterprise knowledge transfer. The quality and transparency of shared knowledge significantly affect the technical knowledge learning outcomes as well. Hamel (1991) suggests that an open collaborative relationship helps enterprise knowledge learning and transfer, therefore the communication among employees and involvement in the related field are necessary to effectively learn and absorb the knowledge. An enterprise's learning strategy helps share knowledge and transfer the tacit knowledge through group interactions (Reed and Defillippi, 1990). Perlmutter and Hennan (1986) propose that lack of communication and trust leads to higher costs in management and technical knowledge transfer because infrequent contact and loss of trust implies loss of mutual interactions. When interactions are absent from the knowledge transfer process, the enterprise learning mechanism fails to operate and the knowledge is unable to be acquired, constructed or stored, which results in lower technical knowledge transfer. Therefore, Fiol (1994) points out that collaboration between organizations involves recognition and understanding of various aspects of the partner in order to proceed smoothly. Inkpen (1996) proposes that successful knowledge creation through collaboration requires two factors – knowledge management process and positive elements which include trust in alliances and a higher degree of tolerance. Therefore this study proposes the following hypothesis:

H3: interactive relationship has positive impact on the outcomes of knowledge transfer.

This study constructs the conceptual framework, as shown in Figure 1, to explore the effects among the interactive relationships between learning capacity and knowledge transfer effect. The operational definitions of these three aspects are listed in Table 1. The conceptual framework specifies the research variables as interactive relationship, learning capacity and knowledge transfer effect; some of which are readily measurable with scales developed by researchers. This study selects the scale which properly measures the survey designed for the employees who participate in the outsourcing collaboration.

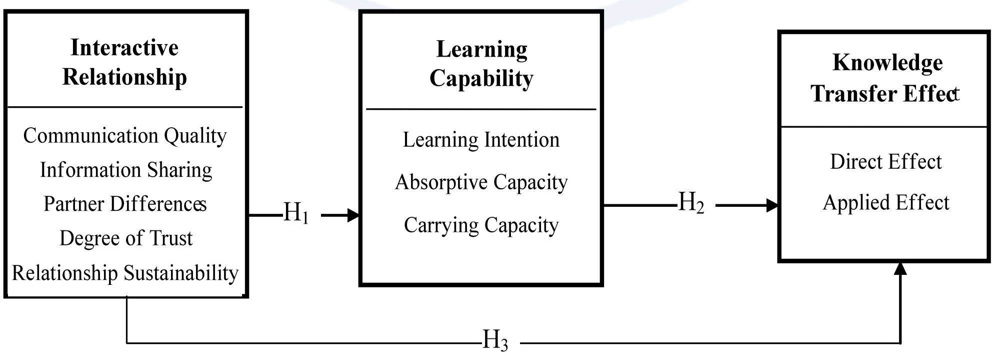


Figure 1: Conceptual Framework

Table 1: Operational definitions of variables and sub-variables

Variable	Sub-variable	Operational Definition
Interactive Relationship	Communication Quality	The accuracy, adequacy and credibility of communication between the collaborative partners.

(Lee and Kim, 1999)	Information Sharing	Sharing important or private information, knowledge and experiences.
	Partner Differences	The extent of differences in management, problem solving, and values (including corporate scale, national and organizational cultural differences) between the partners.
	Degree of Trust	The trust between the enterprise and outsourcing partner and the support given when facing possible risks.
	Relationship Sustainability	The relationship satisfaction, long-term collaborative relationship and willingness to collaborate with the same company.
Learning Capacity (Lyles and Salk, 1996; Grant , 1996)	Learning Intention	An enterprise's perspective on collaboration as a learning opportunity. It is often reflected in the enterprise's culture and business strategies.
	Absorptive Capacity	An enterprise's ability to identify, obtain and absorb new business value, and apply external information to improve productivity.
	Carrying Capacity	An enterprise's ability to organize and transfer information from various sources into clear and apprehensible knowledge.
Knowledge Transfer Effect (Chua and Pan, 2008)	Direct Effect	The direct effect from obtaining the knowledge, including fully obtaining the knowledge and achieving the expected transfer rate.
	Applied Effect	The indirect effect from obtaining the knowledge, including subsequent knowledge creation and bridging the gap with companies which possess advanced technology.

The survey is distributed through mail and e-mail to the major business companies in Taichung industrial areas which have engaged in substantial outsourcing activities in Taiwan. To avoid misrepresentation of survey samples, the selected companies are screened by phone interviews to check for the extent of outsourcing activities. The first part of the survey includes questions on enterprise outsourcing experiences, which would be used as a reference for further screening and classification of the analyzed samples. The questionnaire is divided into six parts: outsourcing experience, interactive relationship, learning capability, knowledge transfer effect, enterprise information, and personal information. The variables are measured by a five-point Likert scale, except for enterprise information and personal information. A total of 150 questionnaires are distributed to 15 business companies in the Taichung industrial area, and 90 questionnaires were returned (60% response rate), of which five were invalid, making the effective response rate 94.4% with 85 valid questionnaires.

4. Research Results and Discussions

The empirical analysis of the pretest for this study includes three parts. The first part analyzes the dimension factors and survey reliability, which uses factor analysis to evaluate the overall reliability and check if the questions need to be deleted or modified for the follow-up research development. The second part uses Pearson correlation analysis to explore the relevance among learning capability, interactive relationship and knowledge transfer effect. The third part uses regression analysis to verify the hypotheses and explore the casual relationship among the variables.

4.1 Factor and Reliability Analysis

The study uses factor analysis to determine whether a question needs to be removed or modified. This study first picks out the factors with eigenvalue greater than 1 (Hair, Anderson, Tatham and Black,1998), then use Varimax Rotation to rotate the factors, making some of the factor loadings larger and some smaller, and those with factor loadings larger than 0.5 are correlated strongly with the factor. As a result, this study removes three questions from the interactive relationship section and one question from the learning capability section. The study uses Cronbach's α to measure the reliability and internal consistency. Table 2 shows the individual reliability for each of the variable, and the overall reliability is .949, which indicates a high degree of reliability, and all variables receive high degree of reliability except for the variable of Degree of Trust.

Table 2	Reliability of Variables

Aspects	Abbrev.	Measured Variables	Abbrev.	Cronbach's α Value
Interactive Relationship	IR	Communication Quality	CQ	.830
		Information Sharing	IS	.834
		Partner Differences	PD	.909
		Degree of Trust	DOT	.557
		Relationship Sustainability	RS	.758
Learning Capacity	LC	Learning Intention	LI	.834
		Absorptive Capacity	AC	.858
		Carrying Capacity	CC	.893
Knowledge Transfer Effect	KTE	Direct Effect	DE	.876
		Applied Effect	AE	.906
Overall Reliability				.949

4.2 Pearson's Correlation Analysis

The study adopts Pearson's correlation analysis to measure the correlations between interactive relationship, learning capacity and knowledge transfer effect. The correlation coefficients are presented in Table 3. The positive Pearson's correlation coefficients in Table 3 indicate significant correlations between Interactive Relationship, Learning Capacity, and Knowledge Transfer Effect. This study concludes that the better the interactive relationship, the higher the learning capability and knowledge transfer effect, and that the higher the learning capability, the better the interactive relationship and knowledge transfer effect.

4.2.1 Learning Capability vs. Interactive Relationship

Table 3 shows positive correlations between variables except for the correlation between carrying capacity and partner differences, and the correlation between learning intention and continuous relationship. Thus better communication facilitates better learning capability and influences internal learning intention, absorptive capacity and carrying capacity. More information sharing between outsourcing partners also enhances the learning capability, including the internal learning intention, absorptive capacity and carrying capacity. On the other hand, the greater the differences between the outsourcing partners, the more significant the impact on the learning capability, which includes the internal learning intention and the absorptive capacity, however, partner differences is not correlated to carrying capacity. A greater degree of trust between the partners also brings about better learning capability. Finally, a long-term continuous relationship positively enhances the learning capability, which includes both the knowledge absorptive capacity and the carrying capacity, but there is no significant correlation with learning intention.

4.2.2 Interactive Relationship vs. Knowledge Transfer Effect

Table 3 shows positive Pearson Correlation Coefficients, which indicates positive correlations between all variables of Interactive Relationship and Knowledge Transfer Effect, except for Continuous Relationship and Applied Effect. Thus, the better the communication quality between the outsourcing partners, the better the knowledge transfer effects (both direct and applied effects). Intensive and rapid information sharing also induces better knowledge transfer effects. In addition, partner differences have a significant positive influence on the knowledge transfer effects, for a greater variety of knowledge is been learned, absorbed and transferred between the organizations. Furthermore, a higher degree of trust between the organizations brings about better direct and applied transfer effects. Finally, a long-term partnership has a significant positive correlation with the knowledge transfer effect; however, the applied effect is not immediately affected until later collaboration when the knowledge is gradually applied and spread within the organization.

4.2.3 Learning Capability vs. Knowledge Transfer Effect

Table 3 shows that Knowledge Transfer Effects (both direct effect and applied effect) have significant positive correlations with Learning Intention, Absorptive Capacity and Carrying Capacity. Therefore, precise and good learning intention induces better knowledge transfer effects, and greater absorptive capacity brings about significant knowledge transfer effects. Finally, when an organization possesses the ability to store knowledge, it also achieves better knowledge transfer effects, and both direct and applied effects show a significant positive correlation.

Table 3: Table of Correlation Coefficients

Correlation Coefficients		IR					LC			KTE	
		CQ	IS	PD	DOT	RS	LI	AC	CC	DE	AE
IR	CQ	1									
	IS	.478*	1								
	PD	.652	.479	1							
	DOT	.253*	.561*	.651**	1						
	RS	.358**	.368**	.258	.275*	1					
LC	LI	.616**	.496**	.435**	.495**	.145**	1				
	AC	.420**	.320**	.241**	.348**	.314**	.356*	1			
	CC	.375**	.263*	.174	.472**	.340**	.367	.672	1		
KTE	DE	.700**	.564**	.369**	.486**	.244*	.688**	.455**	.384**	1	
	AE	.597**	.452**	.307**	.470**	.206	.636**	.467**	.395**	.578**	1

** Correlation is significant at the 0.01 level (two-tailed) * Correlation is significant at the 0.05 level (two-tailed)

4.3. Regression Analysis

The previous correlation analysis suggests that interactive relationship is positively correlated to learning capability and the stronger the interactive relationship, the better the learning capability. The study uses multiple regression analysis to test and confirm the hypotheses. The following is the analysis results for the hypotheses.

H1: Interactive relationship has positive impact on learning capability.

This study uses learning capability as dependent variable Y_1 and interactive relationship as X_1 and derives the regression model $Y_1 = \alpha_1 + \beta_1 X_1 + \varepsilon$, where α is the intercept, $\beta 1$ is the regression coefficients and ε is the deviation. The regression analyses in Table 4 has explanatory power and reach significance level with F=46.819 at significance level $\alpha = .05$ and explanatory power .361. The following regression model is used to explore the effects of interactive relationship on learning capability: $\hat{Y}_1 = 0.941 + 0.806X_1$, where $\hat{\alpha}_1 = 0.941$ and $\hat{\beta}_1 = 0.806$. The regression analysis result verifies the significant positive correlation between interactive relationship and learning capability. That is, the stronger the interactive relationship, the better the learning capability, and the results support the hypothesis.

Table 4: Coefficient Table of the effects of interactive relationship on learning capability

Mode	unstandardized coefficient		standardized coefficient	t	significance
	estimatedβ value	standard error	β		
(constant)	.941	.414		2.273	.026**
Learning Capability (X_1)	.806	.118	.601	6.842	.000***
Where F = 46.819; P = .000***; R^2 =.361					

Note: *** denotes P<.01; ** denotes P<.05; * denotes P<.1

Learning capability is one of the most important elements for an enterprise to survive in today's rapidly changing business environment. As enterprises seek external support and outsourcing partners, they should take advantage of the opportunity to strengthen their own leaning capability by establishing good relationships with the collaborative partners through communication and information sharing and build a long-term continuous relationship. A good interactive relationship between collaborative partners facilitates the development of intra-enterprise learning capability. This study makes learning capability the dependent variable Y1, the sub-variables of interactive relationship (communication quality (X_{1-1}), information sharing (X_{1-2}), difference between partners (X_{1-3}), degree of trust (X_{1-4}) and continuous relationship (X_{1-5})) the independent variables and derives the multiple regression model $Y_1 = \alpha_{10} + \beta_{1-1}X_{1-1} + \beta_{1-2}X_{1-2} + \beta_{1-3}X_{1-3} + \beta_{1-4}X_{1-4} + \beta_{1-5}X_{1-5} + \varepsilon$, where α_{10} is the intercept, $\beta_{1-1}, \beta_{1-2}, \beta_{1-3}, \beta_{1-4}, \beta_{1-5}$ are the regression coefficients and ε is the deviation. The regression analyses in Table 5 has explanatory power and reach significance level with F=10.737 at significance level α = .05 and explanatory power .405. The following regression model is used to explore the effects of interactive relationship on learning capacity: $\hat{Y}_1 = 0.715 + 0.346X_{1-1} + 0.272X_{1-4}$, where $\hat{\alpha}_{10} = 0.715$, $\hat{\beta}_{1-1} = 0.346$ and $\hat{\beta}_{1-4} = 0.727$. The regression analysis result verifies the significant positive coloration between communication quality, degree of trust and learning capability. That is, the better the communicating quality, the better the learning capability, and the higher the degree of trust, the better the learning capability. These results support the hypothesis H_{1-1} and H_{1-4}. The correlation analysis also indicates significant positive correlations between the sub-variables of interactive relationship (information sharing, partner differences, and relationship sustainability) and learning capability.

Table 5: Coefficient Table of the effects of interactive relationship on learning capability

Mode	unstandardized coefficient		standardized coefficient	t	significance
	estimated β value	standard error	β		
(Constant)	.715	.464		1.540	.128
Communication Quality (X_{1-1})	.346	.129	.344	2.692	.009***
Information Sharing (X_{1-2})	.107	.100	.121	1.069	.288
Partner Differences (X_{1-3})	-.011	.085	-.014	-.126	.900
Degree of Trust (X_{1-4})	.272	.127	.242	2.135	.036**
Relationship Sustainability X_{1-5})	.127	.102	.120	1.246	.216
Where F = 10.737; P = .000***; R^2 =.405					

Note: ***denotes P<.01, ** denotes P<.05, * denotes P<.1

H2: Learning capability has positive impact on knowledge transfer effect

The previous correlation analysis result shows that learning capability is positively correlated to knowledge transfer effect; thus, the better the learning capability, the better the knowledge transfer effect. This study makes knowledge transfer effect the dependent variable Y_2, learning capability the independent variable X_2 and derive the regression model $Y_2 = \alpha_2 + \beta_2 X_2 + \varepsilon$. The regression analyses in Table 6 has explanatory power and reach significance level with F=56.812 at significance level α = .05 and explanatory power .406. The following regression model is used to explore the effects of learning capability on knowledge transfer effects: $\hat{Y}_2 = 1.188 + 0.666X_2$, where $\hat{\alpha}_2 = 1.188$ and $\hat{\beta}_2 = 0.666$. The regression analysis result verifies the significant positive coloration between learning capability and knowledge transfer effects. That is, the better the learning capability, the better the knowledge transfer effects, thus these results support the hypothesis H_2.

Table 6: Coefficient Table of the effects of learning capability on knowledge transfer effects

Mode	unstandardized coefficient		standardized coefficient	t	significance
	estimatedβ value	standard error	β		
(Constant)	1.188	.336		3.539	.001***
Knowledge transfer effects (X_2)	.666	.088	.637	7.537	.000***
Where F = 56.812; P = .000***; R^2 =.406					

Note: ***denotes P<.01, ** denotes P<.05, * denotes P<.1

While enterprises seek outsourcing support, they also look to maximize the benefits and enhance their own capability from the collaboration by evaluating each other's strengths and making up for their own weaknesses. Most cases involve a collaboration between enterprises with strong learning capability to even up the weaknesses; thus, enterprises with better learning capability also receive better knowledge transfer effects, which is consistent with the results of this study. Therefore the theoretical concept is supported by practical applications. This study makes knowledge transfer effect the dependent variable Y2, the sub-variables of interactive relationship (learning intention ($X_{2\text{-}1}$), absorptive capacity ($X_{2\text{-}2}$), and carrying capacity ($X_{2\text{-}3}$)) the independent variables, and derive the multiple regression model $Y_2 = \alpha_{20} + \beta_{2-1}X_{2-1} + \beta_{2-2}X_{2-2} + \beta_{2-3}X_{2-3} + \varepsilon$. The regression analyses in Table 7 has explanatory power and reach significance level with F=28.640 at significance level α = .05 and explanatory power .515. The following regression model is used to explore the effects of interactive relationship on learning capacity: $\hat{Y}_2 = 1.356 + 0.495X_{2-1}$, where $\hat{\alpha}_{20} = 1.356$ and $\hat{\beta}_{2-1} = 0.495$. The regression analysis result verifies the significant positive correlation between learning intention and knowledge transfer effects. That is, the stronger the learning intention, the better the knowledge transfer effects, thus the result supports the hypothesis $H_{2\text{-}1}$. The correlation analysis also indicates significant positive correlations between the sub-variables of learning capability (absorptive capacity and carrying capacity); therefore, learning capability and carrying capacity both have correlations with knowledge transfer effects.

Table 7: Coefficient Table of the effects of learning capability on knowledge transfer effect

Mode	unstandardized coefficient		standardized coefficient	t	significance
	estimatedβ value	standard error	β		
(Constant)	1.356	.315		4.301	.000***
Learning Intention ($X_{2\text{-}1}$)	.495	.073	.626	6.735	.000***
Absorptive Capacity ($X_{2\text{-}2}$)	.209	.136	.206	1.533	.129
Carrying Capacity ($X_{2\text{-}3}$)	-.061	.120	-.066	-.506	.614
Where F = 28.640; P = .000***; R^2 =.515					

Note: ***denotes P<.01, ** denotes P<.05, * denotes P<.1

H3: Interactive relationship has positive impact on knowledge transfer effect

The previous correlation analysis result shows that interactive relationship is positively correlated to knowledge transfer effect; thus, the better the interactive relationship, the better the knowledge transfer effect. This study makes knowledge transfer effect the dependent variable Y_3, interactive relationship the independent variable X_3 and derive the regression model $Y_3 = \alpha_3 + \beta_3 X_3 + \varepsilon$. The regression analyses in Table 8 has explanatory power and reach significance level with F=61.787 at significance level $\alpha = .05$ and explanatory power .427. The following regression model is used to explore the effects of interactive relationship on knowledge transfer effect: $\hat{Y}_3 = 0.492 + 0.916 X_3$, where $\hat{\alpha}_3 = 0.492$ and $\hat{\beta}_3 = 0.916$. The regression analysis result verifies the significant positive coloration between interactive relationship and knowledge transfer effects. That is, the better the interactive relationship, the better the knowledge transfer effects, thus the result supports the hypothesis H_3

Table 8: Coefficient Table of the effects of interactive relationship on knowledge transfer effects

Mode	unstandardized coefficient		standardized coefficient	t	significance
	estimatedβ value	standard error	β		
(Constant)	.492	.410		1.202	.233
Interactive relationship (X_3)	.916	.117	.653	7.860	.000***
Where F = 61.787; P = .000***; R^2 =.427					

Note: ***denotes P<.01, ** denotes P<.05, * denotes P<.1

Most successful outsourcing partnerships are built upon good communication and effective collaborations, which are two of the variables of this study. When the motivation for outsourcing is based upon knowledge learning, enhancing staff skills, and knowledge application, organizations tend to devote more attention to cultivating a good interactive relationship to ensure the quality in the process and outcome. During the course of the outsourcing engagement, any meetings, discussion, lectures, negotiation and exchange of ideas are ways to establish a good interactive model, which aims to achieve the expected result. This study applies the actual data to the concepts of business outsourcing strategies and points out the key relationships among the variables. The test results of the hypotheses are presented in Table 9.

Table 9: Test Results of H1, H2 and H3

Hypothesis	**Test Result**	**Description**

H_1		Supported	Interactive relationship has positive impact on learning capability
	H_{1-1}	Supported	Communication quality has positive impact on learning capability
	H_{1-2}	Rejected	Information sharing has positive impact on learning capability
	H_{1-3}	Rejected	Partner differences has positive impact on learning capability
	H_{1-4}	Supported	Degree of trust has positive impact on learning capability
	H_{1-5}	Rejected	Relationship sustainability has positive impact on learning capability
H_2		Supported	Learning capability has positive impact on knowledge transfer effect
	H_{2-1}	Supported	Learning intention has positive impact on knowledge transfer effect
	H_{2-2}	Rejected	Absorptive capacity has positive impact on knowledge transfer effect
	H_{2-3}	Rejected	Carrying capacity has positive impact on knowledge transfer effect
H_3		Supported	Interactive relationship has positive impact on knowledge transfer effect

5. Conclusion

The study uses a cross-sectional design to investigate the process of enterprise knowledge transfer and the transformation of the enterprises in making adjustment in their overall operation, communication patterns, and interaction mechanisms to become a learning organization. The study suggests that interaction is a key element in enterprise collaborations. A good inter-enterprise interaction contributes to the development of learning capability, and appropriate cross-enterprise interactions ensure the effectiveness of knowledge transfer. The data shows that interactive relationship is one of the important factors affecting the outcomes of knowledge transfer; lack of trust or poor communication causes difficulties for employees in accommodation and comprehension of the outsourcing activity, which would lead to delays in the process of knowledge transfer and diminish employee's learning intention. The differences in invested funds or resources often result in differences in primary and secondary bargaining power, which affect the collaboration direction and the stability of the outsourcing relationship. Therefore, a smaller difference in enterprises' learning bases brings about smaller gaps in interaction, communication, and power and also induces better transfer effects and learning outcomes. As a result, smaller companies may be at risk of being replaced after the outsourcing engagement. Therefore, the differences between collaborative partners are a force to stimulate diverse thinking and facilitate innovation, but the difference should not be too drastic such that it hinders the knowledge transfer and loses the purpose of the collaboration.

According to the empirical results of the study, maintenance of good interactions between collaborative partners is one of the factors to ensure effective knowledge transfer. Both the bargaining power derived from the organizations' resources and the degree of trust between collaborative partners affect the stability of collaborative relationships. The degree of trust is reflected in the communication frequency, the depth of content and the transparency of performance. When both parties are closely connected and have frequent communication, they are able to understand each other's ideas and provide assistance to ensure the effectiveness of knowledge transfer. From the aspect of organization learning theory, organizations which take part in outsourcing collaboration usually have strong intentions to enhance their own capability by learning from the collaborative partners. The organization's learning capability is assessed to ensure sufficient employees and facilities are in place for knowledge acquisition, and the carrying capacity is evaluated to ensure successful knowledge transfer. Thus, outsourcing is a way of grasping the market niche as well as facilitating organizational learning. When an organization has advanced learning capability, the employees are capable of providing quick feedback, getting to the central issues and creating frequent positive interactions. The implementation of the transferred knowledge in an organization is a manifestation of learning capability.

Organizations with good learning capability are able to effectively transfer knowledge and further disseminate and transform the learned knowledge to make a substantial positive impact on business growth.

References:

1. Appleyard, M.M. 1996. How does knowledge flow? Interfirm patterns in the semiconductor industry. *Strategic Management Journal*, 17, 137-154.
2. Argyris, C. and Schon, D. 1978. *Organizational Learning: A Theory of Action Perspective*, Reading MA: Addision-Wesley.
3. Bettis R.A., Bradley S.P., and Hamel G. 1992. Outsourcing and industrial decline. *Academy of Management Executive*, 6(1), 7-22.
4. Bidault, F. and Fischer W.A. 1994. Technology Transaction: Networks over Markets. *R&D Management*, 24 (4), 373-386.
5. Chua, A.L. and Pan, S.L. 2008. Knowledge Transfer and Organizational Learning in IS Offshore Sourcing. *Omega the International Journal of Management Science*, 36, 267-281.
6. Clegg, J. 1990. The Determinants of Aggregate International Licensing Behavior: Evidence from Five Countries. *Management International Review*, 30(3), 231-251.
7. Cohen, W.M. and Levinthal, D.A. 1990. Absorptive Capacity: a New Perspective on Learning and Innovation. *Administrative Science Quarterly*, 35(1), 128-152.
8. Crossan, M.M., Lane, H.W. and White, R.E. 1999. An organizational learning framework: From intuition to institution. *Academy of Management*, 24(3), 522-537.
9. Davenport, S., Davies, J. and Grimes, C. 1999. Collaborative Research Programmes: Building Trust form Difference. *Technovation*, 19(1), 31-40.
10. Eleuterio, H.S. 2000. On knowledge creation in the material sciences and engineering: A practitioner's perspective. *Asia Pacific Journal of Management*, 17, 353-360.
11. Fiol, C.M. 1994. Consensus, Diversity, and Learning in Organizations. *Organization Science*, 5(3), 403-420.
12. Gavious, A.; Rabinowitz, G. 2003. Optimal knowledge outsourcing model. *Omega the International Journal of Management Science*, 31, 451-457.
13. Goh, S.C. 1998. Toward a Learning Organization: The Strategic Building Blocks. *SAM Advanced Management Journal*, 63(2), 15-22.
14. Grant, R.M. 1996. Toward a Knowledge-Based Theory of the Firm. *Strategic Management Journal*, 17, 109-122.
15. Hamel, G. 1991. Competition For Competence and Interpartner Learning Within International Strategic Alliances. *Strategic Management Journal*, 12, 83-103.
16. Hair, J.F. Jr., Anderson, R.E., Tatham, R.L., Black, W.C., Multivariate Data Analysis（5th ed.）,Englewood Cliffs, NJ：Prentice-Hall, 1998.
17. Hedlund, G. 1994. A Model of Knowledge Management and the N-form Corporation. *Strategic Management Journal*, 15, 73-90.
18. Howells, J. 1996. Tacit Knowledge, Innovation and Technology Transfer. *Technology Analysis & Strategic Management*, 8 (2), 91-106.
19. Inkpen, A.C. 1996. Creating knowledge through collaboration. *California Management Review*, 39(1), 123-140.
20. Inkpen, A.C. and Dinur, A. 1998. Knowledge Management Process and international joint ventures. *Organization Science*, 9(4), 454-468.
21. Lane, P.J. and Lubatkin, M. 1998. Relative Absorptive Capacity and Interogranizational Learning. *Strategic Management Journal*, 19(5), 461-477.

22. Lee, J.N. and Kim, Y.G. 1999. Effect of Partnership Quality on IS Outsourcing Success: Conceptual Framework and Empirical Validation. *Journal of Management Information Systems*, 15(4), 29-61.
23. Leonard-Barton, D. 1995. *Wellsprings of Knowledge*, Harvard. Business School Press, Massachusetts.
24. Lyles, M.A. and Salk, J.E. 1996. Knowledge Acquisition from Foreign Parents in International Joint Ventures: An Empirical Examination in the Hungarian Context. *Journal of International Business Studies*, Special Issue, 887-903.
25. Makhija, M.V. and Ganesh, U. 1997. The Relationship Between Control and Partner Learning in Learning-Related Joint Ventures. *Organization Science*, 8(5), 508-527.
26. Mjoen, H. and Tallman, S.1997. Control and Performance in International Joint Ventures. *Organization Science*, 8(3), 257-274.
27. Mohr, J. and Spekman R. 1994. Characteristics of Partnership Success: Partnership Attributes, Communication Behavior, and Conflict Resolution Techniques. *Strategic Management Journal*, 15, 135-152.
28. Mowery, D.C. and Rosenberg, N. 1989. *Technology and the Pursuit of Economic Growth*, New York: Cambridge University Press.
29. Mowery, D.E., Oxley, J.E. and Silverman, B.S. 1996. Strategic Alliances and Interfirm Knowledge Transfer. *Strategic Management Journal*, 17, 77-91.
30. Nevis, E.C., Dibella, A.J. and Gould, J.M. 1995. Understanding Organizations as Learning Systems. *Sloan Management Review*, 36(2), 73-85.
31. Niederkofler, M. 1991. The Evolution of Strategic Alliances: Opportunities for Managerial Influence. *Journal of Business Venturing*, 6, 237-257.
32. Nonaka, I. 1991. The knowledge-creating company. *Harvard Business Review*, 69, 96-104.
33. Nonaka, I. 1994. A Dynamic Theory of organizational Knowledge Creation, *Organization Science*, 15(1), 14-37.
34. Nonaka, I. and Konno, N. 1998. The Concept of "Ba": Building a foundation for knowledge creation. *California Management Review*, 40(3), 40-54.
35. Nonaka, I. and Takeuchi, H. 1995. *The Knowledge-Creating Company*. N.Y.: Oxford University Press.
36. Perlmutter, H.V. and Hennan, D.A. 1986. Cooperate to Compete Globally. *Havard Business Review*, 64(2), 136-152.
37. Reed, R. and Defillippi, R.J. 1990. Casual Ambiguity, Barriers to Imitation, and Sustainable Competitive Advantage. *Academy of Management Review*, 15, 88-102.
38. Senge, P. 1990. *The Fifth Discipline*, NY: Double -day.
39. Spender, J.C. and Grant, R.M. 1996. Knowledge and the Firm: Overview. *Strategic Management Journal*, 17, 5-9.
40. Szulanski, G. 1996. Exploring Internal Stick ness: To the Transfer of Best Practice within the Firm. *Strategic Management Journal*, 17, 27-43.
41. Teece, D.J., Pisano, G. and Shuen, A. 1997. Dynamic Capabilities and Strategic Management. *Strategic Management Journal*, 18(7), 509-533.
42. Weill, B.M.P. 1993.Improving Business and Information Strategy Alignment: Learning from the Banking Industry. *IBM Systems Journal*, 32(1), 162-179.
43. Wong, P.K. 2000. Knowledge creation management: Issue and challenge. *Asia Pacific Journal of Management*, 17, 193-200.

Alternative Dispute Resolution in Islamic Finance: From Adversarial to Non-Adversarial Justice

Surianom Miskam
Dr Nor'Adha Abd Hamid
Faculty of Management and Muamalah
International Islamic University College Selangor
Bandar Seri Putra
43600 Kajang
Selangor, Malaysia
surianom@kuis.edu.my
noradha@kuis.edu.my

Alternative Dispute Resolution in Islamic Finance: From Adversarial to Non-Adversarial Justice

Surianom Miskam
Dr Nor'Adha Abd Hamid
Faculty of Management and Muamalah
International Islamic University College Selangor

Abstract

As Islamic financial products and services continue to gain in popularity in the global market, there is a need to relook at the entire legal framework focusing on the court's jurisdiction in dealing with Islamic finance disputes. The legal position in Malaysia is that any disputes arising from Islamic financial transaction fall under the jurisdiction of the civil courts which in fact, is adversarial in nature. However, there are other dispute resolution mechanisms available for the parties to settle their disputes without having to go to court. The said alternative dispute resolution mechanisms offer speedier way of settling disputes, freedom of choice over laws, procedures and language of the proceedings to the parties. This paper will examine the legal framework in practice which includes discussion on relevant legislations in force in Malaysia. This paper attempts to identify the alternative dispute resolution mechanisms available, the features and its significance, not only to Islamic financial system in Malaysia but also at the international level as Islamic products and services go global. Reference will also be made to other jurisdictions in Asia as comparison to evaluate the effectiveness of this so called non-adversarial justice.

Keywords: *Alternative dispute resolution – Islamic finance – jurisdiction of the court – disputes*

Introduction

Alternative dispute resolution (ADR) is not something new in the justice system. Its development and application has proliferated throughout the world over the years and Malaysia is part of this development. ADR in Malaysia was first formalised with the introduction of the Arbitration Act 1952 which was then replaced by the Arbitration Act 2005.

Arbitration and mediation are the most common type of ADR practiced in financial disputes in Malaysia. Arbitration is a method of dispute resolution which involves the disputants presenting their case before an independent, impartial but expert arbitrator who possesses knowledge of the law and upon examination of the facts of the case makes a decision which, if the parties have so agreed, will be binding on the parties while mediation is a process in which a neutral third party draws the disputants to an agreed settlement of their conflict. Other types of ADR available and being practiced throughout the world are facilitation, case appraisal, fact finding, mini trial, private judging, summary jury trial, negotiation and ombudsman.

Jurisdiction of the Court in Malaysia in Islamic finance disputes

It is settled that in Malaysia, Islamic finance disputes fall under the civil courts jurisdiction. This development is due to the fact that Islamic banking and Takaful are considered as under the item 'finance' provided in the First List, Ninth Schedule of the Federal Constitution. In this respect, the Shariah courts only have jurisdiction to hear any cases that fall within the State List in the Federal Constitution and this excludes any Islamic financial disputes. Banking as well as the incorporation and regulation of corporation falls within the Federal List. Banks are companies incorporated under the Companies Act 1965. Accordingly they fall within the jurisdiction of the civil courts.

The Three Lists contained in the Ninth Schedule of the Constitution are described in Article 74; they are the Federal List (List 1), the State List (List 2) and the Concurrent List (List 3). The relevant parts are as follows:

List I

Item 7: Finance including

(j) banking

(k) bills of exchange, promissory notes and other negotiable instruments

(l) foreign exchange

Item 8: Trade, commerce and industry including:

(c) incorporation, registration and winding up of company

(d) insurance

List II

Islamic law and personal and family law of persons professing the religion of Islam including .... except in regard to matters included in the Federal List.

It is clear that List II does not include banking, insurance, companies, contract and other matters which are the subject matter of Islamic finance. Thus any Islamic finance cases come under the

Federal List since it refers to commercial dealings, even though it actually falls under the purview of Islamic law.

According to the Practice Direction No. 1/2003, paragraph 2, all Islamic banking cases under the Code 22A filed in the High Court of Malaya will be registered and heard in the High Court Commercial Division. This Special High Court will only hear Islamic banking cases and not conventional cases. This directive is also applicable to all High Courts, Sessions Courts and Magistrates' Courts in Malaysia with effect from 6 February 2003 which means that Islamic banking cases will be registered using new code 22A for High court, 52A for Session court an 72A for Magistrate's court. However, in those courts other than the Muamalah Bench in High Court of Kuala Lumpur, Islamic banking cases will be dealt with by the same judge or magistrate who is dealing with conventional banking and commercial cases which are registered using Code 22 (High Court), Code 52 (Sessions Court) and 72 (Magistrate's Court) and any other cases registered in those courts.

The civil court system in Malaysia is, in reality, adversarial in nature where litigants present their cases before a sitting alone judge who will decide based on the evidence and submissions forwarded by the respective counsels. As Islamic finance disputes fall under the same purview, all disputes arising out of Islamic financial transactions shall be subject to the same procedure and process as experienced by its conventional counterpart.

As Islamic financial products and services continue to gain in popularity in the global market, there is a need to relook at the entire legal framework focusing on the court's jurisdiction in dealing with Islamic finance disputes. However, there are other dispute resolution mechanisms available for the parties to settle their disputes without having to go to court. The said alternative dispute resolution mechanisms offer speedier way of settling disputes, freedom of choice over laws, procedures and language of the proceedings to the parties.

Alternative Dispute Resolution in Islamic Finance: The practice in Malaysia

Kuala Lumpur Regional Centre for Arbitration, Malaysia (KLRCA)

The Kuala Lumpur Regional Centre for Arbitration (KLRCA) was established in 1978 by the Asian-African Legal Consultative Organisation (AALCO) to provide institutional support as a neutral and independent venue for the conduct of domestic and international arbitration. By virtue of an agreement between the Government of Malaysia and AALCO, the Government of Malaysia supported the establishment of a regional centre for commercial arbitration in Kuala Lumpur and eventually agreed to provide the facilities for the establishment and functioning of such a centre. KLRCA was accorded with independence and certain privileges and immunities for the purposes of executing its functions as an international institution.

KLRCA is a non-profit non-governmental international arbitral institution that adopts the UNCITRAL Arbitration Rules with modifications, i.e. The Rules for Arbitration of the Kuala Lumpur Regional Centre for Arbitration (KLRCA Rules). KLRCA is under the administration of a Director under the supervision of the Secretary General of AALCO.

The roles and functions of KLRCA are:

- To promote international commercial arbitration in the Asia-Pacific region

- To co-ordinate and assist the activities of existing arbitral institutions in the Asia-Pacific region
- To render assistance in the conduct of ad hoc arbitrations, particularly those held under the UNCITRAL Rules
- To assist in the enforcement of arbitral awards
- To provide for arbitration under the auspices of KLRCA
- To carry out the functions envisaged in the agreement with the International Centre for the Settlement of Investment Disputes (ICSID)
- To provide alternative options for the settlement of disputes such as mediation/conciliation under the Conciliation Rules of the KLRCA
- To administer international and domestic .my domain name disputes under MYDRP Rules and Policy and the Supplemental Rules of KLRCA
- To administer generic top level domain name disputes under an MOU signed with the Asian Domain Name Dispute Resolution Centre (ADNDRC) and Hong Kong International Arbitration Centre (HKIAC)
- To appoint arbitrators for disputing parties, as and when requested, under the Rules for Arbitration of KLRCA and the Malaysian Arbitration Act, 2005

The Convention on the Recognition and Enforcement of Foreign Arbitral Awards (the Convention) was introduced to provide common legislative standards for the recognition of arbitration agreements and court recognition and enforcement of foreign and non-domestic arbitral awards. The principal aim of the Convention is that foreign and non-domestic arbitral awards will not be discriminated against and it obliges parties to ensure such awards are recognised and generally capable of enforcement in their jurisdiction in the same way as domestic awards. An ancillary aim of the Convention is to require courts of parties to give full effect to arbitration agreements by requiring courts to deny the parties access to court in contravention of their agreement to refer the matter to an arbitral tribunal.

Financial Mediation Bureau (FMB)

The Financial Mediation Bureau (FMB) is an independent body set up to help settle disputes between customer and financial services providers who are its members. It was established with the mission to provide consumers with a vehicle for an objective and timely resolution of disputes, claims and complaints arising from services provided by financial institutions which consist of the commercial banks, Islamic banks, merchant banks, finance companies, insurance companies, takaful operators and card issuers which includes dispute relating to banking/financial related, personal loans or personal financing-i, housing loans or house financing-i, Automated Teller Machine (ATM), cash deposit machine, credit/charge card or credit/charge card-i, hire purchase or hire purchase-i, savings account or saving account-i, current account or current account-i, fixed deposit or general/special/specific investment account-i, remittances, electronic banking, internet banking and insurance/takaful related disputes.

The FMB has jurisdiction to deal with complaints, disputes or claims involving a financial loss, subject to certain limitation. For banking and financial related dispute, the claim should not exceed RM100 000 except for fraud cases involving payment instruments, credit cards, charge cards, ATM cards and cheques for which the limit is not more than RM25 000. For insurance and takaful related dispute, the bureau has jurisdiction to deal with cases where the claim does not exceed RM200 000 for motor and fire insurance/takaful, RM100 000 for others and RM5000 for third party property damage.

However the FMB will not consider complaints, disputes or claims relating to general pricing, product policies or services of the members, credit decisions (approval, rejection and rescheduling of loans), fraud cases (other than for fraud cases involving payment instruments, credit cards, charge cards, ATM cards and cheques for which the limit is not more than RM25,000), cases whic are time barred or more than 6 years and cases that have been or are referrefed to the court and/or for arbitration.

Award or decision of the FMB is binding on the institutions but not the complainant. If the complainant is not satisfied with the award, the complainant is at liberty to initiate legal action or proceed to arbitration. The mediation service by MFB is provided free-of-charge to the complainant and this service is available to all consumers, irrespective of their positions, status or location, who have complaints, disputes or claims, subject to the specified limits, against financial service providers. Furthermore, the mediation process including decision is confidential to the parties involved and the mediator appointed is independent in carrying out his or her duties. This process does not involve lengthy and costly litigation process as compared to court litigation procedure. It is a fast, convenient and efficient way to resolve complaints against the financial service provider institutions.

Alternative Dispute Resolution in Islamic Finance: Legal Provisions

Arbitration Act 2005

The Arbitration Act 2005 (Act 646) was enacted on 30 December 2005 to bring about wholesale reform of the arbitral regime. It is applicable to all commercial disputes including Islamic finance disputes where parties agree to refer to arbitration by virtue of an arbitration agreement signed by them. Chapter 3 (Section 12 – 17) deals with composition of arbitrators whereby section 12 in particular provides that the parties are free to determine the number of arbitrators in their case.

Chapter 4 (Section 18 – 19) provides for the jurisdiction of arbitral tribunals established under this Act while Chapter 5 (Section 20 – 29) further provides for the conduct of arbitral proceeding. Part III of the 2005 Act provides for the court to exercise some control over arbitration proceedings. Section 21 grants the liberty to parties as to the procedure to be followed by the arbitral tribunal in conducting the proceedings. Parties are also given the liberty as to the language to be used during the proceeding by virtue of section 26.

Section 36 stipulates that an award made by an arbitral tribunal pursuant to an arbitration agreement shall be final and binding on the parties and may be relied upon by any party by way of defence, set-off or otherwise in any proceedings in any court and the arbitral tribunal shall not vary, amend, correct, review, add to or revoke an award which has been made except as specifically provided for in section 35.

Another significant provision of the Act is section 38 which states that on an application in writing to the High Court, an award made in respect of an arbitration where the seat of arbitration is in Malaysia or an award from a foreign State shall, subject to this section and section 39 be recognised as binding and be enforced by entry as a judgment in terms of the award or by action.

The Rules for Arbitration of Kuala Lumpur Regional Centre for Arbitration (Islamic Banking and Financial Services) 2007

The Rules for Arbitration of Kuala Lumpur Regional Centre for Arbitration (Islamic Banking and Financial Services) 2007 shall be applicable for the purposes of arbitrating any commercial contract, business arrangement or transaction that is based on Shariah principles. Thus any disputes arising out of any Shariah financial transactions which are subject to arbitration process shall be governed by the Rules.

KLRCA's model clause of arbitration to be adopted by any party who wishes to commit any dispute to arbitration under the KLRCA Rules is as follows:

> Any dispute, controversy or claim arising from Islamic Banking business, takaful business, Islamic financial business, Islamic development financial business, Islamic capital market products or services or any other transaction business which is based on Shariah principles out of this agreement/contract shall be decided by arbitration in accordance with the Rules for Arbitration of Kuala Lumpur Regional Centre for Arbitration (Islamic Banking and Financial Services)."

Central Bank of Malaysia Act 2009

As far as alternative dispute resolution is concerned, the newly passed legislation provides that the Shariah Advisory Council on Islamic Finance shall be referred to by the arbitrator for the ascertainment of Islamic law for the purposes of Islamic financial business. The requirement for reference to Shariah Advisory Council for ruling from court or arbitrator is expressly provided in section 56 (1) which states that:

> "Where in any proceedings relating to Islamic financial business before any court or arbitrator any question arises concerning a Shariah matter, the court or the arbitrator, as the case may be, shall
>
> (a) Take into consideration any published rulings of the Shariah Advisory Council; or
>
> (b) Refer such question to the Shariah Advisory Council for its ruling."

The provision requires the judge or arbitrator who is presiding over any dispute arising from Islamic financial business to refer to the published rulings of the Shariah Advisory Council or to request for advice from the Council to determine any issue concerning a Shariah matter before them.

Under the repealed section 16B (8) of the Central Bank Act 1958 it was provided that:

> "Where in any proceedings relating to Islamic banking business and Islamic financial business which is based on Shariah principles before any court or arbitrator any questions arises concerning a Shariah matter, the court or the arbitrator may refer such question to the Shariah Advisory Council for its ruling. Any ruling made by the Shariah Advisory

> Council pursuant to a reference by a court, be taken into consideration by the court and if the reference was made by an arbitrator, be binding on the arbitrator".

As a matter of fact, section 16B (8) of the repealed Act does provide for the court to take into account any written directives issued by the Central Bank. This directive could be issued by the bank to mitigate the defaulting sum to avoid injustice in the judgment of the court. (Abd Rani Kamarudin, 2007). Any request for advice or ruling of the Shariah Advisory Council under this Act or any other law shall be submitted to the secretariat which is established under section 54. In case of conflict between ruling issued by a Shariah committee of an Islamic financial institutions and ruling issued by the Shariah Advisory Council, the ruling of the Shariah Advisory Council shall prevail and be applicable.

In order to ensure that any deliberation of the Shariah Advisory Council will bind the courts and the arbitrator as well as the financial institutions as provided under the repealed Act, section 57 comes into play. It provides that any ruling made by the Shariah Advisory Council pursuant to a reference made under Chapter VII shall be binding on the Islamic financial institutions under section 55 and the court or arbitrator making a reference under section 56. (Ahmad Suhaimi Yahya, 2009). The provision clearly states that any ruling made by the Council will be binding on the civil court and the arbitrator which means the court and the arbitrator must follow the ruling to arrive at their decision and the ruling shall form part of the judgment of the court in Islamic finance cases. (Tengku Dato' Hasmuddin Tengku Othman, 2009)

Latest Development in Malaysia: Court Annexed Mediation

The court annexed mediation is a free mediation programme using judges as mediators to help the disputing parties in litigation find a solution. It is a service provided by the judiciary as an alternative to a trial, which was a win-lose proposition. To this effect the Kuala Lumpur Court Mediation Centre was established to run the pilot project and later extended to Kuantan and Klang, followed by other part of the country.

The court annexed mediation programme is integrated into the court process to ensure that mediation is available to all litigants and it might also be mandated as part of the civil litigation process as it is provided at no cost to the parties and nothing is lost by attempting to mediate a solution. The judiciary intended to send a strong message to litigants and lawyers that the process is under the umbrella of the courts. For this purpose, the centre is set up in the court building. In addition, the mediation process will no longer be conducted in the judges' chambers but only at the centre. There will be a panel of appointed mediators who are actually judges (from the High Court and Sessions and Magistrate's courts), but they will sit as and be called mediators.

Former Chief Justice Tun Zaki Tun Azmi (as he then was) had outlined three advantages of this court annexed mediation introduced by the judiciary. First, a court-ordered mediation required the parties and their counsels to commit to the mediation process. As this is done under the court authority, parties would have no option but to make good use of the time allocated and try to communicate and settle the dispute between them. Second, this process could help litigants to revise their thinking, reassess the risk of not agreeing and move toward agreement because sometimes, litigants refuse to offer settlement for fear that they have to admit they weaknesses and mistakes in their case. Third, the mediation proceedings are not limited to what is legally relevant. The parties could discuss wider issues to work out a solution. If mediation is successful, parties could avoid the stress of trial and save cost and time while keeping valuable personal or commercial relationships intact. This mediation session is flexible and any settlement reached by the parties shall be recorded as judgment of the court and binding on the parties.

Alternative Dispute Resolution in Other Jurisdictions

Cairo Regional Centre for International Commercial Arbitration (CRCICA)
This centre provides specialised services to settle trade and investment disputes, through fair operations of expeditious and economical procedures. This constitutes a wholly integral dispute-resolution mechanism which employs various effective processes of arbitration and includes also alternative dispute resolution techniques such as conciliation, mediation and technical expertise to parties.

International Islamic Mediation Arbitration Centre (IMAC)
It was established with the objectives of conducting mediations and arbitrations; promotion of international commercial arbitration; coordinating the activities of, and offering assistance to, existing arbitration institutions in the region; providing assistance to ad hoc arbitrations, including acting as appointing authority, particularly in cases where they are taking place in accordance with the UNCITRAL Rules; providing assistance in the enforcement of arbitral awards; and providing assistance in the settlement of disputes referred to it by disputing parties.

Hong Kong International Arbitration Centre (HKIAC)
HKIAC was established in 1985 by a group of leading businessmen and professionals in an effort to meet the growing need for arbitral services in Asia. The Centre is governed by a council composed of leading businesspeople and professionals from all around the world who possess a wide variety of skills and experience. The HKIAC administers arbitrations and other dispute resolution activities, including mediation and adjudication.

Dubai International Arbitration Centre (DIAC)
The Centre provides the regional and international business communities with an exclusive service at affordable rates. It was established with the objectives to supply facilities for conducting commercial arbitration, promoting the settlement of disputes by arbitration, as well as developing a pool of arbitrators in the practice of international arbitration. It aims to provide efficient, flexible and impartial administration of disputes, appointing arbitrators, choosing a venue and fixing fees of arbitrators and conciliators. DIAC selects arbitrators of the highest ability and professional competence and keeps information in relation to arbiters and mediators, of different nationalities and varied legal backgrounds which is available to the disputing parties.

Conclusion

ADR is a win-win innovation concept. It improves the application to out-of-court settlement over conventional a judicial proceeding which is adversarial in nature. It is less expensive, less litigious and non-adversarial methods of dispute resolution. The said alternative dispute resolution mechanisms offer speedier way of settling disputes, freedom of choice over laws, procedures and language of the proceedings to the parties.

The dispute resolution through mediation and arbitration has been acknowledged as an appropriate mechanism for resolution of disputes especially for large risk takaful coverage in general takaful business. The parties involved may appoint a person who has special expertise in the case of dispute as the mediator or arbitrator. It offers speedier way of settling disputes, freedom of choice over laws, procedures and language of the proceedings to the parties. As Tan Sri Dr. Zeti Akhtar Aziz, Bank Negara of Malaysia governor was quoted as saying in StarBiz dated 26th. August 2004, as follows:

> “To complement the court system, disputes may also be referred to the arbitration centre for resolution. In this regard, the Kuala Lumpur Regional Centre for Arbitration will be enhanced to serve as a platform to deal with cases involving Islamic banking and finance, and to extend these services beyond our borders”.

It is possible to say that ADR can supplement the existing court system to provide better access to justice for the people. The goal is only one – to achieve justice socially, economically and politically. As far as Islamic finance is concerned, the most significant characteristic of this alternative dispute resolution is reference to the Shariah Advisory Council of the Central Bank of Malaysia. The law requires the arbitrator who is presiding over any dispute arising from Islamic financial business to refer to the published rulings of the Shariah Advisory Council or to request for advice from the Council to determine any issue concerning a Shariah matter before them. Hence, access to justice for Islamic finance disputes would be meaningful if their system of justice yields results through a fair process, reflecting both sides ‘win-win settlement’ and within a reasonable time and expenses. Since the world has become more ‘interdependent’ and more complex, the variety techniques of dispute resolution should promote all the good values between both disputants in order to innovate ‘win-win settlement’.

Bibliography

Abdul Rani Kamarudin, (2007). *Istihsanas The Basis of Shariah Compliancy in Bai Bithaman Ajil End Financing With Special Reference to the Case of Malayan Banking Berhad v. Ya’kup bin Oje & Anor [2007] 6 MLJ 389 at [2007] 6 MLJ lxxvi, [2007] 6 MLJA 76*

Ahmad Suhaimi Yahya. (2009). *Isu-isu Shariah Dalam Menjadikan Perundangan Sivil Sebagai Rujukan Bagi Kewangan Islam.*

Associate Professor Dr Abdul Rani bin Kamarudin, *Istihsanas The Basis of Shariah Compliancy in Bai Bithaman Ajil End Financing with Special Reference To The Case of Malayan Banking Berhad v Yaakub bin Oje [2007] 6 MLJ lxxvi*

Datuk Sheikh Ghazali bin Haji Abd Rahman, *Cabaran Institusi Syariah Dalam Menghadapi Cabaran Era Globalisasi,* Majlis Perasmian Komuniti Shariah, Putrajaya, 30 November 2005.

Dr Zeti Akhtar Aziz, *Gabenor's Opening Address at the Third IFSB Seminar on Legal Issues: Surveys on Legal and Shariah Issues in the Islamic Financial Securities Industry*, KL, 28 March 2007.

Dr. Zeti Akhtar Aziz, Governor's Speech at the launch of the Financial Mediation Bureau, Kuala Lumpur, 20 January 2005.

Engku Rabiah Adawiyah Engku Ali. (2009). *Isu-isu Perundangan dan Kehakiman daalam Kewangan Islam.*

Guidelines on the Governance of Shariah Committee for the Islamic Financial Institutions, issued by Bank Negara Malaysia in December 2004.

Mohamed Ismail bin Mohamed Sharif, *The Legislative Jurisdiction of the Federal Parliament in Matters Involving Islamic Law [2005] 3 MLJ cv*

Tengku Dato' Hasmuddin Tengku Othman.(2009). *Isu-isu Perundangan Dalam Kewangan Islam.*

Tun Abdul Hamid Mohamad. (2009). *Interlink/Interface Between Civil Law System and Shariah Rules and Principles and Effective Dispute Resolution Mechanism, Islamic Financial Services Industry Legal Forum 2009*

Zeti Akhtar Aziz. (2008). *Governor's Address: Sustaining Malaysia as a Platform for International Islamic Finance.*

Zulkifli Hasan,*The Effectiveness of the Legal Framework of Islamic Banking System in Malaysia.*

Business incubation process' impact on Malaysian ICT incubatee performance using multinomial logistic regression

FARARISHAH ABDUL KHALID
[1]RMIT University
School of Management
Building 108, 239 Bourke Street
Melbourne, VIC 3001
Tel: (03) 9925 1688
[2]Universiti Teknikal Malaysia Melaka
Email: fararishah.abdulkhalid@rmit.edu.au

DAVID GILBERT, PhD.
RMIT University
School of Management
Tel: (03) 9925 5196
Email: david.gilbert@rmit.edu.au

AFREEN HUQ , PhD.
RMIT University
School of Management
Tel: (03) 9925 5198
Email: afreen.huq@rmit.edu.au

Abstract

Business incubation has been known in the literature as an economic development tool. Around the world, and in the developing countries particularly, business incubation is deployed to stimulate the growth of small-to-medium sized enterprises or SMEs, which are the lifeblood for many nations. Malaysia's business incubation system has been established since the 1980s and in line with the country's aspirations to become a developed nation by the year 2020, much has been done by the government to catalyse the growth of SMEs, particularly, ICT SMEs. Despite establishing numerous ICT incubators over the last decade, the process involved in assisting new entrepreneurs in the incubators remains fragmented. This paper examines four constructs of the business incubation process: selection performance, monitoring and business assistance intensity, resources allocation and professional management services. A total of 118 incubatees from ICT incubators in Malaysia responded to an online survey questionnaire. Multinomial Logistic Regression analysis was conducted due to the categorical nature of the dependent variable, and revealed that of the four constructs, Selection Performance, Monitoring and Business Assistance Intensity and Professional Management are significant predictors to business incubation performance, while Resources Allocation is not. The findings will provide valuable information for entrepreneurs, business incubator managers, and policy-makers on best practices of incubation management and benchmarking towards third-generation incubators. This paper fills the gap in the current incubation literature, contributing in several aspects including empirical data, methodology, and noteworthy findings regarding the Malaysian incubation phenomenon.

Keywords: Business incubation, incubatee performance, logistic regression

Business incubation process' impact on Malaysian ICT incubatee performance using multinomial logistic regression

FARARISHAH ABDUL KHALID
RMIT University
School of Management
Building 108, 239 Bourke Street
Melbourne, VIC 3001
Tel: (03) 9925 1688
Universiti Teknikal Malaysia Melaka
Email: fararishah.abdulkhalid@rmit.edu.au

DAVID GILBERT, PhD.
RMIT University
School of Management
Tel: (03) 9925 5196
Email: david.gilbert@rmit.edu.au

AFREEN HUQ , PhD.
RMIT University
School of Management
Tel: (03) 9925 5198
Email: afreen.huq@rmit.edu.au

1. Introduction

The increasingly important role of business incubation as a useful strategy and effective method to accelerate growth and development of technology-based small and medium sized enterprises (SMEs) has been widely acknowledged in the economic and entrepreneurship literature (OECD, 1996; Lee & Yang, 2000; Aernoudt, 2004; Phan, Siegel & Wright, 2005). Atherton and Hannon (2006) state that incubators are known for their role to accelerate the growth of new businesses and to create vast employment opportunities through the generation of new businesses. Further, international benchmarking studies, such as the Global Entrepreneurship Monitor (GEM) agrees that new businesses play an important role in enhancing the nation's competitiveness through enhanced degrees of innovativeness and the exploitation of new knowledge and technology. Additionally, incubators have also been suggested to reduce failure of new businesses. These are among the main agendas of business incubators that have been highlighted in extant entrepreneurship literature.

This paper examines four constructs of the business incubation process: selection performance, monitoring and business assistance intensity, resources allocation and professional management services. Multinomial logistic regression analysis was utilised due to the categorical nature of the dependent variable, and revealed that of the four constructs, Selection Performance, Monitoring and Business Assistance Intensity and Professional Management are significant predictors to business incubation performance, while Resources Allocation is not. The findings will provide valuable information for entrepreneurs, business incubator managers, and policy-makers on best practices of incubation management and benchmarking towards third-generation incubators. This paper fills the gap in the current incubation literature, contributing in several aspects including empirical data, methodology, and noteworthy findings regarding the Malaysian incubation phenomenon.

2. Literature

The word 'incubator' has been defined by many researchers thus far as evident in the extant literature. The reason for the variation in defining business incubator could be largely due to the diversity among incubators, their sponsors and their purposes. This is supported by Voisey *et al.* (2006) who added that the continuous growth in business incubation and the ongoing diversification of configurations has led to increased difficulty in defining business incubators precisely.

The NBIA defines business incubator as 'a business assistance program targeted to start-ups and early stage firms with the goal of improving their chances to grow into healthy, sustainable companies' (Atkins, 2001). Alternatively, the BIIA (2008) defines business incubator as 'a new hybrid type of economic development facility that combines features of entrepreneurship, business facilitation and real estate development'. Another governing body that gave a definition to business incubator is The Small Business Council (1988) who defined business incubation as 'a systematic approach to new enterprise development which can be described as consisting of five dimensions including enterprise development, a business consultancy network, entrepreneurial synergy, flexible affordable working space and shared office services'. These dimensions can be generally understood as the purpose, benefit, design and management of business incubators.

The development of business incubation practices has been a subject of significant interest because of its proven ability in stimulating economic growth through job and wealth creation as seen in the United States and the United Kingdom (Colombo & Delmastro, 2002; Voisey, Gornall, Jones & Thomas, 2006; Doyle & Hammond, 2008). The reported impacts of business incubation have largely been in the increased number of SMEs as well as increased competitiveness in new venture creations. Subsequently, business incubators are also known to create employment opportunities (Besser, 1996; Peters, Rice & Sundararajan, 2004) and have impacted gross domestic product (GDP) of countries such as the US and China (NBIA, 1997). North American business incubators were reported to have created more than 250,000 jobs from their incubators (Peters *et al.*, 2004; Semih & Erol, 2004). The job creation from activities related to business incubation is an indicator to the positive growth in economic performance in some parts of the world.

Various agencies from the public and private sectors as well as research institutes and universities have taken deep interest in business incubation, leading to the accumulation of literature on the subject matter (CSES, 2002; UKBI, 2003; Kae-Kuen & Hung-Shun, 2006).

Studies on incubator development marked the beginning of incubation literature, as researchers in this area began to recognize the rewards of business incubation. Among the studies conducted in this area include lessons learned from European incubators (Berger, 1984), business incubator as economic development tool (Carroll, 1986), structure, policy and services in the incubator industry (Allen & McCluskey, 1990) and developing regional area through business incubator (Kang, 1993). More recent studies on incubator development focused on specialization of incubators as a strategy as done by Schwartz and Hornych (2008). There has also been studies conducted on business incubation in developing countries such as Adegbite (2001) which mainly discussed the development of incubators in Nigeria and indicated a pressing problem of tenant overstay at incubators.

Phan *et al.* (2005) acknowledged incubator development as one of the main prongs of business incubator-incubation research, alongside research done at incubatee level, entrepreneur level, and system level. Research suggests that incubator level research involves issues that generally relate to the institutional aspects of the incubator; for example, profile of incubators, examination of the physical constitution of incubators, benefits of co-locating within incubators, types of services at the incubators, best practices of business incubators and critical elements of success of the incubators. Incubator level research has been undertaken quite extensively with the purpose of profiling the incubator types according to their objectives, services and facilities offered and their role in enhancing the economic development. Among the studies that have considered the issues related in the incubator level include Allen and Rahman's (1985) view on positive environment for entrepreneurs provided by the incubators and Cooper's (1985) study on the role played by incubator organizations in promoting growth-oriented firms. Both studies discussed incubator characteristics and the relationship between incubators and small firms. Similar-themed studies were also found in Carroll (1986) and Martin (1997) where topics discussed include business incubator life cycle, types of funding available for incubators, benefits of incubation, and how incubators play a role in developing new enterprises. Another key research that was done in this area was by Tornatzky, Batts, McCrea, Lewis and Quittman (1995) where they suggested that business incubation is an effective development tool and requires modest investment while providing excellent return on investment to regional economies.

3. Method

The study uses the survey questionnaire method to solicit the response from incubatees regarding the underlying factors impacting upon business incubation performance. The survey questionnaire is deemed a suitable tool for this study as it enables a large amount of data to be obtained to identify factors in the business incubation process that impact upon business incubation performance. This form of instrument has been used in various incubation studies adopting the quantitative only or mixed methods approach such as Adegbite (2001), Scaramuzzi (2002), and Voisey *et al.* (2006).

The survey questionnaire link was distributed via email and in person to 180 ICT incubatees from ICT incubators in Malaysia. The survey questionnaire was developed by the researcher incorporating previously tested and validated scales by Hackett and Dilts (2008) and current incubation literature.

Data Collection Procedures

Participants for the survey questionnaire were initially identified through the websites of their respective incubators. Through contacts with the incubator managers, government agencies such as MDeC and SIRIM, as well we privately formed association such as NINA, basic information regarding the name of the incubatees, email addresses and phone numbers were then obtained. These agencies have shown immense support for this research by providing the researcher with the list of incubatees and expediting their responses for the quantitative part of this research. The participants were made up of companies that are tenants of incubators that have been chosen for the qualitative part of the research. These companies are mostly ICT-based companies with diverse business natures ranging from mobile and wireless communication to internet-based business applications in the financial sector. A letter of invitation was first extended to incubatees through email to obtain their consent to be part of the study.

A total of 180 incubatees were targeted to be participants of the survey questionnaire. Upon receiving their approval to partake in the study, participants were then informed of the link to the survey questionnaire. This method of distribution was more accessible, effective and less confronting to the incubatees. The link to the online survey questionnaire was emailed to the incubatees of ICT incubators in February 2010 together with a short introductory letter from the researcher indicating the nature of the research, the researcher's affiliation, and that participation was entirely voluntary (this was further reiterated on the cover letter of the questionnaire). The delivery of the questionnaires to participants was synchronised with the distribution of questionnaire at the Innovation Week held in March 2010 in Kuala Lumpur, an event organized by NINA. The researcher had appointed a research assistant to distribute and collect the survey questionnaire at the seminar in a controlled manner guided by a developed protocol. The total number of survey questionnaires obtained from the Innovation Week was forty nine. All forty nine questionnaires were mailed back to the researcher in Melbourne at the end of April 2010.

Responses received from the Innovation Week were keyed in manually into the online survey tool by the researcher and all data were then extracted from the online survey tool into an SPSS file, a process that took three weeks of intensive work and valuable lesson learnt. By end of May 2010, the total number of participants was 118. This yields to a response rate of 45.4 per cent.

Data Analysis Procedures

In selecting an appropriate technique for analysing the data set, Hair *et al.'s* (2010) procedures for appropriate selection of multivariate technique was followed. This process is based on the researcher's judgement in relation to criteria regarding the research objective(s) and the nature of the data. The primary research objective of this paper is to investigate the underlying components of business incubation performance. Further, Hair *et al.* (2010, p.95) detail that Principal Component Analysis (PCA) is the most appropriate technique if the research is exploratory in nature and researchers wish to "find a way to condense (summarise) the information contained in a number of original variables into smaller set of new, composite dimensions or variates (factors) with a minimum loss of information". Supporting this view are Tabachnik and Fidell (2007) who advocate PCA is a better choice for researchers that require an empirical summary of the data set.

Data analyses were undertaken in three principal stages (data screening, exploratory factor analysis, and multinomial logistic regression) using PASW Version 18.0. As part of the preparation and screening process, data were tested for violations of statistical assumptions (e.g., multicollinearity, outliers, and normality) as well as identifying missing data. Data screening revealed that there were no missing data. The statistical procedures involved two main processes: exploratory factor analysis (EFA) and multinomial logistic regression. Factor analysis was conducted to assess the unidimensionality of the four constructs developed in examining relationships with incubation performance: (i) Selection Performance, (ii) Monitoring and Business Assistance Intensity, (iii) Resource Allocation and (iv) Professional Management Services.

This paper reports on the results of the multinomial logistic regression to identify the impact of the four constructs in the business incubation process on business incubation performance. This statistical technique was necessary due to the categorical nature of the dependent variable. Multinomial logistic regression has been employed by previous researchers in numerous entrepreneurship (Stewart, Watson, Carland & Carland, 1998; Lee, Lee & Pennings, 2001;

Davidsson & Honig, 2003; Townsend, Busenitz & Arthurs, 2010) and business incubation research (Rothaermel & Thursby, 2005).

Logistic regression is used to model the relationship between a binary response variable and one or more predictor variables, which may be either discrete or continuous. In other words, logistic regression can be used to predict a dependent variable on the basis of continuous and/or categorical independent variables and to determine the percent of variance in the dependent variable explained by the independent variables to rank the relative importance of independent variables, to assess interaction effects, and to understand the impact of covariate control variables (Field, 2009).

Logistic regression applies maximum likelihood estimation after transforming the dependent into a logit variable (the natural log of the odds of the dependent occurring or not). In this way, logistic regression estimates the probability of a certain event occurring. In this paper, logistic regression is used to estimate the probability of a certain business incubation performance occurring, whether it is (1) our company is barely surviving, (2) our company has met its break-even and is moving on a path toward profitability, (3) our company is making profit and (4) our company is highly profitable based on the independent variables.

Logistic regression calculates changes in the log odds of the dependent, not changes in the dependent variable itself. Discriminant analysis has been used in the past but is now more frequently being replaced with logistic regression, as this approach requires fewer assumptions in theory, is more statistically robust in practice, and is easier to use and understand than discriminant analysis. Two goodness-of-fit tests (Pearson and Deviance) were performed; tables of observed and expected frequencies, and measures of association were produced.

4. Results and Discussion

The logistic regression analysis was performed in five phases consisting of one full model analysis and four individual model analyses. The full model analysis incorporates all components previously extracted from the EFA, and grouped under their respective broader constructs, i.e. selection performance, monitoring and business assistance intensity, resource allocation, and professional management services, to see their relationships with the four outcome categories.

The individual models analyses examine each component's relationship with business incubation performance. Results of the logistic regression analyses will be presented in the following manner: firstly, a full model evaluation highlighting the relationship between the four broad constructs, and the business incubation performance in general; secondly, results from the selection performance factor will be presented, followed by the monitoring and business assistance intensity, resources allocation and finally, the professional management services construct.

Evaluations of the Logistic Regression Model

Peng, Lee and Ingersoll (2002), promote that logistic regression evaluations may be evaluated based on the following: (a) overall model evaluation, (b) statistical tests of individual predictors, (c) goodness-of-fit statistics, and (d) validations of predicted probabilities. This approach has been adopted here in presenting the results.

Overall model evaluation. A logistic model is said to provide better fit to the data if it demonstrates an improvement over the intercept-only model (also called the null model). The intercept-only model serves as a good baseline because it contains no predictors. Consequently, according to this model, all observations would be predicted to belong in the largest outcome category. An improvement over this model is examined using inferential statistical tests such as the likelihood ratio and Wald tests. Table 4.1 presents the full model evaluation consisting of all four constructs. The table reveals that Selection Performance (F1), Monitoring and Business Assistance Intensity (F2), and Professional Management Services (F4) are all significant predictors to Business Incubation Performance ($p < .05$), while Resources Allocation (F3) is not a significant predictor ($p > .05$). The chi-square values also suggest that similar relationships with high values for F1, F2, and F4, and a lower value for F3. The interaction of all four constructs reveals the strongest effect as a predictor ($p = .003$, $\chi(3) = 14.024$).

Table 4.1: Full model evaluation

Predictors	**Chi-Square**	***df***	**Sig.**
Intercept	18.43	3	.000
Selection Performance (F1)	13.02	3	.005
Monitoring and Business Assistance Intensity (F2)	9.50	3	.023
Resources Allocation (F3)	2.75	3	.431
Professional Management Services (F4)	13.39	3	.004
F1Total * F2Total * F3Total * F4Total	14.02	3	.003

As mentioned earlier, the dependent variable is business incubation performance which is measured by four categorical outcomes. Logistic regression enables independent variables to predict group memberships, and as this study uses four outcomes, one of the outcomes (our company is barely surviving) has been used as a reference category. Hence, there are three models generating from this data: Model 1, Model 2 and Model 3. Based on data presented in Table 4.2, the first model shows no significant relationship between the constructs and business incubation performance with all values of *p* greater than .05. However, Model 2 and 3 show significant relationships with business incubation performance with some constructs having *p*-values of less than .05. The significance of the constructs will be elaborated in the following paragraph.

Table 4.2: Parameter estimates for the full model

Model 1	β	SE β	Wald's χ^2	p	e^{β} (odds ratio)
Predictor					
Constant	.176	2.943	.004	.952	
Selection Performance (F1)	-.001	.024	.002	.963	.999
Monitoring and Business Assistance Intensity (F2)	.000	.061	.000	.998	1.000
Resources Allocation (F3)	-.057	.043	1.762	.184	.944
Professional Management Services (F4)	.020	.026	.585	.444	1.020
Model 2					
Constant	-35.271	14.425	5.979	.014	
Selection Performance (F1)	.195	.075	6.731	.009	1.215
Monitoring and Business Assistance Intensity (F2)	.258	.107	5.828	.016	1.295
Resources Allocation (F3)	.026	.084	.098	.754	1.027
Professional Management Services (F4)	.122	.047	6.618	.010	1.130
Model 3					
Constant	-41.092	22.568	3.315	.069	-41.092
Selection Performance (F1)	.265	.134	3.914	.048	1.304
Monitoring and Business Assistance Intensity (F2)	.145	.182	.640	.424	1.156
Resources Allocation (F3)	.083	.138	.356	.551	1.086
Professional Management Services (F4)	.202	.099	4.162	.041	1.223

The Wald statistic is equal to the ratio of β divided by SE squared; it has a chi-square distribution. For each Wald statistic, $df = 1$ and $p = .0000$.

Statistical tests of individual predictors. The statistical significance of individual regression coefficients (i.e., βs) is tested using the Wald chi-square statistic (Table 4.2). According to Table 4.2, F1, F2, and F4 were significant predictors of the second model with outcome category "our companies are making profit" ($p < .05$). The high corresponding Wald test values also show the significance of these three constructs. This means that incubatees could be making profit if they are carefully selected, given the adequate monitoring and business assistance, and provided professional management services. Meanwhile, providing them with resources does not necessarily aid them towards making profit. The test of the intercept (i.e., the constant in Table 4.1) merely suggests whether an intercept should be included in the model. For the present data set, the test result ($p > .05$) suggested that an alternative model without the intercept might be applied to the data. Consequently, F1 and F4 were also significant predictors for the outcome category "our company is highly profitable". This could be interpreted as companies tend to be highly profitable when incubators select the incubatees carefully, as well as providing them with Professional Management Services. Consequently, monitoring of incubatees and providing resources to the incubatees may not be significant to creating incubatees that are highly profitable.

The βs are the logistic regression coefficients. Negative βs reveal a negative or inverse relationship, whereas positive βs indicate positive relationship (Trusty, 2000). The odds ratio in the last columns are more straightforward in interpretation than the βs (log odds). An odds ratio of 1 is equivalent to a log odds of 0. An odds ratio of 1 and a log odds of 0 signify no relation of the independent variable to the dependent variable. The odds ratio are the probability that an event will happen divided by the probability that the event will not happen (Norusis, 1994). Studies in the past that used logistic regression analysis appear to present the odds ratios in their results such as McNeal (1998), Meisels and Liaw (1993) and Rush and Vitale (1994).

The findings show that for every one Selection Performance increase, the odds that the incubatee will be making profit is increased by 21.5%, while for every increase in Monitoring and Business Assistance Intensity, the odds of an incubatee will be making profit is increased by 29.5%.

Goodness-of-fit statistics. Goodness-of-fit statistics assess the fit of a logistic model against actual outcomes. Two descriptive measures are presented in Table 4.3, which are the R^2 indices, defined by Cox and Snell (1989) and Nagelkerke (1991), respectively. These indices are variations of the R^2 concept defined for the OLS regression model. Due to the limited interpretation of the R^2 in logistic regression (Peng *et al.*, 2002), the R^2 indices can be treated as supplementary to each other, more useful evaluative indices, such as the overall evaluation model, tests of individual regression coefficients, and the goodness-of-fit test statistic (Peng *et al.*, 2002). The Cox and Snell R^2 measure indicates a greater model fit with higher values, but with a limit of less than 1 (<1) (Hair *et al.*, 2010). The Nagelkerke R^2 is an adjusted version of the Cox and Snell R^2 and covers the full range from 0 to 1(Hair *et al.*, 2010), and therefore it is often preferred. The R^2 values indicate how useful the explanatory variables are in predicting the response variable and can be referred to as measures of effect size.

Table 4.3: Goodness-of-fit tests of the full model

	Chi-Square	***df***	**Sig.**
Pearson	257.923	297	.951
Deviance	217.464	297	1.000
$\boldsymbol{R^2}$			
Cox and Snell			.297
Nagelkerke			.326

In normal linear regression, summary measures of fit are functions of a residual defined as the difference between the observed and fitted value. In logistic regression, there are several ways to measure the difference between the observed and fitted values. There are two measures of the difference between the observed and the fitted values: the Pearson residual and the Deviance residual, both of which suggest that the model was fit to the data well. In other words, the null hypothesis of a good model fit to data was tenable.

Validations of predicted probabilities. Logistic regression predicts the logit of an event outcome from a set of predictors. The resultant predicted probabilities can then be revalidated with the actual outcome to determine if high probabilities are indeed associated with events and low probabilities with non-events. The degree to which predicted probabilities agree with actual outcomes is expressed as either a measure of association or a classification table. Peng, Lee and Ingersoll (2002) recommend the use of the classification in addition to the overall evaluation table to help communicate findings to readers. The classification table (Table 4.4), which produces a contingency table of observed versus predicted responses for all combinations of predictor variables (Field, 2009), indicates the extent of how the model correctly predicts each outcome category. This table is “most appropriate when classification is a stated goal of the analysis; otherwise it should only supplement more rigorous methods of assessment of fit” (Hosmer & Lemeshow, 2000, p.160). In an ideal model, all cases will be on the diagonal and the overall per cent correct will be 100%. In this study, the full model classifies correctly 48.8% for incubation performance.

Table 4.4: Classification table for the full model

Observed	Predicted: Our company is barely surviving	Our company has met its break-even and is moving on a path toward profitability	Our company is making profit	Our company is highly profitable	Per cent Correct
Our company is barely surviving	12	6	10	0	42.9%
Our company has met its break-even and is moving on a path to profitability	8	14	14	1	37.8%
Our company is making profit	3	8	24	1	66.7%
Our company is highly profitable	1	0	2	1	25.0%
Overall Percentage	22.9%	26.7%	47.6%	2.9%	48.6%

The research focuses on the *performance outcomes* of the incubatees which is the dependent variable with four categories: our company is barely surviving; our company has met its break-even and moving on a path toward profitability; our company is making profit; and our company is highly profitable. A total of 118 responses were obtained from ICT incubatee firms located at ICT incubators in Malaysia in 2010. We obtained a ubiquitous outcome variable for all 118 firms, and found that 32 firms (27.1%) were barely surviving, 44 firms (37.3%) had met their break-even, 38 firms (32.2%) were making profit and 4 firms (3.4%) were highly profitable. The remaining results of the Logistic Regression analysis will be presented in the next section. The analysis examines individual elements within each construct and investigates their relationships with Business Incubation Performance.

4.1 Selection Performance

Due to the exploratory nature of this study, Field (2009) recommends the use of stepwise methods in situations in which no previous research exists on which to base hypotheses for testing and when the research seeks a model to fit the data. Both forward entry and backward entry methods were tested with each yielding results that were not too different from each other.

The model fitting information table (Table 4.5) compares the model (or models in a stepwise analysis) to the baseline (the model with only the intercept term in it and no predictor variables). It is a useful table that denotes the improvement of the model as a result of entering the predictors of the model (Field, 2009). The chi-square statistics for this model suggests that it is highly significant, indicating that the interactions have a significant effect on predicting whether incubatee performance was significant. Table 4.5 presents the overall model evaluation for the Selection Performance construct. The table reveals that within the Selection Performance construct, Financial Characteristics, Managerial and Marketing Characteristics, and Product Characteristics contribute significantly to the model $p < .05$).

Table 4.5: Model-fitting information table Selection Performance Construct

	Chi-Square	*df*	Sig.
Intercept	.000	0	.
Financial Characteristics	52.368	33	.017
Managerial and Market Characteristics	72.543	48	.013
Product Characteristics	78.000	42	.001

Based on the parameter estimates in Table 4.6, selection based on product characteristics appear to be the strongest predictor for 'our company is making profit' with p = .041 and Wald's χ^2 = 4.183. This suggests selecting potential incubatees based on their products is associated to incubatees making profit. The strength of this association is presented by the odds ratio 15.7%.

Table 4.6: Parameter estimates for Selection Performance construct

Model 1	β	**SE** β	**Wald's** χ^2	p	e^{β} **(odds ratio)**
Constant	-.623	1.421	.192	.661	
Financial Characteristics	.139	.107	1.703	.192	1.150
Managerial and Market Characteristics	-.093	.075	1.558	.212	.911
Product Characteristics	.049	.058	.735	.391	1.051
Model 2					
Constant	-4.528	2.059	4.835	.028	
Financial Characteristics	-.036	.123	.087	.768	.964
Managerial and Market Characteristics	.056	.087	.419	.517	1.058
Product Characteristics	.146	.071	4.183	.041	1.157
Model 3					
Constant	-5.904	4.855	1.479	.224	
Financial Characteristics	.083	.232	.127	.721	1.086
Managerial and Market Characteristics	-.122	.136	.812	.368	.885
Product Characteristics	.251	.194	1.678	.195	1.285

The Pearson and Deviance statistic tests for the fit of the model to the data, as shown in Table 4.7. Specifically, it tests whether the predicted values from the model differ significantly from the observed values. In order for a model to have a good fit, the predicted values should not be significantly different from the observed values (Field, 2009). Evidence of the goodness-of-fit of logistic models can be explained by R^2 index for either the entire model or for each predictor (Alexander, Dauber, & Entwisle, 1996; Diamond, Reagan, & Bandyk, 2000; Rush & Vitale, 1994; Trusty, 2000). The Deviance statistic here demonstrates that the model is a good fit of the data (p = .99, which is much higher than .05). The Nagelkerke R^2value of .83 indicates the model is useful in predicting business incubation performance.

Table 4.7: Goodness-of-fit tests for Selection Performance

	Chi-square	df	**Sig.**
Pearson	66.345	159	1.000
Deviance	73.844	159	.99
R^2			
Cox and Snell			.755
Nagelkerke			.830

Finally, the classification table for analysis of Selection Performance elements as shown in Table 4.8 below suggests a 75.4% correct prediction, indicating good prediction of the model.

Table 4.8: Classification table predicting membership of outcome categories by Selection Performance

	Predicted				
Observed	Our company is barely surviving	Our company has met its break-even and is moving on a path t	Our company is making profit	Our company is highly profitable	Per cent Correct
Our company is barely surviving	22	8	2	0	68.8%
Our company has met its break-even and is moving on a path toward profitability	5	36	3	0	81.8%
Our company is making profit	0	10	28	0	73.7%
Our company is highly profitable	0	1	0	3	75.0%
Overall Percentage	22.9%	46.6%	28.0%	2.5%	75.4%

The following section presents regression analysis of the Monitoring and Business Assistance Intensity construct.

4.2 Monitoring and Business Assistance Intensity

The Model Fitting Information in Table 4.9 suggests the overall fit of the model. Firstly, the chi-square statistics for this model show that comprehensiveness and quality of the business assistance contributes significantly to the model, (p < .05) while time intensity of the interaction is not a significant predictor to the model (p > .05).

Table 4.9: Model-fitting information table for Monitoring and Business Assistance Intensity Construct

Predictors	**Chi-Square**	***df***	**Sig.**
Intercept	4.387	3	.223
Comprehensiveness and Quality	10.598	3	.014
Time Intensity	.665	3	.881

The parameter estimates in Table 4.10 shows that comprehensiveness and quality of the business services appear to be a significant predictor to the outcome 'our company is making profit', (p = .003; Wald's χ^2 = 8.925). The odds ratio also suggests that the more comprehensive and better quality the business assistance provided, the more incubatees are making profit.

Table 4.1: Parameter estimates for Monitoring and Business Assistance Intensity construct

Model 1	β	SE β	Wald's χ^2	p	e^β (odds ratio)
Constant	-.882	1.843	.229	.632	
Comprehensiveness and Quality	.051	.028	3.255	.071	1.052
Time Intensity	-.012	.095	.016	.898	.988
Model 2					
Constant	-4.519	2.232	4.098	.043	
Comprehensiveness and Quality	.117	.039	8.925	.003	1.124
Time Intensity	.064	.108	.345	.557	1.066
Model 3					
Constant	-.931	3.508	.070	.791	
Comprehensiveness and Quality	.004	.055	.005	.944	1.004
Time Intensity	-.060	.186	.104	.747	.942

The Deviance statistic demonstrates that the model is a good fit of the data (p = .954, which is much higher than .05). The Nagelkerke R^2 value of .125 indicates the model is 12.5% explained by the model.

Table 4.2: Goodness-of-fit tests for Monitoring and Business Assistance Intensity

	Chi-Square	*df*	Sig.
Pearson	148.844	171	.888
Deviance	141.052	171	.954
R^2			
Cox and Snell			.114
Nagelkerke			.125

The classification table below for analysis of Monitoring and Business Assistance Intensity elements suggests a 38.0% correct prediction, indicating a reduced ability to predict the model compared to Selection Performance.

Table 4.3: Classification table predicting membership of outcome categories by Monitoring and Business Assistance Intensity

	Predicted				
Observed	Our company is barely surviving	Our company has met its break-even and is moving on a path toward profitability	Our company is making profit	Our company is highly profitable	Per cent Correct
Our company is barely surviving	10	11	8	0	34.5%
Our company has met its break-even and is moving on a path toward profitability	7	13	19	0	33.3%
Our company is making profit	1	17	18	0	50.0%
Our company is highly profitable	1	3	0	0	.0%
Overall Percentage	17.6%	40.7%	41.7%	.0%	38.0%

The following section presents multinomial logistic regression analysis for the third component, Resource Allocation.

4.3 Resource Allocation

Based on the full model analysis presented in Table 4.13, Resource Allocation appeared to be a weak predictor to Business Incubation Performance. However, this section examines the construct's individual elements and their relationship to incubation performance. The overall fit of the model for this particular construct is represented in Table 4.13. Firstly, the chi-square statistics for this model suggests that all elements within Resource Allocation are significant ($p < .05$). Resource Utilisation appears to be the strongest predictor ($p = .008$) followed by Resource Availability ($p = .04$) and Resource Quality ($p = .049$).

Table 4.13: Model-fitting information table for Resources Allocation Construct

Predictors	**Chi-Square**	***df***	**Sig.**
Intercept	14.984	3	.002
Resource Utilisation	11.905	3	.008
Resource Quality and Availability	7.854	3	.049

Individual contributions of the variables to the model indicate that not all elements within the Resource Allocation construct are significant predictors for business incubation performance. Of the three, only Resource Utilisation and Resource Availability appear to significantly contribute to the outcome category "our company has met its break-even and is moving on a path toward profitability" with ($p = .019$, Wald's $\chi^2 = 5.481$ and $p = .017$, Wald's $\chi^2 = 5.704$ respectively. This suggests that availability and utilisation of the resources are both associated with incubatees meeting its break-even and going toward profitability.

Table 4.14: Parameter estimates for Resource Allocation construct

Model 1	β	SE β	Wald's χ^2	p	e^β (odds ratio)
Constant	1.958	1.933	1.026	.311	
Resource Utilisation	-.302	.129	5.481	.019	.740
Resource Availability and Quality	.164	.068	5.704	.017	1.178
Model 2					
Constant	-8.494	4.248	3.998	.046	
Resource Utilisation	.155	.146	1.127	.288	1.167
Resource Availability and Quality	.147	.087	2.885	.089	1.158
Model 3					
Constant	-16.281	13.630	1.427	.232	
Resource Utilisation	.041	.400	.010	.919	1.041
Resource Availability and Quality	.386	.220	3.072	.080	1.472

The Pearson and Deviance statistics for Resource Allocation shows that the model is a good fit, with Deviance statistic value of p = 1.00, and Pearson value of 0.929. The Pseudo R^2 values show that both Cox and Snell's and the Nagelkerke's measure to be 0.246 and 0.271 respectively. This means that this model explains about 27.1% of the model.

Table 4.15: Goodness-of-fit tests for Resources Allocation

	Chi-Square	***df***	**Sig.**
Pearson	256.36	291	.929
Deviance	216.71	291	1.000
R^2			
Cox and Snell			.246
Nagelkerke			.271

The final table presented for the logistic regression analysis for Resources Allocation is the classification table below. The table suggests that the model has predicted 49.6% correctly.

Table 4.16: Classification table predicting membership of outcome categories by Resources Allocation

Observed	Predicted: Our company is barely surviving	Our company has met its break-even and is moving on a path toward profitability	Our company is making profit	Our company is highly profitable	Per cent Correct
Our company is barely surviving	6	9	17	0	18.8%
Our company has met its break-even and is moving on a path toward profitability	2	27	14	0	62.8%
Our company is making profit	3	10	25	0	65.8%
Our company is highly profitable	0	2	2	0	.0%
Overall Percentage	9.4%	41.0%	49.6%	.0%	49.6%

The analysis for the final construct, Professional Management Services will now be presented.

4.4 Professional Management Services

The model-fitting information regarding Professional Management Services indicates that only Staff and Personnel Management contribute significantly to the model (p = .023), while other elements such as Strategic Management, Financial Management and Marketing and Promotion Management are not significant.

Table 4.17: Model-fitting information for Professional Management Services construct

Predictors	**Chi-Square**	***df***	**Sig.**
Constant	9.700	3	.021
Strategic Management	2.369	3	.499
Financial Management	4.030	3	.258
Marketing and Promotion	3.670	3	.299
Staff and Personnel	8.117	3	.044

The parameter estimates shown in Table 4.18 also indicates that Staff and Personnel Management is the strongest predictor to the outcome category "our company is making profit". This suggests that providing human resources advice to incubatees is associated with incubatees making profit, a relationship that is explained by odds ratio of 1.189.

Table 4.18: Parameter estimates for Professional Management Services construct

Model 1	β	SE β	Wald's χ^2	p	e^{β} (odds ratio)
Constant	1.153	1.838	.393	.531	
Strategic_Mgt_	.075	.086	.756	.384	1.078
Financial_Management	-.116	.089	1.687	.194	.891
Marketing_and_Promotion	-.100	.076	1.732	.188	.905
Staff_and_Personnel	.035	.065	.290	.590	1.036
Model 2					
Constant	-5.785	3.361	2.964	.085	
Strategic_Mgt_	-.022	.096	.053	.817	.978
Financial_Management	.040	.100	.159	.690	1.041
Marketing_and_Promotion	.050	.088	.315	.575	1.051
Staff_and_Personnel	.173	.076	5.199	.023	1.189
Model 3					
Constant	-7.920	7.473	1.123	.289	
Strategic_Mgt_	.187	.183	1.043	.307	1.205
Financial_Management	.004	.196	.000	.983	1.004
Marketing_and_Promotion	-.029	.182	.026	.873	.971
Staff_and_Personnel	.176	.147	1.426	.232	1.193

Table 5.26 presents goodness-of-fit tests for this construct and shows a Deviance statistic value of .997. The Nagelkerke's value on the other hand suggests that this model only explains 23.9%.

Table 4.19 Goodness-of-fit tests for Professional Management Services construct

	Chi-Square	*df*	Sig.
Pearson	310.596	297	.282
Deviance	235.441	297	.997
R^2			
Cox and Snell			.217
Nagelkerke			.239

Finally, the classification table for Professional Management Services show that this model has classified 47.8% correctly, indicating a good model.

Table 4.20: Classification table predicting membership of outcome categories Professional Management Services

Observed	Predicted: Our company is barely surviving	Our company has met its break-even and is moving on a path toward profitability	Our company is making profit	Our company is highly profitable	Per cent Correct
Our company is barely surviving	13	8	10	0	41.9%
Our company has met its break-even and is moving on a path toward profitability	7	20	15	0	47.6%
Our company is making profit	7	9	22	0	57.9%
Our company is highly profitable	0	3	1	0	.0%
Overall Percentage	23.5%	34.8%	41.7%	.0%	47.8%

5.0 Summary and Conclusions

This paper investigates the relationship between the underlying components of business incubation process and business incubation performance among Malaysian ICT incubators. The theoretical and practical understanding of underlying components impacting upon business incubation performance remains at a nascent state.

The results of the Multinomial Logistic Regression revealed that out of the four predictors (F1, F2, F3, and F4), three were statistically significant in predicting two business incubation performance categories, which are “our company is making profit”, and “our company is highly profitable”. The three that were significant were F1, F2, and F4. Table 5.1 summarises that logistic regression analysis.

Table 5.1: Summary of logistic regression analysis

Construct	Component	Component Label	Chi-Square	Sig.
Selection Performance	1	Selection based on financial characteristics	52.37	.017
	2	Selection based on managerial and market characteristics	72.54	.013
	3	Selection based on product characteristics	78.00	.001
Monitoring and Business Assistance Intensity	4	Comprehensiveness and Quality	10.59	.014
	5	Time Intensity	.66	.881
Resources Allocation	6	Resources Utilisation	11.91	.008
	7	Resources Availability and Quality	8.33	.049

Professional Management Services	8	Strategic Management	2.37	.499
	9	Financial Management	4.03	.258
	10	Marketing and Promotion Management	3.67	.299
	11	Staff and Personnel Management	8.12	.044

Selection Performance (F1) was a strong predictor to the third and fourth outcome categories, which are “our company is making profit” and “our company is highly profitable”. In particular, selection based on product is the strongest predictor to the outcome “our company is making profit”, suggesting that incubators that select incubatees based on their product characteristics are associated with more profitable incubatees.

Monitoring and Business Assistance Intensity (F2) was a strong predictor to the third outcome category, “our company is making profit”. This indicates that incubators that monitor and provide comprehensive business assistance are related to having incubatees that are making profit. Specifically, comprehensiveness and quality of the business assistance appears to be a stronger predictor within the F2 construct.

Resources Allocation (F3) failed to show any significant relationship to any outcome category suggesting that the impact of incubator resources is not felt by the incubatees. However, individual contributions of the components to the model indicate that availability and utilisation of resources are associated with incubatees meeting their break-even and are moving on a path toward profitability.

Finally, Professional Management Services (F4) shows strong predicting capabilities to two possible outcomes of the dependent variable, which are “our company is making profit” and “our company is highly profitable”. This suggests that incubators providing extensive management services apart from basic administrative services are associated with having more profitable incubatees.

References

Adegbite (2001) 'Business incubators and small enterprise development: The Nigerian experience'. Small Businesss Economics, 17157-166.
Aernoudt (2004) 'Incubators: Tool for entrepreneurship?'. Small Business Economics, 23127-135.
Allen & Mccluskey (1990) 'Structure, policy, services and performance in the business incubator industry'. Journal of Entrepreneurship Theory and Practice.
Allen & Rahman (1985) 'Small business incubators: a positive environment for entrepreneurship'. Journal of Small Business Management, 23(1).
Atherton & Hannon (2006) 'Localised strategies for supporting incubation'. Journal of Small Business and Enterprise Development, 13(1): 48-61.
Atkins (2001) Identifying obstacles to the success of rural business incubators. IN NBIA (Ed.).
Berger (1984) 'The Small Business Incubator: Lessons Learned from Europe'. Small Business Administration.
Besser (1996) Growing jobs in business incubators. *Iowa State University Extension.*
Biia (2008) About us.
Carroll (1986) 'The small business incubator as a regional economic development tool: concept and practice'. The Northeast Journal of Business and Economics, 12(2): 14-43.
Cooper (1985) 'The role of incubator organizations in the founding of growth-oriented firms'. Journal of Business Venturing, 175-86.
Cses (2002) Benchmarking of Business Incubators. European Commission Enterprise Directorate General.
Davidsson & Honig (2003) 'The role of social and human capital among nascent entrepreneurs'. Journal of Business Venturing, 18301-331.
Field (Ed.) (2009) *Discovering Statistics using SPSS*, SAGE.
Hackett & Dilts (2008) 'Inside the black box of business incubation: Study B - scale assessment, model refinement, and incubation outcomes'. Journal of Technology Transfer, 33(5).
Hair, Black, Babin & Anderson (2010) *Multivariate Data Analysis 7th Edition*, Pearson.
Hosmer & Lemeshow (2000) *Applied Logistic Regression,* New York, A Wiley-Interscience Publication.
Kae-Kuen & Hung-Shun (2006) The relationship among the resource of incubators, firms' type and performance: An empirical study of academic incubators in Taiwan. *IAMOT.*
Kang (1993) 'Business incubators and development of regional area'. Journal of Urban Administration, 7159-162.
Lee, Lee & Pennings (2001) 'Internal Capabilities, External Networks, and Performance: A Study on Technology-Based Ventures'. Strategic Management Journal, 22615-640.
Lee & Yang (2000) 'The cradle of Taiwan high technology industry development - Hsinchu Science Park (HSP)'. Technovation, 2055-59.
Martin (1997) 'Business incubators and enterprise development: neither tried or tested?'. Small Business and Enterprise Development, 43-11.
Nbia (1997) Business Incubator Facts, Business Incubation Works.
Oecd (1996) The Knowledge-based Economy. IN NATIONAL INNOVATION SYSTEMS, P. (Ed.).
Peng, Lee & Ingersoll (2002) 'An Introduction to Logistic Regression Analysis and Reporting'. The Journal of Education Research.
Peters, Rice & Sundararajan (2004) 'The role of incubators in the entrepreneurial process'. Journal of Technology Transfer, 2983-91.
Phan, Siegel & Wright (2005) 'Science parks and incubators: observations, synthesis and future research'. Journal of Business Venturing, 20165-182.
Rothaermel & Thursby (2005) 'University-incubator firm knowledge flows: assessing their impact on incubator firm performance'. Research Policy.
Scaramuzzi (2002) Incubators in Developing Countries: Status and Development Perspectives.
Schwartz & Hornych (2008) 'Specialization as strategy for business incubators: an assessment of the central german multimedia center'. Technovation, 2(3).

Semih & Erol (2004) Assessing the Effectiveness of Incubators: The Case of Turkey. *ERC Working Papers in Economics 04/12*.
Stewart, Watson, Carland & Carland (1998) 'A Proclivity for Entrepreneurship: A Comparison of Entrepreneurs, Small Business Owners, and Corporate Managers
'. Journal of Business Venturing, 14189-214.
Tabachnik & Fidell (2007) *Using Multivariate Statistics*, Pearson.
Tornatzky, Batts, Mccrea, Lewis & Quittman (1995) The art and craft of technology business incubation: Best practices, strategies and tools from 50 programs. IN SOUTHERN TECHNOLOGY COUNCIL, N. B. I. A. (Ed.). Athens.
Townsend, Busenitz & Arthurs (2010) 'To start or not to start: Outcome and ability expectations in the decisionto start a new venture'. Journal of Business Venturing, 25192-202.
Trusty (2000) 'High Educational Expectations and Low Achievement: Stability of Educational Goals Across Adolescence'. The Journal of Educational Research, 93(6): 356-365.
Ukbi (2003) 'Business incubation in the East Midlands: A review A summary report for the East Midlands Development Agency'.
Voisey, Gornall, Jones & Thomas (2006) 'The measurement of success in a business incubation project'. Journal of Small Business and Enterprise Development, 13(3): 454-468.

Government Regulation: Lessons of the U.S. Great Recession of 2008-2009

Alexander Katkov PhD

Department of Economics,

School of Arts and Sciences

8 Abbott Park Place, Providence, RI 02903, USA

Phone: 1-401-598-1455

E-mail: akatkov@jwu.edu

Topic: Macroeconomic analysis of the causes and results of the U.S. Great Recession of 2008-2009

Alexander Katkov PhD

Johnson & Wales University, Providence, Rhode Island, USA

Government Regulation: Lessons of the U.S. Great Recession of 2008-2009.

Abstract.

The government regulation of the national economy by means of monetary and fiscal policies is the objective reality that must be accepted today even by the die-hard proponents of the pure free market economy. In the USA the monetary policy has been introduced more than 220 years ago and the fiscal policy was possessed by the federal government as the regulatory tool almost 150 years ago.

The Great Recession of 2008- 2009 has forced the U.S. Government to use both of these policies at the very large scale. Two quantitative easing programs that increased the money supply based on different estimations by 2.5- 3 trillion dollars, including the Troubled Asset Relief Program with the price tag of $700 billion, and the stimulus package of $787 billion authorized by The American Recovery and Reinvestment Act of 2009 are major practical applications of monetary and fiscal policies in the attempt to recover the U.S. economy and to stimulate its economic growth during and after the recession. It looks that these remedies have not been able to heal the sick economy. What was wrong? This article is discussing what were major causes of the recession and what can and probably should be done differently by the U.S. Government to make this recovery more effective.

What were causes of the Great Recession of 2008-2009?

Most economists and politicians are naming as two main causes of the recession the collapse of the real estate market after the housing market prices bubble has burst in 2007, and the crisis of the financial system. It is right of course, but we should also look at the two other macroeconomic causes of that crisis which were not broadly discussed by economists.

The first cause is the change of the economic development strategy in the 1980-s. The second is the choice of the wrong role for the USA in the emerging Global Economy. The choice that in thirty years period has converted the USA, that being the global manufacturing super power house after the World War II, into the global super consumer of the cheap imported goods.

In 1980-s the Keynesian model of the economic growth which is based on the support of the growth of Aggregate Demand has been replaced by the "neo-liberal" model of economic growth based upon the support of the growth the Aggregate Supply. Increase in demand as it follow from the classical market model will increase prices of products and services.The increase in supply will decrease prices.

Price decreases are good for consumers because their real incomes as the result of prices decreases will rise. But for producers price decreases means the decline in revenues and profits. In case of falling revenues businesses should decrease costs of production to keep profitability at the same level or to increase it.

One possible way to decrease costs of production will be in the productivity growth. The increase in productivity will drop the cost per unit of the product manufactured. The backbone of the higher productivity is the new technology which requested high capital investments and high fixed costs.

But there is the second possibility: costs of production could be decreased if their components, both fixed and variable, will decline. That option became practically impossible in the USA in 1980-s because of the steady wages growth and the increase in the costs of domestic natural resources.

But costs of natural resources and especially labor costs are lower in other countries, especially in developing countries. So, to decrease costs of production businesses can move manufacturing facilities closer to sources of less expensive natural and labor resources. That was almost the obviouse solution of the problem with growing costs and all large U.S. corporations start to transfer large part of their manufacturing facilities abroad, mostly into the developing countries.

As the result of the processes of off-shoring and outsorcing the number of people employed by the manufacturing sector of the national economy after 1980 starst to diminish . During the period from December of 1979 through December of 2007 (pre-recession time) the number of manufacturing jobs in the USA decreased from 19.4 million to 13.9 million people. In other words, 5.5 million manufacturing jobs have been lost.

At the same time number of people in sales increased during the same period of time from 10.2 to 15.4 million. That means the increase by 5.2 million jobs.

The number of people employed by the financial sector during the same period almost doubled: increase from 4.8 to 8.4 million (Economic Report of the President 2008, Table B-46).

Table 1 shows the trend of the sharp decreases in numbers of manufacturing and goods producing jobs and their percentages of the civilian labor force from 1980 through 2007 (- 4.85 million and -2.03 million respectively), and the increases of numbers of service jobs total, finances jobs and government jobs(+49.10 million, +3.28 million and +5.84 million respectively).

Interestingly to mention the fact that from 2007 through 2010 (the recession and post-recession years) number of jobs in all above mentioned groups declined except the government jobs. Number of government jobs during this period increased by 264 thousands and became in 2010 almost twice greater than number of manufacturing jobs: 22.48 million versus 11.52 million.

Table 1 Changes in the different categories of jobs from 1961 through 2010 in millions and percentage of the Civilian Labor Force. (1 and 2)

Years	Civilian Labor Force	Manufacturing Total Jobs	Manufacturing % of CLF	Goods Producing Total Jobs	Goods Producing % of CLF	Service Jobs Total	Service Jobs % of CLF	Finances Total Jobs	Finances % of CLF	Government Total Jobs	Government % Of CLF
1961	70,459	15,011	21.30%	18,647	26.50%	35,458	50.30%	2,590	3.70%	8,706	12.40%
1970	82,771	17,848	21.60%	22,179	26.80%	48,827	59.00%	3,532	4.30%	12,687	15.30%
1980	106,940	18,733	17.50%	24,263	22.70%	66,265	62.00%	5,025	4.70%	16,373	15.30%
1990	125,840	17,695	14.10%	23,723	18.90%	85,764	68.20%	6,614	5.30%	18,413	14.60%
2000	142,583	17,263	12.10%	24,649	17.30%	107,136	75.10%	7,684	5.40%	20,790	14.60%
2007	153,124	13,879	9.10%	22,233	14.50%	115,366	75.30%	8,301	5.40%	22,218	14.50%
2010	153,889	11,524	7.50%	17,755	11.50%	112,064	72.80%	7,630	5.00%	22,482	14.60%

Source: U.S. Bureau of Labor Statistics

The link between the growth of the productivity and the growth of wages and as the result the growth of the consumption has been broken. Growing supply needs demand to grow also. How to finance the growth of consumption? The solution of this problem, was it intuitive or analytical who knows, has been found in the developing the housing market.

The house is the largest and the most valuable asset for most American households. If home's market value grows the owner can cash out the appreciation of the house value by borrowing this amount from the bank. But borrowed money sooner or later should be paid back. The households' debt starts rapidly expand. If in 1981 the household debt was equal about 48 % of the national GDP: debt - $1,507.2 billion versus GDP - $3,128.4 billion, in 2007 these two numbers became practically equal: debt - $13,765.1 billion versus GDP - $13,841.3 billion.

It means that taking the inflation into the consideration the household debt has been grown 5.7 times in 26 years. This debt growth forced the saving rate to drop from 10% in 1980 to 0.6% in 2007 (Economic Report of the President 2008, Table B-30).

The second important Macroeconomic cause of the recession is the new U.S. role in the global division of labor as the supplier of the technology and investments abroad and the consumer of cheap imported consumer goods and expensive energy resources.

There are at least three factors which negatively affected the U.S. national economy's growth during the last 20-25 years as the result of that change:

1) a substantial loss of the internal money flow to other countries for imports;
2) the loss of jobs initially in manufacturing and later also in the services providing sector;
3) the loss of investments for the domestic economy because of the growing investments abroad.

Some statistical data can illustrate above mentioned statements. In three tables presented bellow we are using data through the year 2007 which is the last year before the Great Recession.

Table 2. The trade balance between the USA and China in billions of USD. (Source: U.S. Census Bureau).

1999	2000	2001	2002	2003	2004	2005	2007
-68.7	-83.9	-83.1	-103.1	-124.1	-161.9	-201.5	-256.2

Table 3. The trade balance between the USA and Mexico before and after NAFTA (1994) in billions of USD. (Source: U.S. Census Bureau).

1993	1994	1995	1996	2000	2005	2007
+1.7	+1.3	-15.8	-17.5	-24.5	-49.7	-74.6

Table 2 shows that the deficit in trade between the USA and China has been grown from $68.7 billion in 1999 to $256.2 billion in 2007 and $266.3 billion in 2008. The volume of U.S. imports from China $321.7 billion in 2007 was equal about 10% China GDP ($3.4 trillion in 2007) (3).

The deficit in trade with Mexico (Table 3) reached in 2007 $74.5 billion when in 1994 (before NAFTA) it was a surplus of $1.3 billion. GDP Mexico in 2007 was $1,034.7 billion, so U.S. imports in 2007 valued of 213.6 billion was equal about 20% of Mexico GDP (4).

Table 4 The U.S. Balance of Trade (trade in goods) in billions of USD. (Source: the Economic Report of the President 2008, Table B-103).

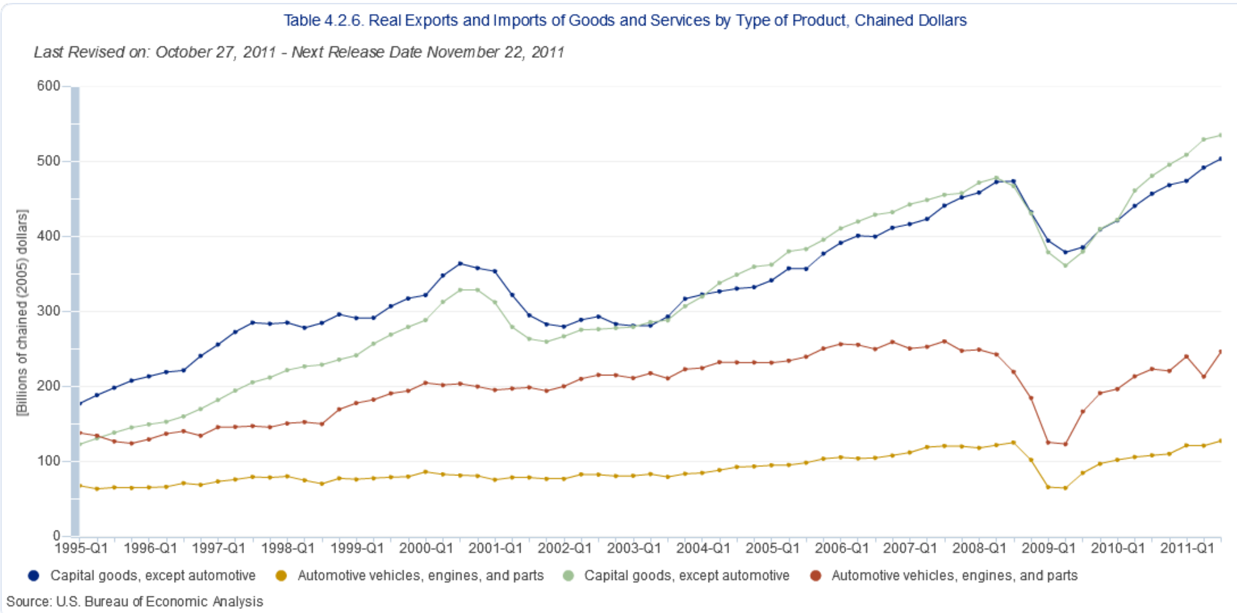
1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
-198.1	-246.7	-346.0	-454.4	-427.2	-482.3	-547.3	-665.4	-787.1	-838.2

Table 4 shows that the trade deficit in ten years period from 1997 through 2006 has quadrupled (5). It is the illustration of the core idea of the economic strategy implemented by the U. S. Government since 1980-s: the increase consumption of imported goods paid by money borrowed by household from banks who have borrowed money from the Federal Reserve System who has borrowed the substantial part of its funds from countries who exported their products to the USA: China, Japan, Saudi Arabia, Brazil.

The decline in the number of manufacturing jobs and the off-shoring of manufacturing facilities into developing countries start the process of the deindustrialization of the USA. Graph 1 bellow has been built upon interactive tables of Bureau of Economic Analysis (6). It shows changes in exports and imports of capital goods (blue and green lines respectfully) and exports and imports of automotive vehicles, engines and parts (yellow and brown lines respectfully).

If imports of automotive vehicles, engines and parts during this 16 years period was always about twice higher than exports, imports of capital goods has exceeded exports in 2004. That means that around year of 2004 the USA lost their status of the manufacturing leader of the world.

Graph1. Real exports and imports of capital goods and automobiles in chained dollars in 1995-2011. (Source: U.S. Bureau of Economic Analysis)

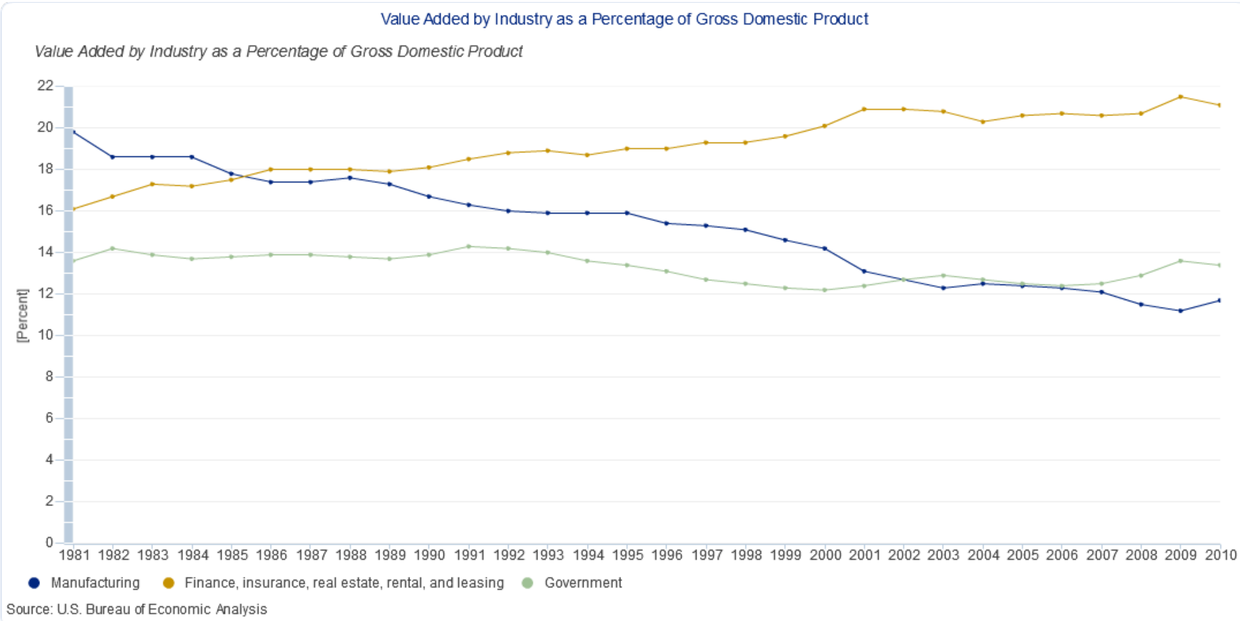


The Graph 2 that also has been built on the basis of the data from the interactive tables of the Bureau of Economic Analysis of the U.S. Department of Commerce shows how over 30 year period from 1981 through 2010 values added by three selected industries: manufacturing, finance and government as the percent of the U.S. GDP have drastically changed (7).

The manufacturing industry input into GDP (blue line) declined from almost 20% to about 11.8%. The government industry input (grey line) has slightly fluctuated between 12 and 14%. The finance, insurance, real estate, rental and leasing industry input (yellow line) has increased from 16% to about 19%.

This graph is another illustration of the disturbing fact that during the last 30 years structural changes in the U.S. economy drastically reduced the role of manufacturing in the USA and its input into country's GDP. This is the another illustration of the process of deindustrialization of the largest economy in the world that has been started after the neo-liberal economic model has replaced the Keynesian economic model in 1980s.

Graph 2. Value added by manufacturing, services and government as the percentage of GDP in 1981- 2010. (Source: U.S. Bureau of Economic Analysis).



What Government has done to fight the Recession and how the National Economy has responded?

To fight this recession the U.S. Government used both fiscal and monetary policies mechanisms. First of all the U.S. Congress passed in October of 2008 The Emergency Economic Stabilization Act of 2008 which adopted the Troubled Asset Relief Program (TARP). This program gave rights to the U.S. Treasury to buy mortgages and some other financial instruments for the amount of 700 billion dollars.

But TARP has not been able to recover lending activities of banks which have received monies from the Federal Government. The recession has deepened and could grow into the depression. During two quarters after Stabilization Act the growth rate of the national economy dropped a big time: the fourth quarter of 2008 – 5.4%, and the first quarter of 2009 -6.4%.

In addition to 1.5 trillion dollars that Government used to stimulate economic growth the Federal Reserve System increased the money supply by about 2.25 trillion dollars buying securities from banks and providing funds to fight possible defaults in payments of the owners of student loans, automotive loans and credit cards.

No doubt, that Government took the leading role in helping economy to overcome the recession. As the result there were some positive outcomes. But unfortunately these efforts do not have enough stimulus power to push the economy out of the recession fast and decisive.

The rate of unemployment dropped in October 2011 compare with December 2009 from 10% to 9.0%. This is a positive but not the substantial improvement. New jobs have been created but mostly in the government sector of the national economy.

The extension of the terms of unemployment benefits payments up to 99 weeks helps to support families of almost 15 million Americans who lost their jobs as a result of the recession.

GDP is not falling anymore. Starting the last two quarters of 2009 and after that shows the growth.

The Federal Government has provided support to state and municipal governments not only in a form of funds for the infrastructure repairs (roads, bridges) and to support jobs of teachers, police officers and firefighters but also in a form of subsidies of interest payments on municipal bonds. As result of these subsidies the interest on municipal bonds increased from 4.5% to 7%, so municipal governments have been able to obtain about 50 billion dollars of investors' money to finance local projects.

Table 5 U.S. GDP quarterly changes in 2008-2011 (Percent change from preceding period based on chained 2005 dollars)

	08/1	08/2	08/3	08 /4	09 /1	09 /2	09 /3	09 /4	10 /1	10/2	10/3	10/4	11/1	11/2	11/3
GDP	-1.8	1.3	-3.7	-8.9	-6.7	-0.7	1.7	3.8	3.9	3.8	2.5	2.3	0.4	1.3	2.5

Source: U.S. Bureau of Economic Analysis.

Table 5 shows that recovery has started during the 3d quarter of the year 2009. This recovery was slow and anemic. It has been called "jobless recovery" when some level of economic growth has been achieved but the situation with employment has not been improved substantially (8).

Table 6 bellow shows that despite of the stimulus program GDP itself and its components of "Personal Consumption Expenditures – (C), "Government Expenditures" – (G) and "Net Exports "- (X-M) in the Third Quarter of the year 2011 have exceeded its value of the Fourth Quarter of the year 2007 when the Great Recession practically has started (C: $9,449.5/ $9, 312.6; G: $2,508.2 / $2,455.3; X-M: -$409.4 /-$564.6).

The main GDP component reflecting the economic growth - "Gross Private Domestic Investment" - (IG) still did not have reached their own level before the recession has started (IG: $1,796.6/ $2,123.6).

The component of "Personal Consumption Expenditures" – (C) has reached the level of the Fourth quarter of 2007 only during the Fourth quarter of 2010. (C: $9,328.4 / $9,312.6) (9).

Table 6. U.S. GDP and its components quarterly changes in 2007-2011 (in billions of 2005 dollars). Revised data on 09/27/2011

	GDP	C	IG	G	X-M
2007 Q3	13,269.80	9,285.20	2,176.30	2,447.90	-638.1
2007 Q4	13,326.00	9,312.60	2,123.60	2,455.30	-564.6
2008 Q1	13,266.80	9,289.10	2,055.70	2,473.90	-550.2
2008 Q2	13,310.50	9,285.80	2,024.00	2,484.50	-486.2
2008 Q3	13,186.90	9,196.00	1,934.70	2,510.70	-484.6
2008 Q4	12,883.50	9,076.00	1,744.60	2,520.50	-478.0
2009 Q1	12,663.20	9,040.90	1,490.40	2 509.60	-404.2
2009 Q2	12,641.30	8.998.50	1,397.20	2,546.00	-331.8
2009 Q3	12,694.50	9,053.30	1,407.30	2,554.20	-352.4
2009 Q4	12,813.50	9,060.20	1,522.00	2,548.50	-346.9
2010 Q1	12,937.70	9,121.20	1,630.00	2,540.60	-376.8
2010 Q2	13,058.50	9,186.90	1,766.80	2,564.00	-437.4
2010 Q3	13,139.60	9,247.10	1,766.80	2,570.30	-458.7
2010 Q4	13,216.10	9,328.40	1,734.50	2,552.30	-414.2
2011 Q1	13,227.90	9,376.70	1,750.90	2,513.90	-424.4
2011 Q2	13,271.80	9,392.70	1,778.40	2,508.20	-416.4
2011 Q3	13,352.80	9,449.50	1,796.60	2,508.20	-409.4

Source: U.S. Bureau of Economic Analysis

The data from this table clearly warning that the recovery cannot be considered permanent when the IG – Gross Private Domestic Investment - the major component of the national GDP responsible for the economic growth has not reached the level of the year 2007. That means that even it looks that the U.S. economy has recovered from the recession but the double dip recession is still possible.

Lessons and options.

The official rate of unemployment in 2008-2009 around 10% means that the actual unemployment rate exceeds the so called “natural rate” of unemployment by 5 %. According to Okun’s Law (Arthur Okun was the economic adviser to President Johnson) the U.S. potential GDP has declined during the recession by 10% (5% x 2) or about 1.45 trillion dollars. So, if the investment (fiscal) multiplier of the government spending in the USA is about 1.5 to bridge this gap between potential and real GDP the U.S. Government should invest into the national economy about 960 billion dollars. In other words, it looks that the economy will need the additional stimulus package of about 180 billion dollars to achieve the full and speedy recovery. This is the first option.

Obviously the additional increase in the Government expenditures will further increase the national debt. But when the economy should be helped to recover from the very deep recession the national debt issue can be left for the near future efforts.

According to some economists estimates for the developed economies in the contrast to developing economies when the National Debt/ GDP ratio is below 90% the correlation between the national debt and the economic growth is weak. After the ratio will exceed the 90% level the growth rate will decline by 1% (Reinhart, Carmen M., Rogoff Kenneth S. Growth in a Time for Debt. January 2010.) (10).

The national debt has reached the astonishing level of 14.78 trillion dollars in September of 2011 (11). This amount is practically equal of U.S. current GDP in current dollars. The U.S. nominal GDP in 2010 was $14,526.5 billion dollars (12). That means that National Debt/GDP ratio is around of 100%. So the size of the debt is big enough to affect the speed of the economic recovery and the economic growth in the future.

The second option will be to stimulate” C” and “IG” components of GDP through tax cuts. The recent compromise of the Administration with Republicans on tax cuts extension is pointed out into that direction. The problem with this option is the same as the increase in Government’s spending option – the further increase of the national debt which can be left for the near future efforts as it was mentioned above.

But the leading Government’s effort should be in the support of new industries where the USA has competitive and comparative technological advantages. Increasing Government’s spending (“G” component) into these industries to help businesses to develop the new energy sources, new means of the transportation and communications, and more efficient components of the infrastructure will not only create new jobs and help “C” component to grow, it will also help” IG” component to grow because of the capital investments, and will increase U.S. exports and positively affect the Net Exports component of GDP. When all four components of GDP will grow we will see the economy‘s full recovery. That could be the best Government’s economic strategy in the long run and the third option.

References:

1. ftp://ftp.bls.gov/pub/suppl/empsit.ceseeb1.txt
2. http://www.gpo.gov/fdsys/pkg/ERP-2011/pdf/ERP-2011-table35.pdf
3. http://www.census.gov/foreign-trade/balance/c5700.html
4. http://www.imf.org/external/pubs/ft/weo/2011/02/weodata/weorept.aspx?sy=1980&ey=2016&sc
5. Real Exports and Imports of Goods and Services in 1995-2011 in Chained Dollars http://www.bea.gov/iTable/iTable.cfm?ReqID=9&step=1
6. Real Exports and Imports of Goods and Services in 1995-2011 in Chained Dollars
7. Value Added by Industry as a Percentage of GDP in 1981-2010. http://www.bea.gov/iTable/iTable.cfm?ReqID=9&step=1
8. U.S. GDP Quarterly Changes in 2008-2011 (Percent Change From Preceding Period Based on Chained 2005 Dollars). http://www.bea.gov
9. U.S. GDP and Its Components Quarterly Changes in 2007-2011 (in Billions of Chained 2005 Dollars). Revised data on 09/27/2011.
10. Reinhart, Carmen M., Rogoff Kenneth S. Growth in a Time for Debt. American Economic Review 100 (2), 573-578.
11. http://www.usdebtclock.org/
12. http://www.bea.gov/national/index.htm

THE EFFECT OF MARKETING DETERMINANT TOWARDS SMALL AND MEDIUM ENTERPRISES (SMEs) INTERNATIONAL JOINT VENTURES (IJVs) PERFORMANCE IN THAILAND MANUFACTURING SECTORS

Athiwat Kanjanavanikul[1], Wanida Wadeecharoen[2], Sombat Teekasap[3]

[1] Author: Dr. Authiwat Kanjanavanikul, Lecturer Department of Marketing, Faculty of Business Administration, Thonburi University, Bangkok, Thailand, wadeecharoen@gmail.com

[2] Co-Author: Dr. Wanida Wadeecharoen, Lecturer Department of Management, Faculty of Business Administration, Thonburi University, BKK Thailand, buncha.k1975@hotmail.com

[3] Co-author: Assc.Prof. Dr. Sombat Teekasap, Senior Lecturer, Dean of Engineering, Faculty of Engineering, Eastern Asia University, Bangkok, Thailand, sombat.teekasap@gmail.com

**Corresponding author: Dr. Wanida Wadeecharoen Thonburi University 29 Soi Petkasem 110 Nongkangphlu, NongKame, Bangkok 10160 Tel:0-2809-0823-27 Fax:0-2809-0829 wadeecharoen@gmail.com*

Topic of submission: *Business Administration*

THE EFFECT OF MARKETING DETERMINANT TOWARDS SMALL AND MEDIUM ENTERPRISES (SMEs) INTERNATIONAL JOINT VENTURES (IJVs) PERFORMANCE IN THAILAND MANUFACTURING SECTORS

Athiwat Kanjanavanikul[1], Wanida Wadeecharoen[2], Sombat Teekasap[3]

[1,2] Faculty of Business Administration, Thonburi University, Bangkok, Thailand
[3] Faculty of Engineering, Eastern Asia University, Bangkok, Thailand

ABSTRACT

Small and Medium Enterprises (SMEs) play a vital role toward Thailand modern economy. Since, they comprise the majority number of Thailand's business enterprises over 95 percent (Office of SME Promotion, 2010). Manifestly, SMEs account for 38 percent of national GDP, which intimately stands at close to 9 trillion baht and direct responsible for employing at total 9 million people (The Nation: Business; Jun 18, 2010). One of the vital factors contribute to this phenomenon is International Joint Venture (IJV) as a strategic important mode in internalization of SMEs (Lu & Beamish, 2006). In Thailand's manufacturing sectors SMEs IJV representing two third of the IJV industrial entities (Wadeecharoen & Nik Mat, 2010). This contributes to Thai's economic in term of productivity, employment and effective regional resources utilization (Cheungsuvadee, 2006). In addition, SME IJV need for acquiring of technology transfer (Saji, Jain & Krishnamoorthy, 2005) from its partners to improve their competitiveness. Surprisingly, the successful determinant of SME IJV performance is unpredictable (Wadeecharoen & Nik Mat, 2010). Thus, the aim of this study is to investigate the antecedents of SME IJV both direct effect and indirect effect on its performance. Market orientation (MO) and relationship marketing orientation (RMO) were special emphasis and hypothesize as significant predictors of Thailand's SME IJV performance. Structure equation model (SEM) was designed as appropriated method to interpret and demonstrate research assumption respectively.

Keywords: IJV, RMO, MO, SME, Thailand

INTRODUCTION

Thailand foresees a turbulent economic development due to the unstable political situation, the tumbling world oil prices, unstable interest rates and worsening business confidence. Despite the country's trepidation, the Central Bank of Thailand is optimistic in the 2010 economic outlook. Due to the persistently high oil prices in the past month, the recent downturn in oil prices has done little to change the rising consumer price index. Consumer purchasing power was affected due to the increasing inflation rates. Despite the acceleration of headline inflation during the forth quarter from the increase in oil prices, unemployment rate and public debt stayed low (www.bangkokpost.com, 20 Oct 2010).

The savior for economic sustainability could be enhanced with the presence of small and medium enterprises (SMEs) in International Joint Venture (IJV). SME in Thailand is defined as any business that has employees less than 200 hundred and fixed capital less than Baht 200 Million. In Thailand, SME consists of 95 percent of the national business and is directly responsible for employing over twenty percent of the total industrial workforce. The contribution from SMEs to the national GDP and export has increased from 31% in 2006 to 38% in 2007 (Bangkok Post: March 2007). One of the vital factors contributing to this phenomenon is International Joint Venture (IJV) as a strategic foreign entry mode by foreign investors. Before the ASEAN financial crisis in 1997, Thailand successfully attracted a large and rapid foreign investment inflow (50%) from Japan, Taiwan, China, Hong Kong, and Singapore especially in manufacturing sectors. While these figures are impressive, for Thailand's economic recovery to remain strong, the SME sector must remain competitive. Additionally, SMEs accounted for 29% of the total exports by value in 2006. In 2006, the government allocated Bt19.2 billion on promoting SMEs. The contribution of SMEs to the GDP is expected to grow by 4 percent in 2007. Japanese is the main contributor of Thailand SMEs investor account about 66 percent. Since 2000, Japanese SME investment into Thailand has increased 56% of Japanese SMEs approved by BOI since 2000 are export-oriented (export at least 80%). Japanese SMEs play significant role in cluster development such as in automotive parts, machinery, electronic part and molds & dies. In view of the importance of IJV to SME development, *"we would like to examine the factors that could contribute directly and indirectly to success of SME IJV performance in Thailand"*.

Contribution of IJV to the Thai economy

IJV in Thailand remains an attractive entry mode for many international firms. It shows a steady increase despite turbulent times in Thailand. In Table 1, it shows that IJV projects that have been approved by BOI had jumped to 357 in 2007 from 347 projects in 2006. This involves USD7646 million of foreign direct investment (FDI) in 2007, an increase of about USD3500 million from 2006. Thailand economic growth has also just improved in 2010 after two years of negative trade balance in 2008 and 2009 (Table 2). The outlook for IJV companies in Thailand seems promising. This study shows that in spite of all the troubled waters in Thailand, its economic outlook is still strong and important role to return Thailand to its original glory and strength. With these words, we would like to conclude that SME IJV could play a role in improving the economic outlook of Thailand.

From the macro-economic evidence given above and the support of Thai Board of Investment (BOI), foreign direct investment (FDI) in the form of international joint venture (IJV) is promoted since 1960 (Julian, 2005). With this in mind, this study attempts to review the contribution of International Joint venture companies to sustain Thailand economic position despite turbulent times

Table 1: Economic Indicator of Thailand (2005-2010)

Economic Indicators	2005	2006	2007	2008	2009	2010
Economic Growth	4.5	5.0	4.2	-2.7	-2.2	4.5
Private consumption	4.3	3.1	3.7	3.8	-1.1	4.3
Public consumption	13.7	3.4	8.0	10.0	5.8	4.2
Private Investment	10.9	3.9	5.3	7.0	-12.8	8.2
Public investment	11.3	4.5	5.9	6.0	2.7	6.8
Export growth (%)	15.0	17.4	8.1	5.1	-12.7	9.7
Import growth (%)	25.9	7.0	8.4	8.5	-21.8	18.9
Trade Balance	-8.5	2.2	2.2	0.1	19.4	4.8
Current account	-7.9	3.2	2.6	1.6	20.3	7.2

Source: Bank of Thailand (BOT)

Table: 2 International Joint Venture Investment Project Approved by BOI

	2003	2004	2005	2006	2007	2008	2009	2010
Joint Venture (No. of project)	258	357	368	347	357	342	253	298
Joint Venture (Total of investment in Mil. Baht)	108,102	189,349	186,656	142,352	267,608	191,371	54,341	95,628
Joint Venture (total of investment in Mil USD)	3,604	6,312	6,222	4,745	8,921	6,379	1,812	3,190

Source: International Affairs Bureau: Board of Investment (BOI) Thailand, As of January 27, 2011

LITERATURE REVIEW

IJV can be defined as the participation of two or more partners who join forces to establish a newly incorporated company in which each has an equity position; thereby each expects a proportional share of dividend as compensation and representation on the board of directors (Glaister & Buckley 1998). Nonetheless, the view of goal accomplishment underlies most interpretations of IJV (Beamish, 1987; Hamel, 1991; Hamel, Doz & Prahalad, 1989; Anderson, 1990; Beamish and Delios, 1997). Thus, defining IJV performance as the degree of accomplishment of IJV goals is the first step in capturing the meaning given to this concept by previous researchers.

SME is defined as an enterprise which has employees less than 200 and fixed capital less than 200 million baht, excluding land and properties (SME bank, 2008). In business practices, the definition of SMEs can be extended including number sharing holdings by parent companies, enterprise structures and independence. The principle criterion for SME is an enterprise's independence. This characteristic indicates that not more than 25% of SME capital should be owned by one large or many large companies (1). At present, there are many multinational companies in the form of franchise companies and joint-venture between Thai and overseas companies. Some of these companies should not be classified as Thai SMEs. In this study, Thai SME definitions are classified as follows:

Table 3: The definition of SME provided by the Ministry of Industry, Thailand

Type	Small		Medium	
	Employees	**Capital (million baht)**	**Employees**	**Capital (million baht)**
Production	Not more than 50	Not more than 50	51-200	51-200
Service	Not more than 50	more than 50	51-200	51-200
Wholesale	Not more than 25	Not more than 50	26-50	51-100
Retail	Not more than 15	Not more than 50	16-30	31-60

Source: Small and Medium Enterprise (SMEs) Bank of Thailand (http://www.sme.go.th)

SME IJV Performance

The small medium enterprise or SME is defined as an enterprise which has employees less than 200 and fixed capital less than 200 million baht, excluding land and properties (SME bank, 2003). Similarity, the ministry of Thailand industry defined SME based on the number of workers and fixed capital (refer to table 3) (Ministry of Thailand Industry, September 2002).

In international business, FDI in the form of IJVs who jointly invested between Thai and foreign firms. The characteristic of IJV firms could not be classified as Thai SMEs unless the ownership owned by one or jointly several enterprises are less than 25 percent or foreign firms owned ownership less than 50 percent (Ministry of Industry, Thailand 2002).

There is no consensus regarding what are the appropriate measures to determine the effectiveness performance of SME IJV. Since IJV has been measured by using traditional measurement such as financial indicators are indicated by profitability, sale growth and cost position (Lecraw, 1983; Ding, 1977; Tomlinson, 1970; Venkatraman & Ramanujam, 1986) and objective measure is measured by the survival and non survival of IJV from the time of its formation (Geringer, 1990; Killing, 1983; Stopford & Wells, 1972; Franko, 1971) and IJV duration (Kogut, 1988, Harrigan, 1986).

However, these traditional measures are problematic due to the characteristic of IJV firms. Since the financial and objective measures evaluate only single dimension of IJV performance when profitability is an explicit goal of an IJV firm (Venkatraman & Ramanujam, 1986) and fail to adequately reflect the extent of an IJV has achieved its objectives (Blodgett, 1987; Killing, 1983). Thus, in this situation financial and objective measure is unlikely to accurately capture the real picture of SME IJV performance versus subjective measure since poor profitability, liquidation or instability may not indicate the poor performance of SME IJV if the IJV parents are met or exceeded its objectives (Anderson, 1990).

This study attempts to measure SME IJV performance by using subjective approach in order to capture the SME business performance of IJV partners. Thus, the performance measure constructs were adapted in this study has been tested in IJV setting with shows very high reliability cronbach alpha of 0.90 (Thuy & Quang, 2005) and follow by reliability cronbach alpha of 0.88 (Cullen et al., 1995).

Relationship Marketing Orientation (RMO)

RMO consists of four components; namely, bonding, empathy, reciprocity, and trust as originally proposed by (Callaghan, McPhail & Yau, 1995). The concept of RMO is explained by the sentence below;

"The RMO centers on the creation and maintenance of relationship between two parties of exchange, the supplier as an individual and the customer as an individual through the possession of the desire to be mutually empathic, reciprocal, trusting and to form bonds.

(Challaghan et al., 1995)

Market Orientation and Performance

Market Orientation (MO) is the organizational culture that most effectively and efficiently creates the necessary behaviors for the creation of superior value for buyers, and thus continuous superior performance for the business market orientation which consists of three behavioral components: customer orientation, competitor orientation, inter-functional coordination and two decision criteria: long-term focus and profitability (Narver & Slater, 1990). Farrell, Oczkowski & Kharabsheh, (2008) examine the relationship between market orientation and IJV performance in Malaysian manufacturing and service sectors. Their result has proved that market orientation has positive, significant impact on sales growth, customer retention, new product success and overall IJV business performance. In Thailand, market orientation has been found to be positively and significantly related to IJV satisfaction and overall economic performance in cross industry sectors such as agricultural, metal-working electrical and chemical industries (Julian & O'Cass, 2008; 2005; 2004; 2002). Thus, the following hypothesis is formulated regarding this relationship:

H1: Market Orientation (MO) has positive influence on SME IJV performance.

Market Orientation and RMO

This study defines market orientation (MO) as a composite factors suggested by (Narver & Slater, 1990) and relationship marketing orientation (RMO) as a composite factors as suggested by (Yau et al, 2000) Only one study conducted in IJV setting by Racela & Chaikittisilpa and Thourungroje, (2007) found strongly positive significant support for the relationship between composite MO and cooperation (RMO) among exporters in Thailand exporting firms. Other studies found positive and significant relationship between market orientation and relationship marketing orientation RMO as a single dimension in non-IJV settings such as MO with trust (Farrelly & Quester, 2003; Siguaw, Simpson & Baker, 1998), commitment (Castro, Armario & Rio, 2005; Caruana, 1997; Jaworski & Kohli, 1993; Farrelly & Quester, 2003), cooperation (Racela et al, 2007; Siguaw, Simpson & Baker, 1998) while there is only one study that has found positive relationship but no significant support between distributor's MO and commitment to the suppliers (Siguaw, Simpson & Baker, 1998).Thus, the relationship between MO and dimension of RM is still fragmented with inconsistent finding results. This gives a reason for this study to carry out further investigation on linkage between MO and RMO as a composite factor. Thus, the following hypothesis is formulated with regards this relationship:

H2: Market Orientation (MO) has positive influence on Relationship Marketing Orientation (RMO).

Relationship Marketing Orientation and Performance

The relationship marketing orientations (RMO) have been empirically tested mostly in non-IJV setting. Those studies conducted in the non-IJV setting reveal equivocal finding in that several studies have found a positive and significant relationship between RMO and business performance (Chattananon & Trimetsoontorn, 2009; Gorden, Pires & Stanton, 2008; Sin, Tse, Chan, Heung & Yim, 2006; Sin, Tse, Yau, Chow & Lee, 2005; Sin, Tse, Yau, Lee & Chow, 2002; Skarmeas, Katsikeas & Schlegelmilich, 2002) while some studies have found insignificant positive relationship in manufacturing sectors (Sin et al, 2005; Siguaw, Simpson & Baker, 1998). Other previous studies also support positive impact of single dimension RMO with performance in IJV setting such as trust (Chattananon & Trimetsoontorn, 2009; Lin & Wang, 2008; Ng, Lau & Nyam, 2007), commitment (Julian & O'Cass, 2002; Demirbag & Mirza, 2000; Cullen, John, Johnson, Jean, Sakino & Tamoaki, 1995), cooperation (Luo & Park, 2004; Pearch, 2001; Tiessen & Linton, 2000. Thus, the following hypothesis is formulated:

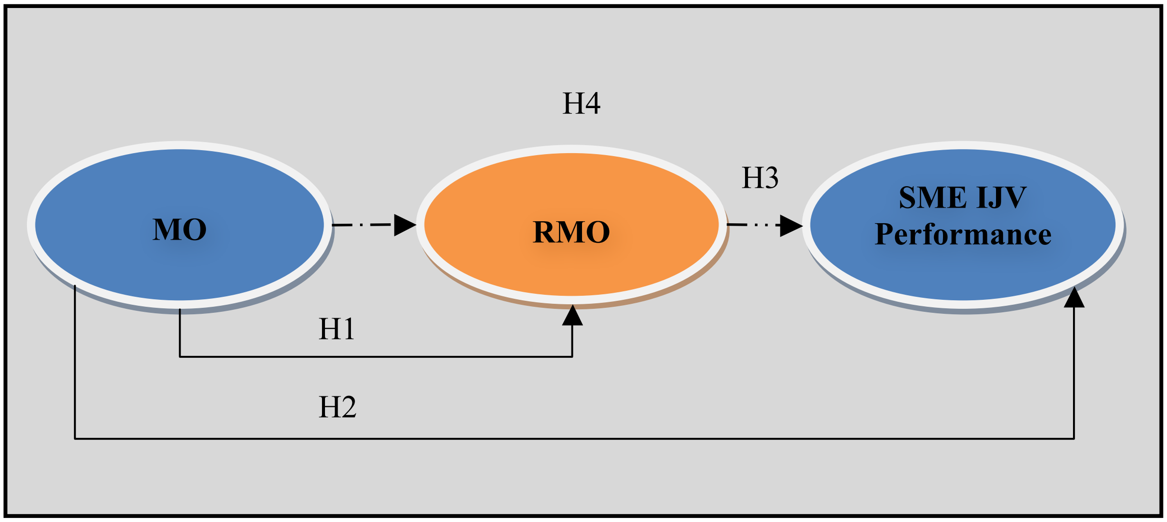
H3: Relationship Marketing Orientation (RMO) has a positive influence on SME IJV performance.

Market Orientation, RMO and Performance

The mediating effect of RMO has been suggested by Zyl and Helm (2007) who explored the conceptual model link between entrepreneurial leadership with performance of South Africa's small tourism companies with MO and RMO as mediators. RMO represented by cooperation has been investigated as a middle intervening variable, but it has not been empirically tested as a mediator between MO and IJV performance of textile exporting firms in Thailand (Racela et al, 2007).

H4: Relationship Marketing Orientation (RMO) has mediating effect on the relationship between Market Orientation (MO) and SME IJV performance.

RESEARCH MODEL



METHODOLOGY

Sampling

This study used proportionate stratified random sampling. Stratified random sampling was used when samples were taken from identifiable groups (strata), subgroups, etc. the subgroup identified in this study was SME in IJV industrial sub-sectors (Black, 1999). Based on this method, 350 SME IJV companies were identified according to the legal definition of IJV SME: number of employees less than 200 and foreign equity ownership of less than 50 percent from Thailand Company Information (2006-2007) and Factory Directory in Thailand (2008). The items or samples of this study were the IJV managing directors (MD) or general managers who represented the IJV's partners for both local and foreign operations in Thailand. IJV MD was selected mainly because he/she is the key person who knows about IJV management and considered as information gatekeepers (Julian, 2008; Julian & O'Cass, 2005: 2004: 2002). Previous research provides support for relying on the IJV general manager for reliable data (Geringer & Hebert, 1991; Child, Yan & Lu 1997).

Instrument & Data collection and analysis method

The instrument developed for this study is adopted from past prominent studies in the area of IJV setting. SME IJV performance 6 items adapted from Cullen et al, (1995) and Thuy & Quang, (2005). The cronbach alpha is 0.90. RMO 12 items adapted from Yau et al., (2000). The cronbach alphas of each four components ranged from 0.764 to 0.908. MO 12 items adapted from Narver & Slater, (1990). The cronbach alpha is 0.88.

CONCLUSION & DISCUSSION

This study has assigned its objective in establishing of four assumptions such as (1) Does market orientation (MO) has positive influence on SME IJV performance. (2) Does market orientation (MO) has positive influence on relationship marketing orientation (3) Does relationship marketing orientation (RMO) has a positive influence on SME IJV performance. (4) Does relationship marketing orientation (RMO) has mediating effect on the relationship between marketing orientation (MO) and SME IJV performance. These assumptions are mainly focus on the direct effect of marketing factors namely MO and RMO toward SME IJV performance. In particularly, the indirect effect of RMO is highlighting emphasizes as a composite mediator variable consist with bonding, empathy, reciprocity, and trust (Callaghan et al, 1995; Yau et al, 2000). The role of RMO is predicted to have a mediating effect between MO and SME IJV performance in Thailand.

Since the effect of relationship marketing orientation (RMO) has played a vital significant effect on general business performance (Chattananon & Trimetsoontorn, 2009; Gorden, Pires & Stanton, 2008; Sin, Tse, Chan, Heung & Yim, 2006; Sin, Tse, Yau, Chow & Lee, 2005; Sin, Tse, Yau, Lee & Chow, 2002; Skarmeas, Katsikeas & Schlegelmilich, 2002). Moreover, in particular RMO has played a positive impact on SME IJV performance across multi-national partners including Japanese, Taiwanese, Malaysian, American, Singaporean, British, German, Korean, Swiss, India, Dutch, New-Zealand, Norway, Hungary and others (Wadeecharoen & Nik Kamariah, 2010). Obviously, the important of RMO toward business performance couldn't be deny since its comprise with trust, commitment, cooperation and long-term orientation (Harker, 1999). Since IJV involves a long-term cooperation arrangement between at least two or more partners established for the achievement of mutually beneficial (Parkhe, 1993). Each partner would be contributing its own specific asset and actively participates to some extent in the managerial management of IJV (Geringer, 1998). Form this point of view, this study believes that SME IJV requires excellent relationship marketing with partners in terms of creating long lasting bonds, empathy, being reciprocal and also has a high degree of trust among SME IJV partners. This is worthy reasonable to demonstrate the significant role of RMO in SME IJV performance empirically.

Supplementary, marketing orientation (MO) is predicted to have a significant effect on SME IJV in Thailand. This assumption based on the past finding support that MO is the dominant determinant of SME IJV performance (Farrell, Oczkowski & Kharabsheh, 2008; Julian & O'Cass, 2008; 2005; 2004; 2002). Thus, this study believes that as long as IJVs are market-oriented, they are able to outperform their competitors because they understand their customer needs through inter-functional coordination across departments and organization wide responsiveness (Kohli & Jaworski, 1990) which in turn enhances its performance.

In summary, this study attempts to conclude that the successful of SME IJV in Thailand required the complement of MO and RMO. In order to make an IJV works successfully both partner must be oriented with its customer and also with its partner in order to achieve the mutual goals and objectives. Additionally, the quality of IJV partner relationship is also equally important; this is required empirically tested through the dimension of composite RMO. This study will be clarifying this concept for the further empirically result.

Acknowledgement

This study was supported by research grants from Thonburi University, BKK, Thailand

REFERENCE

Anderson, a. J. A. N. (1990). A Model of distributer firm and manufacture firm working partnerships. *Journal of Marketing, 54 (January)*, 42-58.

Beamish, P. W. a. B., J.C. (1987). Equity Joint Ventures and the Theory of the Multinational Enterprises. *Journal of International Business Studies, Summer*, 1-16.

Beamish, P. W., & Delios,A. (1997). *Improving Joint Venture Performance Through Congruent Measures of Success: In P.W.Beamish,&J.P.Killing (Eds.), Cooperating Strategies:European Perspectives*. San Francisco: The New Lexington Press.

Blodgett, L. L. (1987). Partner contributions as predictors of equity share in international joint ventures instability: Is it a problem?, *Columbia Journal of World Business*, Summer

Callaghan, M. McPhail, J. & Yaue, O.H.M. (1995). *Dimensions of a relationship marketing orientation: an empirical exposition*. Proceedings of the Seventh Biannual Word Mareting Congress. Vol. VII-II, Melbourne, July, p.10-65.

Caruana, A. (1997). Market orientation and organizational performance in the Australian public sector. *International Journal of Public Sector Management.* Vol.10, No.4, p.294-303.Jaworski, B.J., &

Kohli, A. (1993). Market Orientation: Antecedents and Consequences" *Journal of Marketing,* Vol.57, (July 1993), pp.53-70.

Castro, C.B., Armario, E.M., & Rio M.E.S.D. (2005). Consequences of market orientation for customers and employees. *European Journal of Marketing.* Vol.39, No.5/6

Chattananon, A., & Trimetsoontorn, J. (2009). Relationship marketing a Thai case. *International Journal of Emerging Markets.* Vol.4, No.3.p.252-274

Cheungsuvadee, K. (2006). Business adaptation strategies used by small and medium retail and increasingly competitive environment: a study of Ubon Ratchathani, Thailand, Edith Cowan University (P 230).

Cullen, John, B., Johnson, Jean, L., Sakino, & Tomoaki. (1995). Japanese and Local Partner Commitment to IJVs: Psychological Consequences of Outcome and Investments in the IJV Relationship. *Journal of International Business Studies,* 26(1).

Demirbag & Mirza, (2000). Factors affecting International Joint Venture success: an empirical analysis of foreign-local partner relationships and performance in Joint Venture in Turkey. *International Business Review,* 9:1-35.

Ding, D.Z. (1997). Control, Conflict, and Performance: A Study of U.S.-Chinese Joint Ventures. *Journal of International Marketing.* Vol.5, No.3, p.31-45

Farrell, M.A., Oczkowski E., & Kharabsheh, R. (2008). Market orientation, learning orientation and organizational performance in international joint ventures. *Asia Pacific Journal of Marketing and Logistics,* Vol.20, No.3, p. 289-308.

Farrelly, F. & Quester, P. (2003). The Effects of Market Orientation on Trust and Commitment: The case of the sponsorship business-to-business relationship. *European Journal of Marketing,* 37(3/4).

Franko, L. G. (1971). *Joint Venture Survival in Multinational Corporations*: New York: Praeger.

Geringer, J. M. (1990). Strategic Determinants of Partner Selection Criteria in the International Joint Ventures. *Journal of International Business Studies, 22*(1), 41-62.

Geringer, J.M., & Hebert, L. (1991). Measuring Performance of International Joint Ventures. *Journal of International Studies*. 22 (2).p.249.

Glaister, K. W, & Buckley, P. J. (1998). Management-performance relationships in UK joint ventures. *International Business Review* 7, 235-257.

Gordon, T.L.O., Pires G.D., & Stanton, J. (2008**).** The relationship marketing orientation of Hong-Kong financial services industry managers and its links to business performance. *Journal of Financial Services Marketing,* 13, 3.14

Hamel, G. (1991). Competition for Competence and Inter-Partner Learning Within International Strategic Alliances. *Strategic Management Journal, 12(Summer Special Issue). 83-103.*

Hamel, G., Doz, Y. L., & Prahalad, C.K. (1989). Collaborate with Your Competitors - and Win. *Harvard Business Review,* 67(1): 133.

Harrigan, K. R. (1986). *Managing for Joint Venture Success*: Lexington MA:Lexington Books.

Jaworski, B.J., & Kohli, A. (1993). Market Orientation: Antecedents and Consequences" *Journal of Marketing,* Vol.57, (July 1993), pp.53-70.

Julian, C. C. (2005). *International Joint Venture performance in South East Asia*. MA: Edward Elgar.

Julian, C., & O'Cass, A. (2002). The effect of firm and marketplace characteristics on International Joint Venture (IJV) marketing performance. *Asia Pacific Journal of Marketing and Logistics, 14* (1).

Julian, C., & O'Cass, A. (2004). The impact of firm and environment characteristics on International Joint Venture (IJV) marketing performance in Thailand. *Thunderbird International Business Review, 46* (4), 359-380.

Julian, C.C. (2008). Joint Venture Conflict: The Case of Thai International Joint Ventures", *Journal of Asia-Pacific Business, 9*(1).

Killing J.P. (1983). Strategies for joint venture success, New York: Praeger.7.

Kogut, B. (1988). Joint Ventures: Theoretical and Empirical Perspectives. *Strategic Management Journal*, *9*, 319-332.

Lecraw, J. D. (1983). Performance of Transnational Corporations in Less Developed Countries. *Journal of International Business Studies,* 14(1), 15-33.

Lin, X., Wang, C.L. (2008). Enforcement and performance: The role ownership, legalism and trust in International Joint Venture. *Journal of World Business* 43, 340-351

Lu, J., & Beamish, P. W. (2006). Partnering Strategies and Performance of SMEs' International Joint

Luo, Y., & Park S.H. (2004). Multiparty cooperation and performance in international equity Joint Ventures. *Journal of International Business Studies.* Vol.35, No.2,p. 142-160.

Naver, J.C., & Slater, S.F. (1990). The effect of a market orientation on business profitability. *Journal of Marketing,* Oct

Ng, P.W., Lau, C.M., & Nyaw, M.K. (2007). The effect of trust on International joint venture performance in China. *Journal of International Management*, 13, 430-448.

Pearch, R.J. (2001). Looking Inside The Joint Venture to Help Understand The Link Between Inter-Parent Cooperation and Performance. *Journal of Management Studies.*June. 38:4. p. 558-582.

Racela, O.C., Chaikittisilpa, C., & Thoumrungroje (2007). Market orientation, international business relationship and perceived export performance" *International Marketing Review,* Vol.24, No.2.

Saji, K.B., Jain, K., & Krishnamoorthy. S. (2005). Technology transfer through IJVs: determinants of transferor transferee relationship. *International Journal of Technology Transfer and Commercialisation*, 4(2), pp. 148-161

Sharmeas, D., Katsikeas, C.S., & Schlegelmilch, B.B. (2002). Drives of commitment and its impact on performance in cross-cultural buyer-seller relationships: The importer's perspective. *Journal of International Business Studies.* Vol. 33, No.4,p. 757-783.

Sharmeas, D., Katsikeas, C.S., & Schlegelmilch, B.B. (2002). Drives of commitment and its impact on performance in cross-cultural buyer-seller relationships: The importer's perspective. *Journal of International Business Studies.* Vol. 33, No.4,p. 757-783.

Siguaw, J.A., Simpson, P.M. & Baker, T.L. (1998). Effects of Supplier Market Orientation on Distributor Market Orientation and the Channel Relationship: The Distributor Perspective. *The Journal of Marketing*, 62(3), pp. 99-111

Sin, L.Y.M., Tse, A.C.B., Chan, H., Heung V.C.S. & Yim, F.H.K. (2006). The effects of relationship marketing orientation on business performance in hotel industry. *Journal of Hospitality & Tourism Research.* Vol.30:470.

Sin, L.Y.M., Tse, A.C.B., Yau, O.H.M., Chow, R.P.M., & Lee, J.S.Y. (2005). Market Orientation, Relationship Marketing Orientation, and business performance: The moderating effects of economic ideology and industry type. *Journal of International Marketing"* Vol.13, No.1,p. 36-57.

Sin, L.Y.M., Tse, A.C.B., Yau, O.H.M., Lee, J.S.Y., & Chow, R. (2002). The effect of relationship marketing orientation on business performance in a service-oriented economy. *Journal of Service Marketing.* Vol.16. No.7,p.656-676.

Stopford, J.M., & Wells, L.T. (1972) *Managing the Multinational Enterprise*, New York: Basic Books.

Thuy, L. X. & Quang, T. (2005). Relational Capital and Performance of International Joint Ventures in Vietnam. *Asia pacific Business Review,11*(3), 389-410.

Tiessen, J.H., & Linton, J.D. (2000). The JV dilemma: cooperating and completing in Joint Venture. *Canadian Journal of Administrative Science.* Vol.17, No.3 (Sep 2000)

Tomlinson, J. W. C. (*1970*). *The Joint Venture Process in International Business: India and Pakistan*. Cambridge, Mass.: MIT Press.

Venkatraman & Ramanujam, V. (1986). Measurement of Business Performance in Strategy Research: A Comparison of Approaches. *The Academy of Management Review*, 11(4), pp. 801-814
Ventures. *Journal of Business Venturing*, 21(4): 461-486.

Wadeecharoen, W., & Nik, Mat, N. K. (2008). The Significance of Relationship Marketing Orientation on International Joint Venture (IJV) Performance in Thailand. *The Journal of American Academy of Business, Cambridge, June 11-14.*

Wadeecharoen, W., & Nik, Mat, N. K. (2009). *The Mediating Effects of Relationship Marketing Orientation (RMO) on the Antecedents of International Joint Venture (IJV) Performance in Thailand.* Proceeding of Australian & New Zealand Marketing Conference (ANZMAC): Sustainable Management & Marketing Conference, 30 Nov–2 Dec 2009.

Wadeecharoen, W., & Nik, Mat, N. K. (2010). The Applicable of Relational Marketing Orientation (RMO) to Explain IJV Performance in Thailand. *Proceeding of International Conference on Business and Economics Research (ICBER 2010), Malaysia Conference*, *Sponsored and publication by Thomson ISI,* 26-28 Nov 2010.

Wadeecharoen, W., & Nik, Mat, N. K. (2010). *The Direct and Indirect Determinants of SME Performence in IJV Sector.* The SMEs in a Global Economy Conferences, Sponsored by Faculty of Business Management, (UiTM), Malaysia, Japan (University of Senshu) and China (Beijing Information, Science and Technology University), 15-17 Oct 2010.

Wadeecharoen, W., & Nik, Mat, N. K. (2011). *The Significance Role of Relational Factors and the Intervening Effect of Relationship Marketing Orientation (RMO) toward inter-partner relationship: Case Study of International Joint Venture (IJV) Performance in Thailand.* Proceeding of National Conference on Research through Sustainable Development, Benjamit National Conference, 31 May, 2011 Thonburi University, BKK Thailand.

Yau, O.H.M., McFetridge, P.R., Chow, R.P.M., Lee, J.S.Y., Sin, L.Y.M., & Tse, A.C.B. (2000). Is Relationship Marketing for Everyone. *Europe Journal of Marketing.* Vol.34.No.9/10,p.1111-1127.

The Relationship of Employee Knowledge, Employee Creativity and Employee Performance: An Empirical Investigation of Hotel Industry in Thailand

Chanin Yoopetch
Mahidol University International College
999 Phutthamonthon 4 Road, Salaya, Nakhonpathom, Thailand 73170
Telephone: +66 (0) 2441 5090
E-mail:icchanin@mahidol.ac.th

The Relationship of Employee Knowledge, Employee Creativity and Employee Performance: An Empirical Investigation of Hotel Industry in Thailand

Chanin Yoopetch
Mahidol University International College, Mahidol University
999 Phutthamonthon 4 Road, Salaya, Nakhonpathom, Thailand 73170
E-mail:icchanin@mahidol.ac.th

Abstract

The purpose of the study was to explore and investigate the relationships among employee knowledge, employee creativity and employee performance in the context of hotel industry. A survey was conducted using structural equation modeling method with the data collected from 461 hotel employees of several hotels. The results indicated that both employee knowledge and employee creativity had significantly positive association with employee performance. The implications of the study and directions for further research were also discussed in more details.

Introduction

In the knowledge economy, the development of many parts of the economy is on learning and creativity. Driven by competitions and the pursuit of business growth, companies are striving for new knowledge, assets, and novel competitive advantages in order to outperform their business rivals.

Hotel industry of Thailand is one of the most important sectors to the Thai economy. The relationship between tourism and hospitality is highly positively correlated. When the tourism industry expands, the number of customers of companies in hospitality increase, however, in the times of poor economic difficulty and political instability, hotels and others contribute as the main driver of the service industry. All organizations rely heavily on the employee productivity and performance. It is very important for companies to seek for the way to improve employee performance.

One of the areas that only few researchers conducted is the area of employee creativity (Wong and Ladkin, 2008). Employee creativity is affected by many motivators (employee benefits) such as intrinsic and extrinsic motivators. Moreover, employee creativity is the basic core competency for new product and service development. The importance of new product and service development in hospitality industry is significantly well-aware by many top managers in hotels and airliners. Therefore, to enhance and improve the level of employee creativity for the hospitality firms, managers can deliver higher quality product and services in the future. This can result in gaining more market shares and maintaining growth in their businesses.

The relationship among employee creativity, employee knowledge, and employee performance were investigated and analyzed. The findings of this study demonstrated clearer relationships among these factors. The author used statistical techniques, including descriptive statistics and structural equation modeling. The quantitative techniques can help testing the existence, the strengths, and the direction of the relationships of all factors of study.

The hotel industry is the service based industry where people play crucial roles in delivering satisfactions of customers. While hospitality industry evolves, there are many changes occurring in the environment, including the new trend of customer behaviors, new demand for better products and services, and new ways of using and providing services. Therefore, employees in the hospitality industry need to be well-aware of such changes.

Research Objectives

Specifically, two research objectives are as follows:

1. To study the employee creativity, employee knowledge and employee performance in the hotel industry
2. To identify factors affecting the employee performance in the hospitality industry

Literature Review

Hotel Industry Background

Tourism and hotel industries are highly important to not only hospitality industry but also to Thai overall economy. Tourism industry has played significant role to the kingdom's economy and the hotel industry grows along with increasing number of visitors from around the world. According to Business Monitor International (2011), Thailand is known to tourists as the destination for an exotic, natural, friendly and exciting place with important infrastructure including a great number of five-star hotels, fine dining restaurants and the famous Thai spas. Since 1990s, Thailand has liberalized the regulations on hotel industry and allowed more foreign investments in the industry, leading to the fast growing number of hotels around the country, including major tourism destination cities such as Bangkok, Chiang Mai and Phuket. In addition, the competition in the hotel industry has increased the demand for more effective and efficient performance of their employees.

Employee Creativity

The importance of employee creativity has been emphasized in several research studies in wide variety of organizations (Dewett, 2004, Woodman et al., 1993). Creativity can be source of new ideas and knowledge. Past research studies showed that employee creativity highly contributes to the strengths of the organization in terms of innovation and effectiveness (Shalley et al., 2004). For the definition of creativity, it means the construction of new and valuable ideas offered by one person or a group of persons or employees (Madjar et al., 2002). In addition, in order to have creativity, organizations, especially top managements can involve in providing supports and encouraging their employees to be creative since they have all resources and incentives to help employees to become more creative in the workplace (Shalley and Gilson, 2004).

Moreover, in the perspective of employee creativity and employee performance or outcome (Janssen et al., 2004), employee creativity plays important roles in the level of individual outcomes or performance in their works. In addition, creativity of employee can also lead to career satisfaction of each employee. In the aspects of new comers of the organizations, employee creativity can help these new employees to cope effectively with the new working environment and help them focus on their work goals much faster. Furthermore, employee creativity can help improve job satisfaction because these employees can find the new ways of managing things (Zhou and George, 2001).

Employee Knowledge

In order to performance any task successfully, one must acquire sufficient knowledge of relevant tasks in order to undertake the activities needed to finish the tasks. Knowledge is known as one of the valuable intangible assets in the organizations. Learning organizations are those where all employees routinely acquire, create and share knowledge among members of the organizations(Senge, 1990). Therefore, knowledge of employees is one of the key factors to build up the core competency to achieve their goals.

Employee Performance

The results of the assigned tasks can represent the performance of each employee. There are still many dimensions to evaluate the performance of each employee. Both quantitative and qualitative methods may be applied to measure the employee performance. Employee performance can be categorized into three dimensions, including Employee In-Role Performance (EIRP), Employee Extra-Role Performance toward Customers (ERPC), and Employee Extra-Role Performance Toward the Organizations (ERPO) (Maxham III et al., 2008). This perspective fits significantly well with the hospitality organizations where the expectation of customers can be endless and often employees have to performance more than just in their job descriptions to meet the expectations of customers and finally deliver customer satisfaction.

Research Methodology

To study constructs in the areas of employee creativity, the main approach widely applied is cross-sectional method (Dewett, 2004). The method is adopted and used in this current study. The strength of quantitative method is to help testing the relationships and identifying the strengths and directions of relationships among factors. The author applied statistical technique that is Structural Equation Modeling (SEM).

Data Collection

In this study, the author collected data from hotel employees in three major cities for tourism in Thailand, including Bangkok, Chiang Mai and Phuket. The data was collected from 461employees from hotel industry. All data collection was completed with no missing values. The period of collecting data was three months.

Results

In this part, the author provided the results of descriptive statistics of the samples, reliability analysis and the model testing. The details of demographic factors of hotel employees were shown in the table below.

Table 1: Descriptive Statistics of the Respondents (N= 461)

Demographic factors	Percent
Sex	
Male	35
Female	65
Age	
18-30	37
31-40	40
41-50	18
>50	5
Education	
High school	30
Bachelor's degree	58
Master's degree or higher	12
Positions	
Top management	2
Middle level management	9
Operation staff	89

The author conducted the reliability analysis and found that all factors met the acceptable reliability with Cronbach's alpha greater than .8.

Table 2: Reliability Analysis (n=461)

Factor	Cronbach's alpha	Number of items
Employee creativity	.935	10
Employee performance	.886	6
Employee knowledge	.910	9

Prior to testing the proposed model, the author performed the tests of validity of the data to ensure that the data collected were proper to structural equation modeling technique. Therefore, the author of this study reported the fit indices, as follows: CFI, RMSEA, NFI and NNFI in order to indicate the model fit.

Table 3: Measures of the Structural Model Fit

Items	Criteria
Comparative Fit Index (CFI)	>0.90
Normed Fit Index (NFI)	>0.90
Non-Normed Fit Index (NNFI)	>0.90
Root Mean Square Error of Approximation (RMSEA)	<0.08

Source: Hair et al.(2006), Hu and Bentler (1999)

According to Hair et al. (2006), convergent validity means the ability of some measures to have convergent validity when they are highly correlated with different measures of similar constructs. Anderson and Gerbing (1988) suggested that good convergent validity exists when standardized factor loadings of each item exceeded .40 (Lin and Germain, 2003) and all t-values were higher than the significant level (i.e. t-value is higher than 2). With acceptable fit indices, the model had CFI of .983, NFI of .974 and NNFI of .981 and RMSEA of .062. The standardized factor loadings of all items were higher than .40. The lowest factor loading was .698 and the highest was .816, indicating that all the constructs meet the criteria of acceptable convergent validity.

To measure that a construct is truly distinct from another construct, discriminant validity is used to provide evidence that a construct is unique from the other.

Table 4: Discriminant Validity Assessment

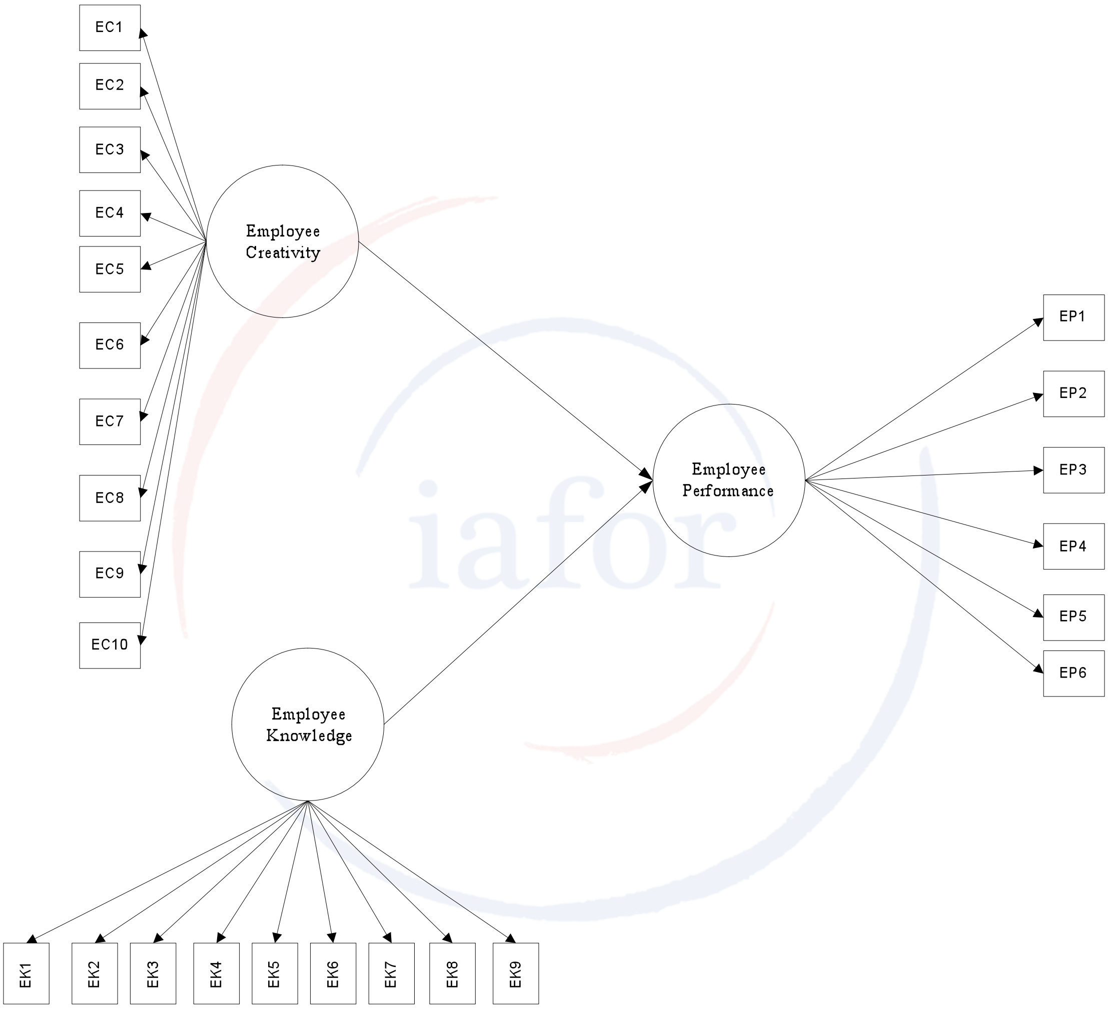
Average of Variance Extracted		Squared Correlations between Constructs	
Employee knowledge	0.543	Employee knowledge and Employee creativity	0.475
Employee creativity	0.593	Employee knowledge and Employee performance	0.487
Employee performance	0.572	Employee creativity and Employee performance	0.484

All the constructs had average of variance extracted higher than the squared correlation between all the two constructs, indicating sufficient discriminant validity for all the constructs (Fornell and Larcker (1981)).

Research hypotheses

There are two main research hypotheses as follows.
H1: There is a relationship between employee creativity and employee performance
H2: There is a relationship between employee knowledge and employee performance

Figure 1: The proposed Model



The results of the model testing provided that both employee creativity and employee knowledge had positive influence on employee performance. In addition, employee creativity had the higher influence towards the employee performance.

Table 5: The Results of Proposed Model

Items	Fit Indices	Criteria
Comparative Fit Index (CFI)	.976	>0.90
Normed Fit Index (NFI)	.967	>0.90
Non-Normed Fit Index	.974	>0.90
Root Mean Square Error of Approximation (RMSEA)	.073	<0.08

Table 6: The Relation of Parameters and Parameter Estimates of Proposed Model

The Relation of Parameters	Standardized Estimates
Employee Knowledge→ Employee Performance	.380* (8.586)
Employee Creativity → Employee Performance	.598* (10.473)

* indicated statistical significance at .05 and t-values are shown in parentheses.

The results showed that both employee creativity and employee knowledge had significantly positive influence on employee performance. In addition, the standardized estimates indicated that employee creativity had higher positive influence on employee performance.

Discussion

The findings indicated the relationship among employee creativity, employee knowledge and employee performance. For the relationship between employee creativity and employee performance, several past studies had confirmed the relationship of both factors. Yang and Choi (2009) implied that creativity of employee can lead to the improvement of performance of employee in the team context and can enhance the performance of the organization. Moreover, Gong, Huang and Farh (2009) also found that employee creativity has positive relationship with employee performance measured by the perception of supervisors and measured by sales volumes generated by each employee.

This study has also shown the significant relationship between employee knowledge and employee performance, supported by a number of other researchers as well. For the relationship between employee knowledge and employee performance, Motowidloa and Beiera (2010) showed that both specific and general employee knowledge about their jobs can affect the performance of the employees.
Additionally, another research finding provided that the process of knowledge generation of employee, including knowledge sharing among their colleagues, provided positive influence on the performance (Basagliaa et al. (2010)).

Conclusions and Directions for further Research

This study had achieved its objectives in that the author found the significant relationship between employee knowledge and employee creativity on employee performance. In addition, the results indicated that employee creativity has higher positive influence than employee knowledge on the performance of employee. There are few limitations of this research. First, it was cross-sectional investigation and cannot be used to explain the trend of these factors. Second, the authors selected three major tourism destination cities to explore these constructs and the degree of generalization may be limited.

For future research in this area, creativity is known to be the complex concept and there are much more dimensions to be explored (Woodman et al., 1993). More research studies should focus more on the relationship between employee learning, employee benefits and employee creativity as well as their effects on employee performance.

REFERENCES

ALLEN, N. J. AND GRISAFFE, D. B. (2001) Employee Commitment to the Organization and Customer Reactions: Mapping the Linkages. *Human Resource Management Review*, 11(3), 209-236.

ANDERSON, J. C. & GERBING, D. W. (1988) Structural Equation Modeling in Practice: A Review and Recommended Two-Step Approach. *Psychological Bulletin*, 103(3):411-423.

BASAGLIAA, S., CAPORARELLOB, L., MAGNIB, M., & PENNAROLAB, F. (2010), IT Knowledge Integration Capability and Team Performance: The Role of Team Climate. *International Journal of Information Management*, 30(6), 542-551.

BRAYFIELD, A. H. AND CROCKETT, W. H. (1955) Employee Attitudes and Employee Performance. *Psychological Bulletin*, 52(5), 396-424.

BUSINESS MONITOR INTERNATIONAL (2011), Market Overview – Hospitality: Quarter 4: 2011. *Thailand Tourism Report*, 1, 22-26.

CHIANG, C.F. & JANG, S. (2008) An Expectancy Theory Model for Hotel Employee Motivation. *International Journal of Hospitality Management*, 27(2), 313-322.

DEWETT, T. (2004) Employee Creativity and the Role of Risk. *European Journal of Innovation Management,* 7**,** 257-266.

DULEBOHN, J. H., MOLLOY, J. C., PICHLER, S.M., & MURRAY, B. (2009), Employee Benefits: Literature Review and Emerging Issues. *Human Resource Management Review*, 19(2), 86-103.

FORNELL, C., & LARCKER, D. (1981). Evaluating Structural Equation Models with Unobservable Variable and Measurement Error. *Journal of Marketing Research*, 18, 39-50.

GONG, Y., HUANG, J., AND FARH, J.(2009), Employee Learning Orientation, Transformational Leadership and Employee Creativity: The Mediating Role of Employee Creative Self-Efficacy. *Academy of Management Journal*, 52(4), 765-778.

HAIR, J. F., BLACK, W. C., BABIN, B. J., ANDERSON, R. E., & TATHAM, R. L. (2006), *Multivariate Data Analysis*, Sixth Edition, Prentice Hall.

HU, L. & BENTLER, P. M. (1999), Cutoff Criteria for Fit Indexes in Covariance Structure Analysis: Conventional Criteria versus New Alternatives. *Structural Equation Modeling: A Multidisciplinary Journal,* 6(1), 1-55.

JANSSEN, O., VAN DE VLIERT, E. & WEST, M. (2004) The Bright and Dark Sides of Individual and Group Innovation: A Special Issue Introduction. *Journal of Organizational Behavior,* 25**,** 129-145.

LEMA, J. D. & AGRUSA, J. (2009) Relationship of WWW Usage and Employee Learning in the Casino Industry. *International Journal of Hospitality Management*, **28**(1), 18-25.

LIN, X. & GERMAIN, R. (2003) Product Quality Orientation and Its Performance Implications in Chinese State-Owned Enterprises. *Journal of International Marketing,*11(2),59–78.

MADJAR, N., OLDHAM, G. R. & PRATT, M. G. (2002) There's No Place Like Home? The Contributions of Work and Nonwork Creativity Support to Employees' Creative Performance. *Academy of Management Journal,* 45**,** 757-767.

MAXHAM III, J. G., NETEMEYER, R. G. & LICHTENSTEIN, D. R. (2008) The Retail Value Chain: Linking Employee Perceptions to Employee Performance, Customer Evaluations, and Store Performance. *Marketing Science,* 27(2), 147-167.

MOTOWIDLOA, S. J. & BEIERA, M.E. (2010), Differentiating Specific Job Knowledge from Implicit Trait Policies in Procedural Knowledge Measured by a Situational Judgment Test. *Journal of Applied Psychology*, 95(2), 321-333.

SENGE, P. (1990) *The Fifth Discipline* New York, Doubleday Dell Publishing Group.

SHALLEY, C. E. & GILSON, L. L. (2004) What Leaders Need to Know: A Review of Social and Contextual Factors that Can Foster or Hinder Creativity. *The Leadership Quarterly,* 15**,** 33-53.

SHALLEY, C. E., ZHOU, J. & OLDHAM, G. R. (2004) The Effects of Personal and Contextual Characteristics on Creativity: Where Should We Go from Here? *Journal of Management,* 30**,** 933-958.

WEST, M. A., NEIL, J. S. & PAUL, B. B. (2001) Creativity and Innovation in Organizations, Management of. *International Encyclopedia of the Social & Behavioral Sciences.* Oxford, Pergamon.

WONG, S. C.-K. & LADKIN, A. (2008) Exploring the Relationship between Employee Creativity and Job-Related Motivators in the Hong Kong Hotel Industry. *International Journal of Hospitality Management,* 27**,** 426-437.

WOODMAN, R. W., SAWYER, J. E. & GRIFFIN, R. W. (1993) Toward a Theory of Organizational Creativity. *Academy of Management Review,* 18**,** 293-321.

YANG, S.B. & CHOI, S. O. (2009) Employee Empowerment and Team Performance: Autonomy, Responsibility, Information, and Creativity. *Team Performance Management*, 15(5/6), 289 – 301.

ZHOU, J. & GEORGE, J. M. (2001) When Job Dissatisfaction Leads to Creativity: Encouraging the Expression of Voice. *Academy of Management Journal,* 44**,** 682-696.

A Longitudinal Study of the Extent to which the Human Resource Practices of American Affiliated Firms Operating in Japan have Conformed to Local Conditions.

Anthony Carver
Sheffield University
anthonycarver@yahoo.co.uk

Abstract:

Does time help foreign companies to adapt to local conditions? Firms from outside have been doing business in Japan for more than 100 years. Does this experience mean that they have become progressively more "Japanese" in their practices? Alternatively, have foreign firms acted as change agents to make Japanese firms more international?

This paper reveals the results of a longitudinal study of the human resource practices of American affiliated firms in Japan. The hypothesis to be tested by this paper is that the human resource practices of American firms in Japan, particularly in relation to recruitment and decision making, in 2010 remain, on the whole, fundamentally unchanged compared with those of 20 years ago.

The theory driving this hypothesis comes from 2 sources. Firstly, recent research from Markus Pudelko (2010) suggested US firms in Japan show comparatively " little, or better no need to adapt to local practices". Secondly, a survey of American affiliated firms in Japan demonstrated no significant change in HR management style over length of business history in Japan (TPF&C, 1991).

Keywords: Japan, American affiliated companies, employment, human resource management, longitudinal research

Hypothesis Theory

As multinational corporations open offices in different countries there is often said to be a tension between globalization and localization. This is sometimes also portrayed as convergence to a single global model or divergence toward local norms. The desire to converge to a global standard, by using best practices[1] throughout one company operating in many countries may be brought about by pressure to reduce costs (Pudelko, 2007, 536). In this way employment policy can be seen as being driven by the self-interests of the employer. It seems natural to also argue that employees also have self-interest. For example, maximizing their salaries whilst reducing their workloads. The employment model of American affiliated companies in Japan, seen from this point of view, would be a result of negotiation between the self-interest of employers, in this case American affiliated companies, and the self-interest of the employee, members of the Japanese labour force. This might be labelled as agency theory. Agency theory, however, has been criticized by some for being too simplistic and for not placing enough importance on the influence of culture (Brown and Droege, 2004, 326).

For the purpose of broadly studying the conformity or non-conformity of the employment models of American affiliated companies and the employment model that is generally common in Japanese companies in Japan, it might be more useful to examine the theory of embeddedness.

Granovetter (1985, 481-482) explains embeddedness as; "the argument that the behaviour and institutions to be analysed are so constrained by on-going social relations that to construe them as independent is a grievous misunderstanding." Keizer (2010, 17) goes further and applies embeddedness to the Japanese employment model. He explains that "the continued and cumulative support (of the Japanese employment model) has strengthened the normative implications," (Keizer,2010,17). Embeddedness contributes to the norms of behaviour and becomes self-reinforcing. In other words, quantity of behaviour is significant. The fact that the majority of people experience a particular model of employment means that this will build expectations that the model they experience is the norm. From Pudelko's (2010, 160) perspective specific factors such as seniority pay are embedded at the centre of layers of norms, the outer layer

[1] Examples of this include BASF, which had allowed its Japanese operations to run comparatively autonomously. In 1999, however, they established a "Fit for the Future" program that has 6 core values and principles that are "mandatory for all the group's companies and employees throughout the world" (Yamao and Falk, 2006, 158). In addition, before 1996, American Express had applied personnel policies that were unique to each country. After reducing its workforce by 40,000, however, it has used "competency" as its global concept "and placed it at the foundation of its overall personnel system" (Japan Institute for Labour Policy and Training, 2002, 2). Another aspect of globalization that may affect personnel decision making is that companies such as BASF and Proctor and Gamble have established Asian regional headquarters, typically in Hong Kong or Singapore. This new headquarters usually exert power over country headquarters in matters of personnel policy.

being cultural factors.

In order to be competitive, American affiliated companies in Japan are unlikely to staff themselves wholly through using comparatively expensive expatriate employees. They will probably, therefore, attempt to recruit local Japanese staff. The employment models of American affiliated companies tend to be different from the Japanese employment model. Japanese staff are likely to be influenced by the Japanese employment model when they make their employment choices.

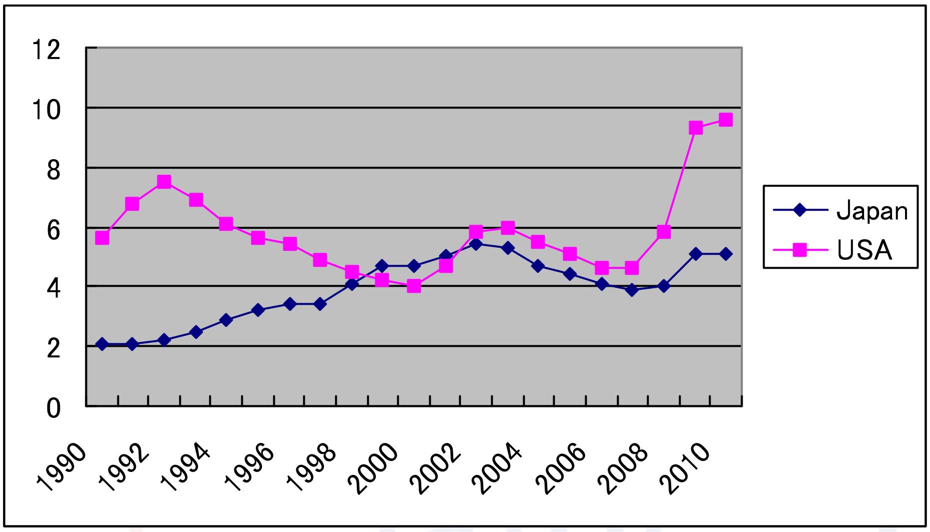
The theory of embeddedness seems to be an appropriate fit for studying American affiliated companies in Japan for two reasons. Firstly, it acknowledges the influence of culture. America and Japan are generally perceived as being culturally different. Japan differs significantly from America in 3 of Hofstede's 5 cultural dimensions[2], individualism (the degree to which individuals integrate into groups), uncertainty avoidance index (the degree to which members of a society uncomfortable in unstructured situations) and long-term orientation (the importance attached to the future versus the past and present). These cultural differences could be said to result in the American model being generally more market responsive than the Japanese model. Jacoby (2005) recognizes the diversity within the general view and illustrates the models as two overlapping bell curves with the Japanese system skewed more toward organization and the American employment system toward market. One demonstration of this may be trends in unemployment in both countries. The number of people unemployed, but actively seeking work in Japan rose from 2.1% in 1990 to a peak of 5.4% in 2002 and stood at 5.1% in 2010. Japan has now had more than a decade of experience of unemployment around the 5% mark. This might be an indicator of long-term change for the Japanese employment model. To move toward a more flexible, market driven model of employment it may be useful to have a pool of surplus workers to draw from. However, the fact that the rate has remained within a 1.5% band for now 13 years indicates a new kind of stability. In contrast, the United States figure has been much more market responsive and has fluctuated a great deal more over the two decades. Tellingly, it almost doubled in the 3 years going forward from the global recession of 2007, whereas Japan's figures increased by less than a third. This seems to be evidence that indicates that the Japanese employment model remains less market

[2] Hofstede's cultural dimensions originate from his work surveying the values of the employees of IBM in 70 countries between 1967 and 1973. They include the 3 mentioned, plus power distance index and masculinity, both Japan and America score similarly for these.

responsive than the American one.

Japan and USA unemployment rates 1990-2010

Sources: US: Bureau of Labor Statistics, 2011, Japan: Ministry of Internal Affairs and Communication, 2011.[3]



Secondly, it places importance on quantity of behaviour. Employees who work for American affiliated companies in Japan represent a small fraction of the Japanese workforce as a whole. Although there are no exact figures, Ballon (1992, 28), extrapolating from government agency labour surveys, estimated it to be around 300,000 or less than 1% of all Japanese workers at the beginning of the 1990s. Abbeglen (2006, 152) calculates foreign presence in a larger number of companies, but does not hazard a guess at a number of workers.[4] The latest figures from a 2010

[3] US figures include for the civilian labour force over 16 excluding the armed services, Japan figures for population of 15 years or more including the armed forces.

[4] Ballon appears to make a rough calculation by doubling the figures for foreign affiliated companies with at least 50% foreign ownership who participated in a Ministry of Labor survey (990 companies and 144,334 employees). His 300,000 figure seems, therefore, to be an assumption that there are as many companies again who did not bother to participate in the survey. Abegglen reports 3383 foreign affiliated companies, but this figure includes companies whose foreign ownership is as little as 20%. Schutte (2006, 262) hints at a larger figure of less than 2.5% of the Japanese workforce, but doesn't expand on how this figure is arrived at.

directory of foreign affiliated companies reports 3,099 foreign affiliates in Japan. Of these, 1,239 or 40% were American in origin. There are no exact aggregated figures for number of employees of foreign affiliates, but the directory reports that 705 firms had less than 10 employees, 1292 less than 100 employees, 623 had less than 1,000 employees and 106 had more than 1,000. 373 firms did not provide any data about employee numbers (Toyo Keizai, 2010, 154-157). Elsewhere in the directory, figures are given for individual companies, but the few very large employers (over 10,000) are of Japanese origin. For example Suzuki, which has 14,405 employees, is listed as a foreign affiliated company because it has 19.8 % of German capital from Volkswagen. Other than this, large foreign affiliates have employee numbers in the low thousands (Toyo Keizai, 2010, 160-164).

Using a conservative average of 3,000 employees for these firms and taking a mid point figure for smaller firms, I roughly estimate that the number of employees that work for foreign affiliates in Japan is about around 800,000 with perhaps a little more than 300,000 of these working for firms of American origin.[5] The current Japanese labour force is reported to be 65,130,000 (Ministry of Internal Affairs and Communication, 2011). This would mean that approximately 1.2% of the labour force is employed by foreign affiliates and just 0.5% by American affiliates.

This figure seems reflective of Japan's lack of foreign direct investment. As a percentage of GDP, direct investment flows inward stood at 0.5 %, rating Japan 51st out of 57 countries surveyed in 2008 (IMD, 2009, 321).

The hypothesis that this paper suggests is a lack of relative adaptability. It is this non-adaptability that causes the non-conformity to Japanese employment models. Here the USA affiliated firm is embedded so strongly in the American employment model that it does not adapt when it operates in Japan. In 2010, Pudelko surveyed 4 groups of companies; 66 American companies operating in the USA, 68 Japanese companies operating in Japan, 35 American companies operating in Japan and 207 Japanese

[5] My calculation is as follows: 705 less than 10 employee companies multiplied by a mid point of 5 employees, 1292 less than 100 employee companies multiplied by 50, 623 between 100 and 1,000-employee companies multiplied by 500 and 106 large employers multiplied by 3,000 produces total of 697,625 employees or a mean of 255.91 employees per company. I multiplied this figure by the 373 companies who did not report employee numbers and added the total to those who did report. This produces a final total of 793,081 employees. American companies represent 40% of all affiliates and so I applied this to the total to arrive at 317,232 employees of American affiliate companies in Japan.

companies operating in America. He asked them to rate their own pay practices on a 6 point scale from 1, high pay for seniority, to 6, high pay for performance.

Assessment of compensation criteria of American and Japanese companies.
Source: Pudelko, 2010, 166-168.

Firm	Mean	Firm	Mean
American in USA	2.26	American in Japan	2.26
Japanese in Japan	3.04	Japanese in USA	2.52

The results show that although Japanese companies had somewhat adapted to a performance based pay structure in America, the American companies in Japan had appeared to demonstrated zero adaptability toward a seniority pay model. Strengthening this theory of non-adaptability is a survey of 204 American affiliated firms carried out on behalf of the ACCJ in 1990. In this survey, firms were asked to rate their HR management style on a 5-point scale; from same as parent company to completely Japanese. The results were then analysed by business history in Japan.

HR Management Style of American Affiliated Companies Influenced by Parent Company by Business History in Japan.
Source: TPF&C, 1991, 21.

<5 years	6<10 years	10<20 years	20<years
48%	48%	45%	45%

The companies surveyed only seemed to demonstrate fairly modest shifts toward Japanese HR management styles even after more than 20 years of business history.

The Japanese Model Over 20 Years

In contrast to the market responsiveness of the American model, an orientation to organization tends to characterise the Japanese model. Lifetime employment, the seniority system and enterprise unions are regarded as the *sanshu no jingi* or '3 sacred treasures' of Japanese industrial relations (Nishinarita, 1998, 195). Although there have been some significant changes within each of these over the 20-year period, the accumulative effect seems to be either inconclusive or indicative of only a slight shift toward the market.

As for lifetime employment there is evidence of a significant increase in the use of market-responsive, atypical workers. The dispatch industry, for example, grew significantly in the 15-year period covering the period 1993 to 2008 from 436,336 registered workers to 2,811,987 (Japan Institute for Labour, 2004, 41 and Japan Institute for Labour, 2011, 37). However, for regular workers long-term relations between firms and labour expressed as average length of tenure have remained consistently strong. In fact, the final figures for this period showed modest increases for male (12.5 years to 13.1 years, 4.8%) and more substantial rises for female (7.3 years to 8.6 years, 17.8%) tenure (Ministry of Internal Affairs and Communication, 2010, 520-521). In addition, changes to Japanese employment law have on the one hand facilitated the rise in the use atypical workers by employers, but on the other have strengthened the individual rights of non-regular workers (Imai, 2006, Keizer, 2010, Araki, 2010).

The seniority system relates to the tendency of firms to structure remuneration based on length of tenure rather than individual performance. There seems to little evidence for change toward more merit based pay by weight remuneration in the bonus direction. Over the period, bonus payments, which are a factor of remuneration that do reflect performance (both firm and individual) have fallen. In 1990 average bonuses represented 23.3% of salaries compared to 28.6% in 1990 (The Japan Institute for Labour Policy and Training, 2011, 47).

The one factor that has exhibited a clear weakening is membership of enterprise unions. From 1990 to 2009, membership of private enterprise unions fell from 21.9% to 16.9%, and in their stronghold of large firms (more than 1000 employees) from 61 to 46.2% over the same period. (The Japan Institute for Labour Policy and Training, 2011, 71) In addition, union activity expressed as a number of disputes as fell dramatically from 2,071 in 1990 to 657 in 2008. (The Japan Institute for Labour Policy and Training, 2011, 75)

American Affiliates Over 20 years

The attempt to study how the practices of foreign affiliated firms conform or not to local conditions is not new. For example, Abo (1998), studied how successful Japanese automobile and electronic firms were in transplanting Japanese working methods in their American plants between 1989 and 1993. His wide ranging study included production processes as well as human resource issues such as job security and power of delegation. He used a 5 point scale between application (parent system) and adaptation (local system) to arrive a scientific score or "hybrid ratio" to describe how Japanese or American an office is at a point in time. Comparing two hybrid ratios from 5 years apart therefore indicates a shift in the direction toward one model.

Not having the luxury of 5 years for research for this paper, it was necessary to find some existing research that could be updated. A management consulting firm on behalf of the American Chamber of Commerce in Japan (ACCJ) carried out the 1990 data that I base my longitudinal study on.

The ACCJ has been operating in Japan since 1948. According to its website homepage, it now has more than 2,700 members, over a thousand of which are firms. The figures that are easily accessible indicate that membership has been declining steadily for the last decade (ACCJ, 2004). Its objectives are to develop trade between US and Japan, promote the interests of its members in Japan and to improve the international business environment in Japan. For a company to join the ACCJ as a commercial member, it must be established under Japanese law as either a stand-alone company, subsidiary or branch office. In fact any commercial legal entity regardless of location of headquarters or amount of Japanese capital can join. Although no details are published for the amount of Japanese capital in ACCJ member companies, in the case of 24 firms who revealed their ownership structure for the 1990 survey only 2 had less than 50% Japanese capital (TPF&C, 1991, 9).

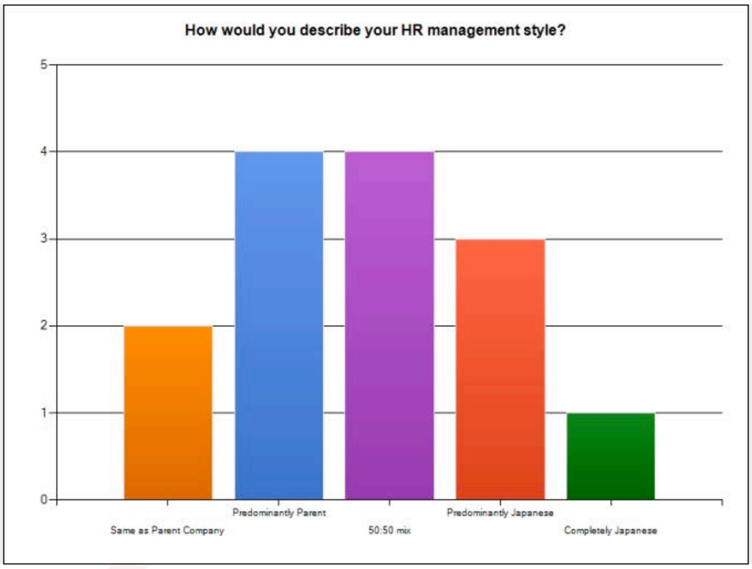
The 1990 survey was carried out in the month of October on behalf of the ACCJ Employment Practices Committee and involved a paper questionnaire sent by mail to which there were 204 respondents. This represented a response rate of 28%. The survey report runs to 46 pages and includes 6 sections on company data, employee relations, training, recruitment, personnel policies and human resource trends. The 1990 survey results are reported as percentages rather than raw numbers.

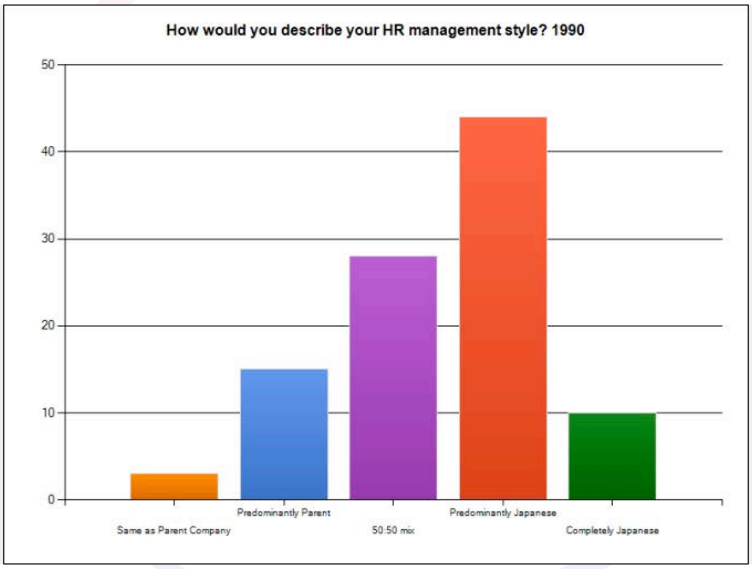
1990 was the first time for the ACCJ to undertake a survey of the personnel practices of American companies in Japan. The executive summary of the report highlights that the results refutes the “commonly reported and widely believed adverse views of foreign companies’ operations in Japan” (TPF&C, 1991, 2). The summary then goes on to list four of those negative beliefs. Firstly, that foreign affiliated companies have high labour turnover. Secondly, that they are prone to layoffs. Thirdly, that they are often involved in industrial disputes. Finally, that human resource decisions are too often made outside of Japan.

The 2010 survey was made possible through a personal contact that knew a member of the ACCJ Human Resource Committee. It was an on-line survey that replicated some, but not all of the original 1990 survey questions. This was because I feared that a surfeit of questions would dissuade potential respondents. It was constructed using *Surveymonkey*, a popular on line survey tool. Questions were limited to topics including recruitment, tenure, layoffs, number of expatriate staff, HR decision making as well as general company data in order that these topics might also be analysed by factors such as company size and type of industry. The survey link was included in two editions of the ACCJ email newsletter *ACCJ Chamber Dates* which is circulated to around 1,000 member companies. The survey remained open for 6 weeks from mid December 2010 to the end of January 2011. To encourage a higher response, those who completed the survey were offered a report summary so that they could benchmark their practices for 2010 and relative to 1990.

In total, there were 14 respondents. This represents a response rate of around 1.4%. This figure seems rather disappointing and the results, therefore, can only really suggest toward trends than provide definitive answers. The results I present focus on the most significant longitudinal differences. After this, I will briefly summarize the answers that provided no significant differences. The 2010 results are reported as raw numbers rather than percentages.

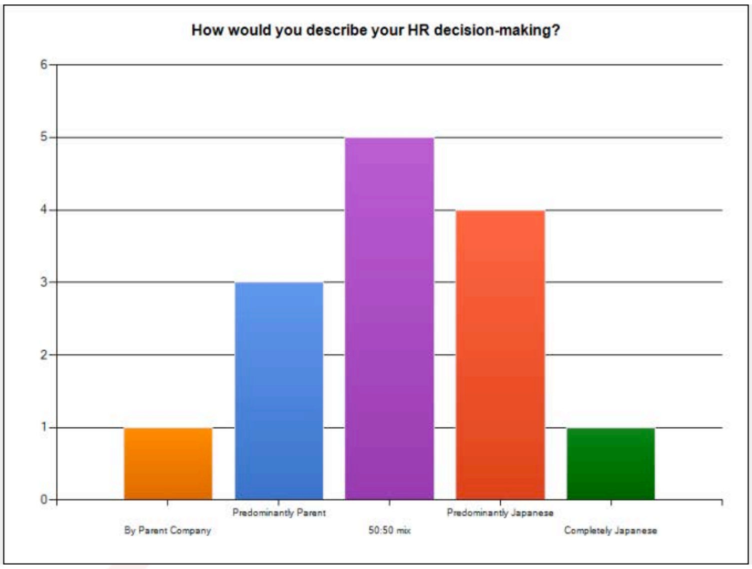
Human Resource Management (HRM) Style

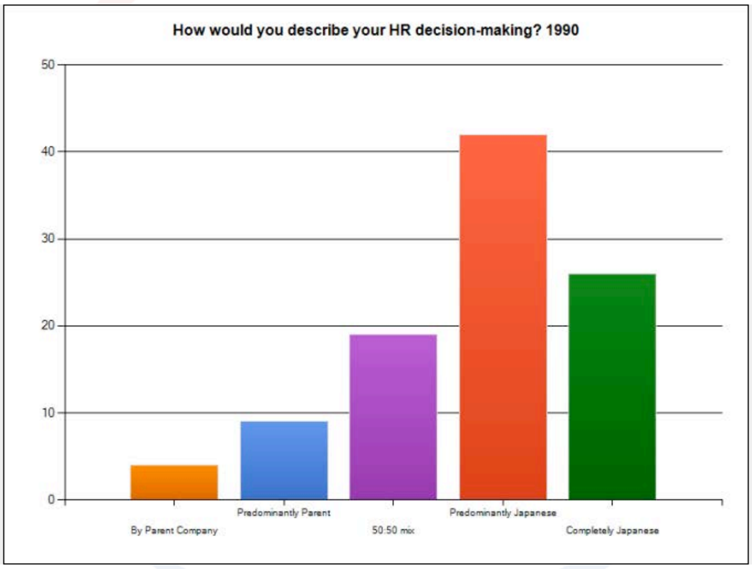




Pudelko (2006, 73) refers to a survey he carried out in the year 2000, the mid point of this paper's longitudinal study, of the human resource departments of 500 Japanese and American firms. He found that Japanese management style was a little more “top down” than “bottom up”, but not nearly as “top down” as US management style. The results for 1990 indicated a HRM style in American affiliated companies that was fairly Japanese influenced. In fact, 83% of firms reported at least 50% Japanese HRM style. The 14 companies that reported in 2010 were much more evenly mixed in their management style. This tentatively suggests that American affiliated firms in Japan have shifted toward a top down style.

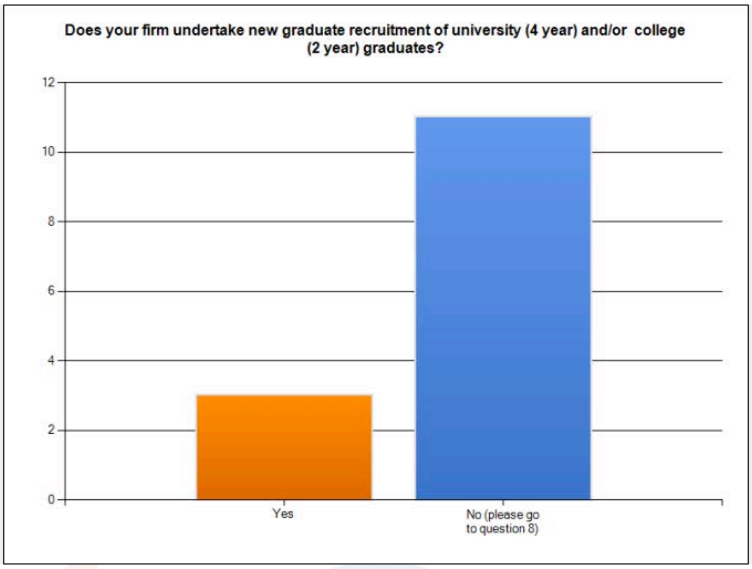
HR Decision Making

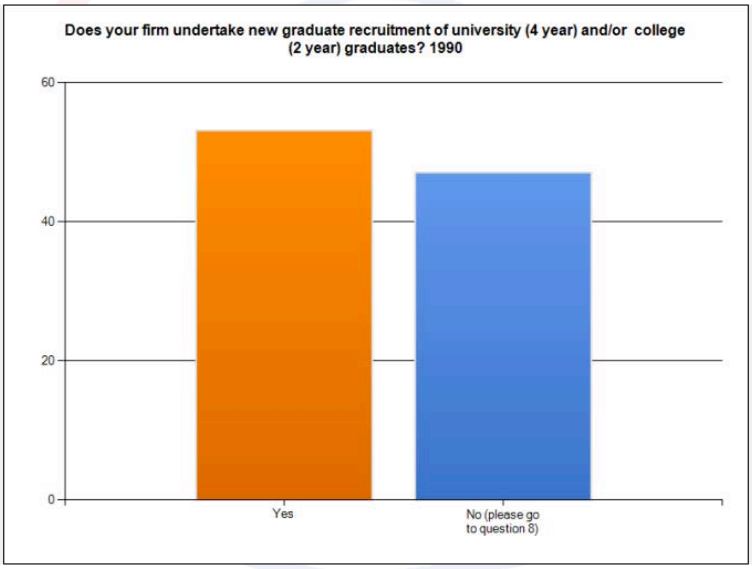




Pudelko (2006, 73) discovered a clear difference between US and Japanese decision making styles when he surveyed in 2000; American firms are generally authoritative whereas Japanese firms are usually participative in their decision making. The 1990 ACCJ survey clearly shows that at that time either predominantly or completely Japanese style decision making was common in the American affiliates who participated. The 2010 survey suggests a more even balance between American and Japanese styles. This may indicate a shift toward authoritative decision making.

New Graduate Recruitment

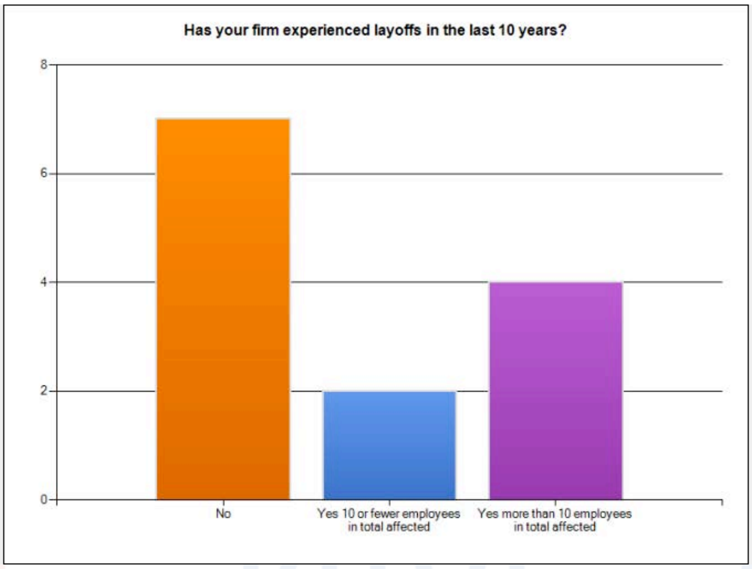


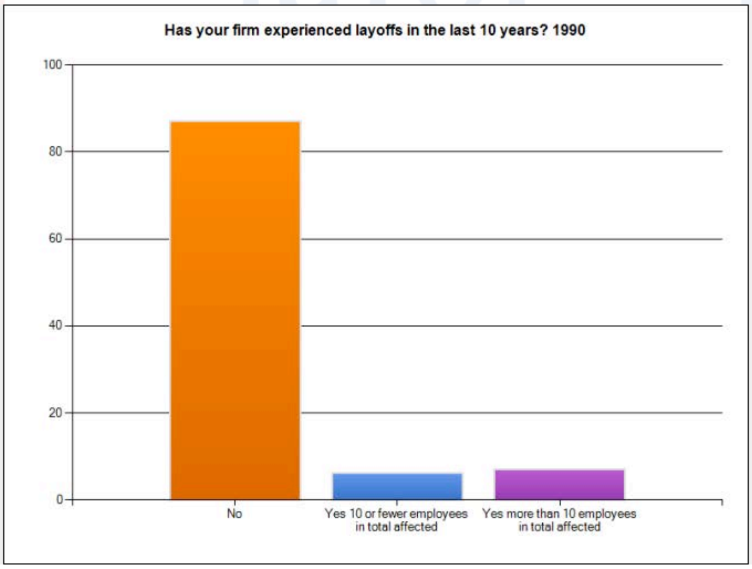


This question includes graduate recruitment for both 4-year university courses and two-year college course. In Japan two-year colleges are commonly divided into two types. Firstly, *senmongakko* which provide vocational courses in subjects as varied as tourism, computer system engineering and hairdressing. Secondly, *tankidaigaku* are colleges that often provide similar courses to four-year colleges, but in an abbreviated form. Common subjects on offer include business administration, languages and education. An emphasis on new graduate recruitment is connected to the seniority system, one of the 3 pillars of the Japanese employment system. In 1990, just over half (53%) of American companies participated in new graduate employment. In 2010, however, only 3 of 14 companies were taking part. The Japanese employment model has seen reductions in new graduate recruitment in the past 20 years (Nikkei, 2010) .

These reductions, however, usually take the form of temporary freezes or reductions in graduate recruitment by firms, not the withdrawal of the practice all together (Keizer, 2010, 37-38). The results from the 2010 survey, therefore, I would argue may indicate a lack of conformity rather than mimicking a trend in the Japanese employment model.

Laying Off Staff





An extreme reluctance to dismiss staff is indicative of the Japanese employment model and underwrites the implicit employer/employee relationship that maintains long-term relations between firms and labour. The 1990 survey was keen to highlight the result that 87% of firms had not laid off staff in a 10-year period. In 2010, although only 13 firms responded, 6 of these had experienced layoffs; in the case of 4 firms the layoffs affected 10 or more employees.

Other Results

The results for labour turnover, mid-career recruitment and business sector were inconclusive in terms of any detecting any shift toward an American or Japanese model. The figures for average tenure were similarly lacking in significance, although it is interesting to note that the 1990 figures, which used a much larger sample of course, seemed to demonstrate an average turnover near the 7.4 year mean for American firms in the USA that Matanle has (2006, 64) reported on. The figures for age of employees demonstrated slight rises, but these rises were consistent with rises in the average age of employees within the Japanese employment model. Finally, the business history of the participant firms had risen. None of the firms who took part in the 2010 survey had been in business for less than 5 years, whereas in the 1990 survey 14% had.

Directory of Foreign Affiliated Companies

In addition to my own research, it is also useful to look at some of the longitudinal differences in published data. The *gaishikei gigyo soran* is a directory of foreign affiliated businesses. It is published by *toyo keizai* which is a well known publiher of business related magazines, journals and directories. The *gaishikei gigyo soran* appears to have been published annually since 2000. I was able to access 5 data sets from 2002 to 2010.

Foreign Affiliated Firms in Japan 2002-2010

	2002	2004	2006	2008	2010	Difference 2002-2010	Percentage Change 2002-2010	Difference 2006-2008	Percentage Change 2006-2008
Total Number of Firms	3250	3380	3500	3311	3099	-151	-5%	-189	-5%
Firms Reporting Sales of more than 10 yen	453	483	438	408	337	-116	-26%	-30	-7%

Firms reporting more than 1000 employees	106	128	120	55	106	0	0%	-65	-54%
Firms reporting more than 100 employees	763	875	850	306	729	-34	-4%	-544	-64%
Firms reporting to be from America	1564	1562	1554	1443	1239	-325	-21%	-111	-7%

Sources: Toyo Keizai 2002, 2004,2006, 2008, 2010.

If the data sets from 2010 are compared with those from 2002, a slight trend emerges of a weakening of the position of foreign affiliated companies in Japan. The total number of all foreign affiliates has reduced by 5%, and more markedly by 21% for American companies.[6] Along with the previously mentioned steady fall in ACCJ membership, this may point toward a reduction in American business in Japan. Unfortunately, the directory does not break down figures for sales and number of employees by country of origin, so the results that follow are reflective of all foreign affiliated companies. The number of firms reporting large sales fell by 26%. However, by comparing these two data sets, this decline did not unduly affect employment with just a small decline in firms who employ more than 100 employees and no decline in firms that employ more than 1000. This seems to support the hypothesis that foreign affiliated companies perhaps are conforming with the Japanese employment model. They are broadly maintaining employee numbers, even in reduced economic circumstances.

However, if the data sets for the intervening years are added, an extremely different picture appears to emerge. In 2007, there was a global recession. The beginning of the

[6] During this period, 2002-2010, there was a rise in affiliates from a few counties. The most significant of these were Korea, which increased its number of affiliates from 86 to 161, a rise of 87% and Germany, which rose from 335 to 392. Surprisingly, the number of affiliates from Belgium (23 to 33) rose more than those from China (61 to 68).

recession in Japanese is frequently referred to as the *reemanshoku* "Leehman (Brothers) shock". In Japan, the cause of the recession is often attributed to the *subupuraimumondai* "subprime (mortgage) problem". The data sets for the years 2006 and 2008 show some seemingly incredible differences in employment. Firms that employed more than 1,000 people fell from 120 to 65; a drop of 54%. The figures were even more pronounced for the larger group of firms that employed over 100. This group fell by 64% from 850 to 306 firms. In other words, 544 firms either dismissed workers to shrink below the 100 employee figure, withdrew from Japan or went bankrupt. These dramatic changes happened within a two-year period, and definitely do not seem to be typical of Japanese employment models. Comparing the data sets for 2008 and 2010, the firms that employ more than 100 people increase greatly in number, but not quite to 2006 levels.

Conclusion And Future Research Areas

Although Japanese firms have may moved slightly toward a more market influenced employment model, there seems to be stronger evidence that American affiliated companies in Japan have become much more market responsive. The fact that American affiliated firms seem not to have needed to adapt to the Japanese employment could be because there are local based workers who have the skills that American affiliated firms require. The norms of employment are embedded within a wider culture. Although the cultural dimensions of comparative low individualism, high uncertainty avoidance and long-term orientation are typical of Japanese, American affiliated companies in Japan employ less than half a percent of the workforce. There appears there may be enough diversity of personalty among a work force of more than 60 million people to supply this niche market.

For further research, it would seem to be worthwhile surveying the attitudes of Japanese employees of American affiliated companies to find out, for example, if they had made a positive choice to join an American affiliated company, whether the fact that it was an American affiliated company had no effect on their employment decision or if they had joined a foreign affiliated company for a negative reason; disillusionment or lack of opportunity with the Japanese employment model.

In addition, more focused surveying of specific groups such as elite university students, students who had spent more than 12 months living overseas compared with those who have not and surveying by gender may produce interesting results.

With regard to the future, if the number of American affiliated companies in Japan continues to decline and affiliated companies from Asian countries become more numerous, there could be possibilities to survey how attitudes toward American and Asian affiliated companies differ.

References

Abegglen, James C. (1958) *21st The Japanese Factory* Free Press. Glencoe: Free Press.

Abegglen, James C. and Stalk, George (1985) *Kaisha: The Japanese Corporation.* New York: Basic Books, Inc.

Abegglen, James C. (2006) *21st Century Japanese Management: New Systems, Lasting Values* Houndmills: Palgrave Macmillan.

Abo, Tetsuo (1998) Changes in Japanese Automobile and Electronic Transplants in the USA in Hasagawa, Harukiyo and Hook, Glen D. (eds) *Japanese Business Management: Restructuring for Low Growth and Globalization* London: Routelege.

American Chamber of Commerce in Japan (2004) *2004 Annual Report* available at http://www.accj.or.jp/user/302/annrep2004/ [24 March 2011].

Araki, Takashi (2000) "A Comparative Analysis: Corporate Governance and Labour and Employment Relations in Japan." *Comparative Labour Law and Policy Journal*, 22: 101-125.

Araki, Takashi (2009) Changes in Japan's Practice-Dependent Stakeholder Model and Employee-Centered Corporaye Governance, 222-253, in Whittaker and Deakin (eds) *Corporate Governance and Managerial Reform in Japan.* Oxford: Oxford University Press.

Ballon, Robert J. (1992) *Foreign Competition in Japan: Human Resource Strategies.* London: Routeledge.

Brown et al. (1997) *Work and Pay in the US and Japan* New York: Oxford University Press.

Brown Johnson, N and Droege, (2004) S. "Reflections on the Generalization of Agency Theory: Cross-cultural Considerations." *Human Resource Management Review* 14: 325-335.

Bureau of Labor Statistics (2011) *Labor Force Statistics from the Current Population Survey,* available at http://www.bls.gov/cps/prev_yrs.htm [11 March 2011].

Dore, Ronald (1986) *Flexible Rigidities: Industrial and Structural Adjustment in the Japanese Economy 1970-80* Stanford, California: Stanford University Press workers.

Granovetter, M. (1985). "Economic action and social structure: The problem of embeddedness." *American Journal of Sociology*, 91, 481–510.

Haffner, John *Japan's Open Future: An Agenda for Global Citizenship,* New York: Anthem Press, 2009.

Hanami, Tadashi (2006) The Changing Labour Market, Industrial Relations and Labour Policy, 10-17, in Haak, Rene (ed) *The Changing Structure of Labour in Japan.* Houndmills: Palgrave Macmillan.

Imai, Jun and Shire, Karen (2006) Employment Deregulation and the Expanding Market for Temporary Labour in Japan, 78-89 in Haak, Rene (ed) *The Changing Structure of Labour in Japan* Houndmills: Palgrave Macmillan.

IMD (2009) *World Competitiveness Yearbook 2009* Lausanne:IMD.

Itagaki, Hiroshi (2002) "Japanese Multinational Enterprises: The Paradox of High Efficiency and Low Profitability" *Asian Business and Management* 1: 101-124.

Jacoby, Sanford (2005) *The Embedded Corporation.* Princeton: Princeton University Press.

Japan External Trade Organization (2008) *Survey on Attitudes of Foreign Affiliated Companies toward Direct Investment in Japan 2007* available at http://www.jetro.go.jp/en/reports/survey/pdf/2008_01_fdi.pdf [21 March 2011].

Japan Institute for Labour Policy and Training (2002) *The Personnel Management Cases of Foreign Affiliated Companies 4. US Companies (Finance, Services, Distribution)* available at http://www.jil.go.jp/english/laborinfo/library/documents/case_15~20.pdf [27 March 2011].

Japan Institute for Labour Policy and Training (2005) *Japan Working Life Profile: 2004/2005 Labor Statistics* available at http://www.jil.go.jp/english/workinglifeprofile/04-05.pdf [10 March 2011].

Japan Institute for Labour Policy and Training (2007) *Japan Working Life Profile: 2006/2007 Labor Statistics* available at http://www.jil.go.jp/english/laborinfoe/library/JapaneseWorkingLifeProfile2006-2007.pdf [10 March 2011].

Japan Institute for Labour Policy and Training (2010) *Labor Situation in Japan and Analysis: General Overview 2009/2010* available at http://www.jil.go.jp/english/laborsituation/2009-2010/general_overview/general_2009-2010.pdf [27 March 2011].

Japan Institute for Labour Policy and Training (2010) *Youth's views on job changes* available at http://www.jil.go.jp/kokunai/statistics/databook/2010/03/p124_t3-14.pdf [29 March 2011].

Japan Institute for Labour Policy and Training (2011) *Japan Working Life Profile: 2010/2011 Labor Statistics* available at http://www.jil.go.jp/english/workinglifeprofile/10-11/all.pdf [10 March 2011].

Keizer, Arjan B. (2010) *Changes in Japanese Employment Practices: Beyond the Japanese Model.* London: Routelege.

Kuroda, Kenichi (2006) "Japanese Personnel Management and Flexibility Today" *Asian Business and Management* 5(4): 453-468.

Matanle, Peter (2006) Beyond Lifetime Employment? Re-fabricating Japan's Employment Culture in Matanle, Peter and Lunsing, Wim (eds) *Perspectives on Work, Employment and Society in Japan.* Houndmills: Palgarve Macmillan.

Meyer-Ohle (2009) *Japanese Workplaces in Transition* Houndmills: Palgrave Macmillan.

Ministry of Internal Affairs and Communication (2010) J*apan Statistical Handbook 2010* Tokyo: Ministry of Internal Affairs and Communication.

Ministry of Internal Affairs and Communication (2011) *Population of 15 years old or more by labour force status*, available at http://www.stat.go.jp/data/roudou/longtime/zuhyou/lt02.xls [11 March 2011].

Ministry of Internal Affairs and Communication (2011) *Labour Force Survey Monthly Results*, available at http://www.stat.go.jp/english/data/roudou/154.htm#TAB [26 March 2011].

Nikkei (2010) Hiring Methods Worsen Job Drought for Grads , December 6, 2010 available at http://e.nikkei.com/e/ac/tnks/Nni20101206D03HH575.htm [31 March 2011].

Nishinarita, Yutaka (1998) Japanese-style industrial relations, 196-214, in Harukiyo and Hook (eds.) *Japanese Business Management* London: Routelege.

Ogoshi, Yonosuke (2006) "Japanese Employment Practices and Industrial Relations", *Asian Business and Management* (December 2006) 5(4): 469-485.

Pudelko, Marcus (2006) Decision-Making in Japanese Companies, 58-77 in Haak (ed) *The Changing Structure of Labour in Japan* Houndmills: Palgrave Macmillan.

Pudelko, Marcus and Harzing, Anne-Wil "Country-of-Origin, Localization, or Dominance Effect? An Empirical Investigation of HRM Practices in Foreign Subsidiaries", *Human Resource Management* (Winter 2007) 46(4): 535-559.

Pudelko, Marcus (2010) Innovation in Japanese HRM: Are Japanese Companies Adopting the Pay for Performance Principal?, I57-173, in Hagahirian, Parissa (ed) *Innovation and Change in Japanese Management* Houndmills: Palgarve Macmillan.

Robinson, Patricia, A. (2003) "The Embeddedness of Japanese HRM Practices: The Case of Recruiting", *Human Resource Management Review* 13: 439-465.

Schaede, Ulrike (2008) *Choose and Focus.* Ithaca (New York): Cornell University Press.

Schulz, Frank (2006) Recruitment in Japan, 169-179, in Haak (ed) *The Changing Structure of Labour in Japan.* Houndmills: Palgrave Macmillan.

Toyo Keizai (2002) *Gaishikei Kigyo Souran (Directory of Foreign Affiliated Companies)*. Tokyo: Toyo Keizai.

Toyo Keizai (2004) *Gaishikei Kigyo Souran (Directory of Foreign Affiliated Companies)*. Tokyo: Toyo Keizai.

Toyo Keizai (2006) *Gaishikei Kigyo Souran (Directory of Foreign Affiliated Companies)*. Tokyo: Toyo Keizai.

Toyo Keizai (2008) *Gaishikei Kigyo Souran (Directory of Foreign Affiliated Companies)*. Tokyo: Toyo Keizai.

Toyo Keizai (2010) *Gaishikei Kigyo Souran (Directory of Foreign Affiliated Companies)*. Tokyo: Toyo Keizai.

TPF&C (1991) *Survey of the American Chamber of Commerce in Japan Member Companies.* Tokyo: American Chamber of Commerce in Japan.

Vogel, Steven, K. (2007) *Japan Remodeled: How Government and Industry are Reforming Japanese Capitalism* Ithaca (New York): Cornell University Press.

Westney, Eleanor D (2006) "Lost Decade" *Asian Business and Management.* 5(2): 167-185.

Whitehall, Arthur M. (1991) *Japanese Management: Tradition and Transition.* London: Routledge.

Wolff, Leon (2010) Lifelong Employment, Labor Law and the Lost Decade: The End of a Job for Life in Japan?, 77-99, in Hagahirian, Parissa (ed) *Innovation and Change in Japanese Management* Houndmills: Palgarve Macmillan.

World Economic Forum (2011) *The Global Competitiveness Report 2010-2011.* Cologny: World Economic Forum.

Yamao, Mahito and Falk, Markus (2006) Human Resource Management in BASF Japan in Haak, Rene (ed) *The Changing Structure of Labour in Japan* Houndmills: Palgrave Macmillan.

About the author:

Anthony Carver is English and has lived in Japan since 2000. During this time, he has worked as freelance business trainer inside over a hundred Japanese and foreign owned companies. In 2010, he presented at Asia Pacific Week at the Australia National University, Canberra. He completed his masters in *Japanese Language and Society* at Sheffield University in 2011.

How does trust matter with the performance of cooperation for cross-country strategic alliance?

Huei-Wen Pao, Assistant Professor, Department of Marketing Management, Takming University of Science & Technology, Taiwan
hwpao@takming.edu.tw
+886-2-26585801#5164

Hsueh-Liang Wu, Professor, Department of International Business, National Taiwan University, Taiwan
hlwu@ntu.edu.tw
+886-2-3366-4990

Pi-Hui Chung, Graduate Student, Department of Marketing Management, Takming University of Science & Technology, Taiwan
kiki4183@gmail.com
+886-980719635

Topic:
China and the 21st Century
The impact of Asian Economies on Global Business

How does trust matter with the performance of cooperation for cross-country strategic alliance?

Huei-Wen Pao, Assistant Professor, Department of Marketing Management, Takming University of Science & Technology, Taiwan

Hsueh-Liang Wu, Professor, Department of International Business, National Taiwan University, Taiwan

Pi-Hui Chung, Graduate Student, Department of Marketing Management, Takming University of Science & Technology, Taiwan

ABSTRACT

The success of international strategic alliances depends largely on the extent to which partner firms work seamlessly with each other. However, the prior literature places more emphasis on governance choices for alliances than on partner selection, and remains notably silent on the process through which partner fit triggers the generation of trust and the subsequent performance outcome. Based on six cases of cross-country construction projects involving Taiwanese firms, this study contributes to the body of knowledge in collaborative dynamics by linking two distinct types of partner fit and the generative mechanism of inter-partner trust through the enabling effect of distributive fairness and partner similarity. Our evidence also shows that inter-partner trust conduces to the alliance performance by reducing the threat of behavioral and environmental uncertainty.

Keywords: International joint venture; Partner fit; Trust generation; Alliance performance

1. INTRODUCTION

Strategic alliances across border have been widely adopted as a way of going global over the past several decades and received growing academic attention (Robson et al., 2002; Contractor, 2005; Liu et al., 2010). However, as the failure rate of such international collaborative activities remains high, many potential causes have been examined but the decision-making process associated with selecting right partners is still one of the major concerns (Inkpen and Li 1999; Bierly and Gallagher, 2007). The success of international strategic alliances in emerging economies hinges particularly on the selection mechanism (Garten, 1996; Luo, 1998). Not only have various partner selection criteria been discussed but more research attempts are called upon to explain the dynamics of the partnering process (Parkhe, A. 1998; Hitt et al., 2000; Luo and Deng, 2009; Chand & Katou, 2011).

Strategy scholars contend that firm strategy be formulated not only through the match between the organization and its task environment but also in participation of behavior of strategically interdependent organizations (e.g., Leiponen and Byma, 2009). In this vein, the selection of partners for an international project rests on an effective and efficient alignment (in other word, fit) between the organizations involved. Partner fit is traditionally deemed as a result of complementary resources, the balance of bargaining power, relational harmony or interdependency (Douma et al., 2000). Recent literature on alliance has further considered a shared goal between allies important (Emden et al., 2006) and viewed the compatibility of their organizational culture, routines and human resources as the key determinants of a productive relationship (Greve et al., 2010).

Given that engaging in a partnership is a repetitive sequence of negotiation, commitment and execution in which the strategic objective, governance mode, operational activities, cultures, and the individual interests of partners are aligned as possible, one major impediment in the partnering process is the ambiguity in the inter-firm linkage—a lack of clarity in the causal link between partner selection and performance outcomes. Luo (2008) argues that an alliance is in general a loosely coupled system between the participating entities with the interface underpinned by a variety of inter-party arrangements. Among them, trust between collaborative partners stands to be critical where firms make substantial commitments to a cooperative relationship (Perry et al., 2004). Inter-partner trust is characterized here as the expectation held by one firm that another will not exploit its vulnerabilities when faced with the opportunity to do so (Barney & Hansen, 1994). This expectation is realized when partners demonstrate reliability by carrying out their promises (Mayer et al., 1995), act fairly when dealing with each other (Dyer & Chu, 2003), or exhibit goodwill when unforeseen contingencies arise (Parkhe, 1998).

Although the pivotal role of trust in the collaborative relationships has long been documented, these efforts have rarely connected the generative mechanism of trust to its antecedents or consequences (Chua, et al., 2008). In response to the calls for more empirical inquiries into the partnering process (Hitt et al., 2000) and the latent rules underpinning the success of the partnership (Robson et al., 2008), this study aims to develop a process model that explains when and how partner fit triggers the generation of trust and then leads to the performance outcome by reducing external and internal uncertainties. We thus sets out to explore the 'black box' in the partnering process by considering the trust dynamics an intermediate step that either softens or worsens the ambiguity of inter-firm linkages. Although we are not the first in the literature of collaborative dynamics (e.g., Ang, 2008; Defazio, Lockettb and Wright, 2009), our contribution to the current body of knowledge rests mainly on identifying not only the latent constructs in the partnering process but also the sequence in which they are exercised.

To address the above issues, we chose a small sample of Taiwan's construction firms[1], the archetypical pursuers of international partnership in the most recent decade. Despite a major contributor to the national GDP, construction industry in Taiwan did not actively pursue globalization in the past, but has increasingly been doing so, evidenced by more firms included in a recent ranking of the top internationally operating firms in the construction industry worldwide (ENR, 2008) than a decade ago. Taiwan's domestic construction market featured by the cyclic nature of demand has long saturated, making local firms gradually aware of global expansion as the only way for survival. Taiwanese construction firms engaging in China and southeastern countries are identified and selected by purposive sampling that enable us to follow experiment-like replication logic (Yin 1994). In our sample, the heterogeneity of the partnering process was "transparently observable" (Eisenhardt 1989), which made this setting ideal for building theory about how the trust dynamics connects partner selection and project performance through a micro-foundation of perceptive interpretation of partners, namely, the sense of *distributive fairness* and of *partner similarity*.

2. LITERATURE REVIEW

Strategic alliances create mutual dependence between previously independent firms (McEvily, Perrone, & Zaheer, 2003). A distinctive characteristic of strategic alliances is that

[1] After a preliminary investigation of international partnership as a whole across all industries in Taiwan, the scope of investigation was narrowed to focus upon the engineering services industries, more specifically, the construction consulting firms. This narrowed focus served to rationalize the scale of data collection and to ensure the relevance of this study. Fortunately, partnering patterns of construction consultancy were relatively consistent with patterns shown by other engineering services industries.

partners have to deal not only with the uncertainty in their task environment but also with the uncertainty arising from partners' behavior (Krishnan & Martin, 2006). The success of any given alliance depends on the extent to which partners match with each others in an effective and efficient manner; that is, the degree of "fit" among alliance members. An early definition of "fit" refers to the complementarity or compatibility among partners (Sorge, 1991). The former implies different and non-overlapped resources or capabilities contributed by partners to the alliance while the latter focuses on the "chemistry" between partners which affects the communication and coordination (Kale et al., 2000). In light of enormous complexity in managing a cross-border partnership, prior literature concludes that inter-partner comparative or configurational features, variously termed as strategic symmetries (Harrigan, 1985), interfirm diversity (Parkhe, 1991), or complementary resources and skills (Geringer, 1991) create inter-partner fit which is able to generate a synergistic effect on alliance performance (Luo, 1998).

2.1 Partner fit in the emerging markets

Resource-based view (Barney, 1991) and organizational learning (March, 1991) are two commonly employed lenses for partner selection. The former emphasizes the need of resource complementarity as the bases of choosing partner while the latter focuses on the need of mutual learning (Hitt et al., 2000). The strategic alliance is a relatively new form of organizing when economic, cultural and institutional distances between firms from developed and developing markets affect the extent of uncertainty and ambiguity in resource decisions and learning patterns (Garten, 1996). Over time, formal institutions shape the informal rules by which organizations operate. The economic and social stability in developed countries promotes the rules of exchange which become ambiguous and uncertain in emerging markets with economic and sometimes social instability (Pedersen & Thomsen, 1997). Additionally, firms from developed countries have more knowledge and experience in alliance activity than firms from emerging markets, which usually are less experienced in exploiting partnership opportunities. Based on the observation of international joint ventures in emerging economies, Luo (1998) argues that the firm should select the partner with financial, organizational and strategic criteria. In his categorization of partner fit, strategic fit influences the resources and capabilities needed for the success of partnership while organizational fit affects the efficiency and effectiveness of inter-firm cooperation. Besides, financial fit impacts the optimization of capital structure and cash flow. Some other aspects of partner fit also have been identified and categorized in the literature (e.g., Bronder & Pritzl, 1992; Douma, 2000; Emden et al., 2006). However, discussing all aspects of fit in depth does not fall within the scope of single article. Therefore, without ignoring the impact the other aspects of fit, this study focuses on the content aspects of alliances, in other words, on strategic fit and organizational fit.

As a source of inducements to collaborate through alliances, strategic fit is one of the most common and rational explanations for the way in which the strategic goal and resource needs of alliance partners are met. These inducements may take two general forms. First, an alliance may provide a firm with access to complementary resources that are not available within the firm. Resources may take the form of capital, technology, capabilities or any other firm-specific assets which are frequently key or critical success factors in an industry. Second, firms pursue cooperative agreements in order to gain fast access to new technologies or new markets, to benefit from economies of scale in joint research and/or production, to tap into sources of know-how located outside the boundaries of the firm, and to share the risks for activities that are beyond the scope or capability of a single organization. A successful alliance requires mutual dependency; that is, the better the partners complement one another (such as resources and competence complementarily), the more likely the alliance succeeds. Sustaining mutual dependency requires a proactive attitude from the partners involved. They must try to avoid, for example, unwanted transfer of knowledge or too great an overlap in markets, which would reduce mutual dependency (Douma et al., 2000). Two companies achieve strategic fit when activities and resources complement in a way that increases value potential. A ‘win-win’ situation from which both partners benefit is an ideal supposition (Bronder & Pritzl, 1992).

In addition to resource complementarity, the match of certain organizational traits also affects the willingness to pursue inter-firm cooperation. Bucklin and Sengupta (1993) highlight organizational compatibility as the critical factors for partner selection. Not only shared goals between partners but similar business routines and culture are important to international strategic alliances given the possible conflicts from economic and cultural disparity. Organizational fit may not be the same as organizational equality. Alliance partners almost always differ in terms of market position, organizational structure, management style and corporate values. Explicating these differences is of crucial importance in arriving at a profound understanding of the partners and reaching organizational fit.

2.2 Trust dynamics in the partnering process

Trust between alliance partners has long been empirically demonstrated to be of importance for alliance performance (e.g., Jones & George, 1998; Parkhe, 1998). Although prior research has put forth diverse interpretations of trust, a common core emerges as the willingness of one party to accept vulnerability based on positive expectations about the counterpart’s intentions or behavior (McEvily et al. 2003), or the mutual confidence that no party to an exchange will exploit another’s vulnerabilities, because opportunistic behavior would violate values, principles and standards of behavior that have been internalized by parties to an exchange (Das & Teng, 1998).

Despite the pivotal role of trust in fostering cooperation and information exchange, prior alliance research, with few exceptions (e.g., Nooteboom, 1996; Das and Teng, 1998; Fryxell et al. 2002), is limited to represent the true functioning of trust as a foundation for successful partnership by employing unidimensional or global measures of inter-partner trust (McEvily et al. 2003). Although other areas of social science research have distinguished among the qualitatively different bases on which trust develops (Kramer, 1999; Lewis &Weigert, 1985), these distinctions have rarely been applied into alliance research (few exception such as Faems et al., 2008; Chua, et al., 2008).

Drawing on the social psychology literature, the present research address the trust-building mechanism in the partnering process by applying the basic distinction between cognition-based versus affect-based trust (McAllister, 1995). The former, also the rational or calculative component of trust, is grounded in individual beliefs about peer reliability and dependability, while the latter, also the emotional component of trust, arises from one's own emotions and sense of the other's feelings and goodwill. The two types of trust not only represent the distinct systems of social psychological processes but refer to trust from the head and from the heart (Chua, et al., 2008). Whereas cognition-based trust involves a calculative and instrumental assessment, affect-based trust involves empathy, rapport, and self-disclosure. These processes of trusting differ experientially and have distinct antecedents and consequences.

2.3 Partner fit and trust

Some studies (Luo, 2002; Poppo & Zenger, 2002) provide evidence that partner selection with incomplete information on all contingencies is more likely to observe opportunistic behavior and thus necessitates the need of trust. Partner fit in terms of peer dependability, such as resource complementarity, may conduce to the formation of cognitive trust which arises from the evaluation of partner's competence, credibility, and reliability (McAllister, 1995). The structural alignment is also associated with what a firm perceives its partner's track record. A good track record builds cognitive trust which hinges on an appraisal of the other's competence and reliability demonstrated in the past (Ng and Chua, 2006).

On the other hand, partner fit in terms of mutual feeling or emotion, arising from shared values, reciprocal commitment and conflict solution, enables affect-based trust. Through social interactions between partners, affect-based trust reflects confidence in others and develops along with concern for mutual welfare (Lewis and Weigert, 1985; Chua, Ingram and Morris, 2008). For example, conflict is inherent in alliances because of partner opportunism, goal divergence and cross-cultural differences (Doz, 1996). An effective conflict management will not only help firms to deal with these difficulties, enable firms reach inter-organizational harmony but also induce affect-based trust based on logical and procedural similarity (Kale et al., 2000). Affective trust among partners can be thus seen as a result of shared information and experiences (Scott, 2000), joint knowledge creation (Nonaka, 1994), trading personnel with the partner (Hamel, 1991; Hart & Saunders, 1997), and reciprocity in a partnership (Browning et al., 1995).

2.4 Performance implication of inter-partner trust

Alliances achieve performance outcomes by productively combining and integrating the complementary resources and capabilities of partner firms. However, simply endowing an international alliance with high-quality parental resources and skills does not guarantee strong collective effectiveness, efficiency, and responsiveness. One major concern with alliances is that conflict between partners can occasion high costs or a premature breakdown of the relationship (Zaheer et al., 1998). Trust helps defuse such conflict, because trusting partners are more likely to interpret each other's equivocal actions in a manner conducive to the stability of the relationship (Krishnan and Martin, 2006).

Although most studies have argued theoretically and found empirically that the cognitive comfort that trust brings about is good for alliance performance (Dyer & Chu, 2003), few studies are beginning to recognize that the relationship between trust and alliance performance may be complicated. For example, a study on vertical R&D collaborations shows that trust affects task performance in the presence of the clients' ability to understand the tasks involved (Carson, Madhok, Varman, and John, 2003). Langfred (2004) argued that the effect of trust on the performance of self-managing teams reverses when individual autonomy is high. These studies suggest that the benefits derived from trust may magnify under certain conditions and diminish under other conditions. However, contingent reasoning has yet to be applied to the effect of trust on alliance performance.

3. RESEARCH APPROACH

Mixed findings in the extant literature on the partner selection, trust development and alliance performance prompt our interest in identifying the latent constructs in the partnering process and developing a comprehensive model for international partnership. Our study of partner fit and the consequent trust building involves observing and interpreting the accounts of project managers, creating considerable demands on research design and suggesting the use of intensive qualitative methods. An exploratory theory development from case-based approach was thus employed. Moreover, in-depth case research encourages theory building by allowing the constructs, the definitions or measurements, and causality to emerge from the investigation process rather than being deducted from existing theories at the outset (Eisenhardt, 1989) although the research problem was formulated and the existing literature reviewed to identify potentially important constructs beforehand.

3.1 Data collection process

The research setting is the project-based alliance operating in East Asian countries in the past five years (2005~2009) with each alliance involving Taiwanese construction companies and local partner firms. We specified the time limit to reduce memory loss effects but did not specify firm size and the project attributes. Because a complete list of international join projects in construction industry is unavailable, we conducted news searches for Taiwanese construction companies engaging in China, Vietnam, Malaysia, Indonesia, and India, and then identified ten Taiwanese construction firms by purposive sampling. Cases are selected for theoretical reasons that enable us to follow experiment-like replication logic (Eisenhardt 1989; Yin 1994). The objective is to achieve (1) literal replication, whereby similar results across cases are observed for predictable reasons (e.g., all are strong international partnership); (2) theoretical replication, whereby contrary results are observed but, again, for predictable reasons (e.g., differences emerge between strong versus weak partnership); and (3) analytic generalization, whereby we are able to generalize a particular set of results to a broader theory. This is in contrast to statistical generalization in which results based on large-size sample are generalized to a particular population.

This design required that we study firms with rich archival histories and willingness to grant diverse, multiple interviews. These criteria further narrowed our choice to the six international construction partnerships with the presence of Taiwanese firms (as shown in Table 1). A sufficient history for each firm is necessary to understand the temporal dynamics in the partnering process. Also, the purposive sampling outweighs a choice of a random sample, conducive especially to a process-focused and theory-building study such as ours (Siggelkow, 2007). Similarly, although the chosen firms are mostly above-the-average performers in the construction industry, they nonetheless exhibited much variation in their partner selection decisions and consequences, such as failed actions and undesired outcome, bringing useful variance to our theory building. We approached at least one executive in each of the Taiwanese company who then provided contact details for their partner and the operating details of the joint project. Six case studies were completed, four of which comprise manager dyads in the partnership. Thus, despite a small sample of cases we continued to collect data until theoretical saturation is achieved (Glaser & Strauss, 1967).

TABLE 1
Six cases of international construction projects included in the study

Case	Construction project	Participants	Firm type	Budget allocation	Personnel involved
A	A MRT station project in Delhi, India	BES, Taiwan	Contractor & consulting	70%	10
		SOMA, India	Contractor	30%	15
B	A railway rehabilitation project in Vietnam	CECI, Taiwan	Consultancy	38%	8
		SNCF, France	Consultancy	24%	3
C	A 20-storied commercial complex project in Su Chou, China	RuenTex, Taiwan	Contractor & Consultancy	60%	15
		Xin Shan, China	contractor	40%	15
D	Bangkok Transit System - Thailand	CECI, Taiwan	Consultancy	38%	8
		Thai Clearlake Engineering, Thai	contractor	38%	25
E	Industrial district development project - Malaysia	RSEA Engineering, Taiwan	Contractor & Consultancy	45%	25
		Okumura	Consultancy	25%	8

		Engineering, Japan			
F	Power supply system in Taiwan	Sinotech, Taiwan	Contractor & Consultancy	40%	50
		Bechtel, US	contractor	60%	10

The number of cases falls within Eisenhardt's (1989) recommendation of using four to ten cases. We conducted in-depth interviews with senior executives from both partner companies. A minimum of three interviews were conducted for each case to ensure the triangulation of informants. The interviews ranged between one to two hours. To ensure that each interview is not biased and that assurance of confidentiality is honored, we did not reveal prior knowledge generated from a previous interview with a partner company or other companies, which is critical given the dyadic nature of the study. We developed a semi-structured questionnaire as a guide for the interviews. The two main sections of the questionnaire addressed the process of forming the international partnership and the key constructs that affect the success of the partnering process. Respondents were asked to identify critical events during the process of forming the partnership. The research design provided a strong foundation for investigating the topic in this study: the similarity of the chosen construction projects allowed for meaningful comparisons of the processes and actors involved, and the diversity of critical events and differences between organizations provided a basis for generalizability. The case approach, including key activities and actions taken in each phase of the study, is illustrated in Table 2.

Our data collection was intensive, extending over 12 months and involving extensive documentary analyses, a number of interviews and focus group discussion. The data analysis was carried out in three main stages. First, we developed a set of narratives that described the basic profiles of actors involved in the partnering processes. Second, we identified the key issues in which actors engaged in the partner selection and operations of each partnership. In the third stage, we focused on identifying connections between our initial core concepts (i.e., partner fit, trust dynamics and alliance performance), yet we also allowed for additional concepts to enter the analysis. For instance, as the interviews proceeded, it became clear that trust cannot be generated directly from the perceived fit between partners. The latent constructs in the partnering process are thus added in our explanatory framework. In the end, the analyses resulted in a process model, separating out partner fit, trust and performance and identifying connections among them.

It is important to note that the focus of this paper is on the antecedents and consequence of partner fit rather than a complete theory of partnering process. Only those factors that emerged from the case studies are discussed and generalized into the framework.

TABLE 2
Case study methodology employed in this study

Phase	Key Activity	Steps taken in this study
Research Design Phase		
Step 1: Review of relevant literature	✓ Definition of the research question ✓ Definition of a priori constructs	Identify key constructs & research propositions on the basis of literature review
Step 2: Selecting cases	✓ Specify population ✓ Theoretical, not random sampling	✓ Two-partner alliances operating in China and southeast Asia (formed between Taiwanese and local firms over the past 5 years) ✓ Six cases: all in the construction industry (for replication)
Data Collection Phase		
Step 3: Crafting instruments and protocols	Create case study database	Transcribe interviews with project managers and other documentation
	Multiple data collection methods	In-depth interviews, company documents, media reports, observation, and websites
	Combine qualitative and quantitative data	Mix of text and numerical data
	Multiple investigators	Three investigators
Step 4: Entering the field.	Overlap data collection and analysis, including field notes	Ongoing analysis and investigator consultations

	Flexible and opportunistic data collection methods	Referrals to related 3rd parties or industry experts for additional interviews
Data-Ordering Phase		
Step 5: Data ordering	Organize events chronologically	Building case histories before analysis
Data Analysis Phase		
Step 6: Analyze data	Coding: open, axial, and selective	Make a "start list" of variables from a priori constructs and propositions for initial coding (using coding software), and make connections among variables
	Within-case analysis	Analyze each case separately
	Cross-case pattern search Using divergent techniques	Compare similarity & disparity among cases
Step 7: Theoretical sampling	Literal and theoretical replication across cases	Compare strong versus weak partnerships, high vs. low level of inter-partner trust, etc.
	Search evidence for "why" behind relationships	✓ Associate different patterns with respect to key variables with strong versus weak ✓ relationships; confirm or reject propositions
Step 8: Reaching closure	Theoretical saturation when possible	Stop data collection after six cases
Literature Comparison Phase		
Step 9: Compare emergent data with existing theory	Compare with conflicting and similar literature	Compare with previous alliance literature and theories

Source: The methodology applied in this study is adapted from the work of Pandit (1996, pp. 2~4) and Eisenhardt (1989, p.533).

3.2 Construction of measures

In addition to triangulating our informants to increase the quality of the data, we developed for all constructs through multiple question items. This helps us form and define the constructs from personal narratives. A broad and thorough literature review laid the ground for the generation of the initial constructs and the a priori assignment of items to measure all constructs. In-depth consultation with industry experts and feedback obtained when piloting the survey helped refine the choice of constructs, identify the most relevant items for those constructs, and select their proper wording given the empirical context. Some items were discarded, but not reassigned, after all interviews were complete; the a priori assignment of items was preserved for all constructs. Summary of key constructs in the partnering process and their illustrations are seen in Table 3.

TABLE 3
Summary of key constructs in the partnering process and illustrations

Key construct	Illustration from case studies
Strategic fit	1. We as partners in this alliance have a shared strategic vision on developments in the construction business environment. 2. We as partners in this alliance have mutually beneficial intentions and will be less likely to engage in opportunistic behaviors. 3. We as partners in this alliance may not have exactly the same goals, but there is a good balance of two of us seeking a common objective (complementary balance). 4. We as partners in this alliance are mutually dependent for achieving my objectives. 5. The joint activities have added value not only for the clients but also for all partners. 6. The alliance formed by us is the one expected and valued by my client (government).
Organizational fit	1. Most of organizational similarities and differences have been clearly addressed in the alliance design which provides somewhat flexibility strategically and organizationally. The complexity of the alliance design been thus reduced as far as possible. 3. The alliance design enables effective management control for both partners so as to overcome any serious conflicts. 4. Our expectations and behaviors are synchronized by compatible cultures between partner firms. There are little organizational boundaries because the two partners were all just kind of kindred spirits in [their] values on how [they] do business and treat clients and each other. 5. To have effective communication and exchange of knowledge in this alliance,

	I have worked out a minimum congruence in norms and procedures, that is, in the way of doing things. 6. Despite the absence of identical procedural routines, the commitment of two partners to the alliance relationship creates a willingness to share tacit knowledge and to develop the necessary common ground for communication and knowledge transfer.
Distributive fairness	1. We are very concerned with our share of alliance outcomes and earnings when considering the alliance roles and responsibilities assigned to it. 2. Without considering the contribution of each partner to alliance goal achievement, there is no trust in my partnership. 3. It is essential to balance skills and resources contributed by both sides.
Partner similarity	1. My firm and the partner are equally concerned with immediate growth and profit. 2. My firm and the partner have similar long-term strategies. 3. My firm's value and norm are similar to the partner's. 4. My firm and the partner have similar "organizational" cultures. 5. My firm's operating philosophy is equally risk taking to that of the partner.
Cognitive trust	1. My company has firm expectations about how the partner will behave in the alliance. 2. It would be illogical for the alliance partner to abuse my firm's trust. 3. My firm is able to understand the alliance partner's positive behaviors.
Affective trust	1. Because my firm and this alliance partner have been doing business for so long, I can understand them well. 2. My firm is "accustomed" to keeping the best interests of the alliance partner in mind. 3. When making important decisions, it is customarily expected that my firm considers the alliance partner's welfare alongside its own. 4. Because my firm and this alliance partner have been doing business for so long, all kinds of procedures have become self-evident.
Alliance performance	*Effectiveness* 1. The alliance has achieved its set goals. 2. The time and effort spent by the partners in developing and maintaining the alliance has been worthwhile. 3. This alliance has not been productive enough. [Reversed] *Efficiency* 1. In this alliance, resources are deployed efficiently. 2. Procedures and mechanisms for alliance resource utilization are cost-effective. 3. The alliance is not effective in converting resource inputs into venture

	outputs. [R] *Responsiveness* 1. The alliance's operations can adapt quickly to environmental changes. 2. The partners are able to make adjustments in the alliance to cope with changing circumstances. 3. Whenever some unexpected situation arises, the alliance management is capable of modifying the existing structure and strategies of the alliance. 4. In the face of problems or special circumstances, managers cannot make adjustments to the alliance as required. [R]

3.3 Research context: Internationalization of construction service firms

Over 50% of the world's population lives in Asia, most in developing countries, at relatively high population density, in conditions of increasing urbanization and population movement. The construction sector has thus been a pivotal ingredient in the robust economic growth of these Asian economies, as investments on housing and infrastructure followed by economic growth. Foreign contractors have also been attracted to local construction markets since the 1970s initially by projects of the public sector and then by the bail loans of international or regional development agencies, such as World Bank and Asian Development Bank.

The construction process itself is a complex process that involves different service providers of varying levels of skills. Construction activities that involve the erection of the physical facility will therefore be marketed as product based services. Other activities that involve management of the people and the process of construction of the physical facility are people based activities and strategies of people based services are used to deliver such services. The construction industry can therefore be thought of as an experience-based service where the quality of the product can be confidently judged after consumption. At the pre-construction phase, the quality of the design can only be judged after the erection of the physical facility and during its use. The soundness of the feasibility study however cannot be confidently judged for a long time, and this makes this stage of the pre-construction activities a credence-based services.

However, the construction business has changed dramatically over the past decade. Long gone are the days when firms from industrialized economies transplanted large teams from the home country to design and supervise the construction of infrastructure schemes overseas. The international market is no longer dominated by a handful of MNCs traditionally domiciled in the old colonial powers. International funding agencies seek for more low-cost solutions from the experienced construction firms in newly industrialized countries, such as Taiwan and Korea, but consider it a prerequisite for foreign firms to jointly work with local firms for the projects they sponsor. For example, one case in our study, which relates to construction design and supervision of a railway rehabilitation project in northern Vietnam, is requested by Asian Development Bank to limit the expatriate engineers to about one position for every 100 km. In another case, a large urban upgrading project in India, the expatriate project management consultancy and municipality capacity building input amounted to 460 man-months, whereas the design and financial inputs were provided by more than 4,500 months of local engineers and accountancy professionals. Expatriate inputs such as these do not provide much revenue but the home bases usually eye more business opportunity with local partners.

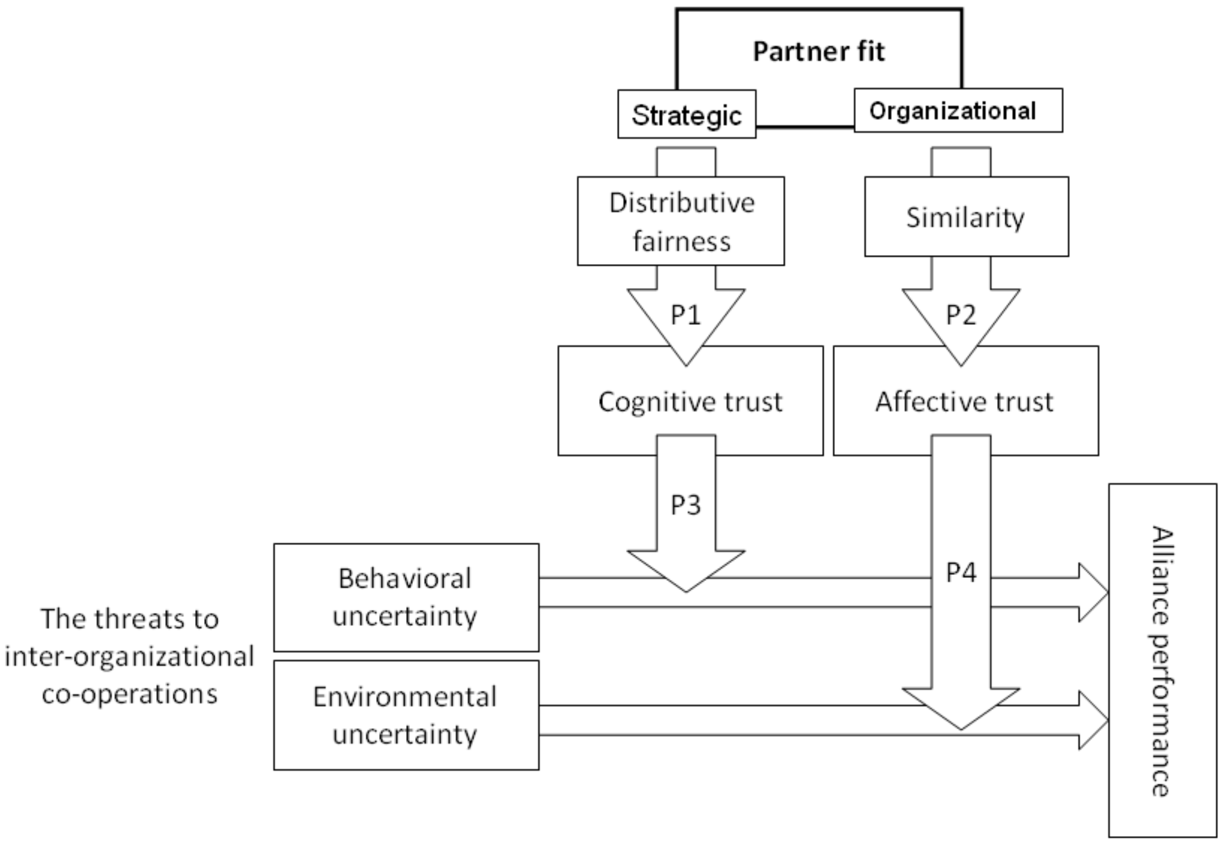
In addition to the Indigenization requirement of funding agencies, local firms in many developing countries have quickly learned the necessary skills to undertake the bulk of infrastructure works themselves by partnering with foreign firms. Indigenous competence in the construction market often comes with increased protectionism driven by government regulations that make it more difficult for foreign firms to win the infrastructure project alone. Taiwanese construction companies were well aware because of the outsourcing trend of manufacturing and, increasingly, of service jobs to locations where salary costs are much lower than those back at home. More long-term business-savvy Taiwanese firms seeing these trends as an opportunity; that is, some have already established overseas offices or initiated joint ventures to pursue the benefit of expansion into local and regional developing countries, as illustrated by the most cases covered in this study.

Year 2008 witnessed more active expansion of Taiwanese construction companies into foreign countries with considerable number of new contracts signed. The projects undertaken by Taiwanese companies were distributed mainly in Asia. Although overseas design and consultancy services offered by Taiwanese companies date back to the early 1990s, the amount from design and consultancy services contracts was small relative to their European, Japanese, and North American counterparts. According to the ranking of international contractors by Engineering News Record (ENR) in 2008, two Taiwanese companies were listed among the top 225 international contractors in the world (CECI Corporation and RSEA Engineering Corporation) with total international revenue of U.S.$1.69 billion in 2007. By operating offshore, construction firms are better able to soften seasonal and cyclical fluctuations in domestic market demand and to diversify their market portfolio, competitive position and thereby achieving survival and growth.

4. DISCUSSION

This study concerns with (1) How are partners in an alliance or joint venture found fit with each other? (2) How is inter-partner trust yielded from partner fit? And (3) How does inter-partner trust help firms cope with uncertainty and bring about performance? The framework, illustrated as Figure 1, reflects the logic flows from partner fit to the generation of trust and then to the performance outcome. Here we discuss the model in detail and offer propositions concerning the various processes and their interrelations.

FIGURE 1
The framework of partner fit and trust dynamics



4.1 Latent phenomena in “partner fit□trust” link

From our case studies, when firms in an international partnership engage in resource exchanges and social interactions, not only can partner fit in either structural or cognitive way be easier but inter-partner trust be generated quickly because the partners feel increasingly secure while their interactions are repeated over time with basic norms of equity and efficiency being met (Ring and Van de Ven, 1994). However, an international partnership is a collective effort dedicated to the accomplishment of some task goals, the success of such a partnership is always challenged by the complexities in the alliance. We found that alliance complexity retards the productive, trust-building process because (1) an international partnership characterized by an unfair distribution of benefits lacks a fair dealing necessary for reciprocal relationships, and (2) an international partnership with heterogeneous partners lacks the organizational congruence necessary for socially efficient working relationships.

So far little is known in the literature on how alliance complexity are reduced within an international partnership by the development of inter-partner trust nor about the process through which partner fit triggers trust. In our interviews, some cases show that alliance complexity was eased because continuing interactions generate beliefs and behaviors that reinforce positive expectations and lead to accepting vulnerability toward partner. This trust-building process occurs as sample firms evaluate ongoing experiences by employing the criteria of fairness and efficiency. As Bobson et al. (2008) argue, an increase in trust between partners depends on an accumulation of prior interactions judged as being equitable and efficient. We thus posit that two distinct types of partner fit (strategic fit and organizational fit) conduce to the trust dynamics through two perceptive interpretations, namely, the sense of *distributive fairness* (reflecting economically equitable interactions) and of *partner similarity* (reflecting socially efficient interactions).

4.1.1 From distributive fairness to cognitive trust

Resource interdependence in alliances usually emerges as the imperative structural glue that encourages alliance members to forgo their respective *de facto* right to manipulate their own performance in collective operations (Luo, 2008). The first latent construct in the “partner fit-trust” relationship is identified as the sense of distributive fairness which refers to the firm’s perceptions toward the fairness of its inputs and outcomes from the interactions with its partner.

Distributive fairness is viewed by several interviewees in this study as a result of the resource complementarity in the partnering process. A fair distribution of rewards and costs is a prerequisite for the positive expectations that serve as the basis for the willingness to be vulnerable (Kumar et al. 1995).

Most sample firms initiated or joined an international project in order to create and share synergistic gains. The question of how to share or divide such gains falls squarely into the realm of distributive fairness. According to one respondent, strategic fit of partnership refers directly to the complementarity of their partner's resources and capabilities, distribution of benefits and costs, rewards and costs, or other things that affect the well-being of each member of the partnership, all of which leads to the perception of distributive fairness. In our case studies, distributive fairness usually emerges when inter-partner sharing of monetary rewards (e.g., profits) and nonmonetary rewards (e.g., reputation enhancement) of collaboration is fair in view of each partner's contribution as well as its assumption of responsibility, risk, and burden. The partners are more likely to specify monetary reward sharing than nonmonetary gain distribution in an alliance contract. Thus, in case a non-pecuniary reward is considered, contract terms become ambiguous in stipulating gain sharing, making the fairness in reward sharing more perceptual and subjective. Under this circumstance, cultural disparity in some cross-border partnerships often accentuate the difficulty of achieving and sustaining alignment in the partners' reward distribution expectations.

Notwithstanding that perceived injustice concerning what each side puts in and gets out of the joint work commonly precedes contractual renegotiation or even dissolution, the role of distributive fairness in developing a business relationship can be clearly seen in some cases in this study. We therefore posit that distributive fairness provides the equity criterion for trust-enhancing interactions within international partnership. Perceived injustice in the outcomes received from a partnership can produce adverse affective reactions and hostility, greatly complicating work-related interactions. For example, one interviewee, who felt under-compensated in the cooperative relationship, argues that their partner in the joint project did not endeavor properly in the best interests of the two sides—a situation that undermines the generation of trust and is consistent with the observation of Scheer et al. (2003) on the negative reaction to perceived inequity in US and Dutch interorganizational relationships.

On the other hand, we found that a balance in relative inputs and rewards of one side in the partnering process would generate its confidence or willingness to rely on the other side's competence and reliability. Such knowledge will be accumulated so that one is able to make predictions, with some level of confidence, regarding the likelihood that its partner will live up to its obligations. In this regard, inter-partner trust is tied to past and expected exchanges of rewards. Therefore,

Proposition 1: *Distributive fairness brought about by strategic fit in the partnering process leads to the formation of cognitive trust.*

4.1.2 From partner similarity to affective trust

The second intermediating phenomenon identified in the "partner fit-trust" relationship is partner similarity. Although joint ventures are widely believed to contribute to knowledge exchange between partners, few studies have explored the influence of partner profile similarity on the fruitfulness of alliances (e.g., Darr and Kurtzberg, 2000). Given seemingly mixed accounts of collaboration between firms of similar type, some argue that similar partners are less likely to complement the needs of each other, neither offer new knowledge for each other to learn (Bell *et al.*, 2006), while others suggest that similar partners can cooperate and coordinate with greater ease because of their similar identities and routines (Luo and Deng, 2009).

We develop an understanding of partner similarity by focusing on partner profile, generally defined as the traits of a focal firm's partner (Gulati *et al.*, 2005), which, whilst useful, has been a less-studied construct in alliance research. The evidence of this study shows that the interaction of partners becomes less efficient as organizational incompatibilities and managerial dissimilarities between partners create complexity through social and operational misfits. As one project managers said in our interview, "*Alliance partners often end up wasting valuable time and resources … coordination costs are high because it is difficult to resolve organizational dissimilarities and to manage cooperative processes*". In contrast, another case shows that the similarity in the organizational background of partners, in terms of their experiences in certain markets or engineering domains, contributes significantly to routine communication in the joint project.

Although partner diversity is recognized in some literature (e.g., Parkhe, 1991) as analogous to complementary assets, the similarity between partners is also found important for value creation (Johnson *et al*. 1996). For example, in a sample of a number of alliances involving shipping line operators, Greve et al. (2010) confirm that alliance members are more likely to withdraw from alliances in which they have more incompatible resources with other members. In our case studies, compatibility in organizational culture, routines, structure, value or systems all help reduce the possibility of mutual misunderstanding and resource-related complication. Most of international partnerships are usually characterized by organizational disparities and cultural difference (Zaheer and Zaheer, 2006). However, as few cases show, the extent to that partners align with each other influences the way of socialization and the speed at which partners jointly develop common routines. This occurs, as predicted by Weick (1979), because close alignment facilitates the social-psychological process of sense making, or enactment, where actors come to understand and appreciate the social efficiency of their work-related interactions. Partner similarity likewise enhances trust development because the sense making process relies on congruent expectations and assumptions held by transacting parties about each other's prerogatives and obligations (Ring and Van de Ven, 1994). Consequently, organizational similarity facilitates and encourages the mutual sense making necessary to overcome technical problems in the joint works.

Our empirical evidence also sheds light on whether and how partner similarity affects the quality of the ensuing relationship. Conceptually, exchange partners with common backgrounds, routines and expectations are understood to become enmeshed in one another's social networks, whereupon the relationship becomes more binding and predictable (Gulati, 1995). Three project managers in our case studies are quoted as saying that they prefer conducting business with those with whom they are familiar; interpersonal attachments are thought to intensify the overall interaction process where they are compatible in key areas such as knowledge domains, social and task procedures. Consistent with these conceptualizations, we posit that partner similarity conduces to the development of affective trust as one firm places more confidence in a partner on the basis of feelings generated by the level of similarity and the social efficiency of their interactions. By contrast, rival ideologies and strategies present in an international partnership will prolong negotiation over terms of exchange, impede resource flows, and undermine the achievement of relational equilibrium. Hence,

Proposition 2: *Similarity due to organizational fit between partners leads to the formation of affective trust.*

4.2 Trust and alliance outcome

By now there seems to be general support for the idea that trust is a product of partner fit. Yet previous research has focused more on the static model addressing the simplified causalities between trust and alliance performance. Departing from the existing notion that trust improves universally the performance of all alliances, the study suggests that the influence of trust, including the fairness component (cognitive trust) and the goodwill component (affective trust), on alliance performance may be contingent on other factors.

From the case studies, we argue that the two distinct types of trust may soften the impact of uncertainty on alliance performance. In this respect, we distinguish between two types of uncertainty that are relevant to interfirm relations: environmental uncertainty, which results from exogenous sources outside the scope of the alliance, and behavioral uncertainty, which results from difficulty in anticipating and understanding the actions of an exchange partner.

4.2.1 Cognitive trust and behavioral uncertainty

In the case D and F (as shown in Table 1), the degree of strategic fit is relatively higher than other cases because of the complementarity of their expertise and the way of task division. In such highly interdependent activities, partners are usually required to share valuable knowledge-intensive resources with partner(s) so that the understanding of other's intent and contribution to the alliance becomes critical. As one interviewee said, the difficulty in discerning the contribution of closely intertwined partners may threaten their willingness of sharing of resources and information with partners and consequently jeopardize the joint project. The higher level of the behavioral uncertainty due to the causal ambiguity, the more likely that any change one partner makes will affect other partner in unplanned ways, and then the more immediate and severe the adverse impact of any mistake (intentional or not) by a partner.

We thus found that cognitive trust as an intermediate product of strategic fit stands to be especially beneficial in the presence of behavioral uncertainty. With good faith in their partners, some respondents in our interview claim that the sense of fairness enables the both sides of a joint project to better engage in constructive interpretation of each other's actions, and encourages partners to remain flexible in interaction.

As economic exchange relationships carry risks and threats of exploitation, the presence of trust can thus reduce the specification and monitoring of contracts, make it easier to anticipate and understand the actions of partner. (Sutcliffe & Zaheer, 1998). We therefore propose that cognitive trust generated in a joint venture alleviates apprehensions regarding the release of valuable information to partner(s) and facilitates information exchange and coordination.

Proposition 3: *Under high behavioral uncertainty, cognitive trust conduces to alliance performance, as the sense of fairness facilitates mutual adjustment and allows the smoother synchronization of critical tasks.*

4.2.2 Affective trust and environmental uncertainty

Construction projects in the emerging markets often encounter environmental uncertainty resulting from instability or unpredictability in market demands, regulations and resources available, many of which are out of project managers' control and hard to anticipate in advance. To cope with uncertain environments, alliance partners in most of our cases are held responsible for monitoring changes and adjusting the task division and schedules accordingly. As one interviewee is quoted as saying, "*the critical issue for the success of our partnership is not uncertainty per se but the processing of accurate information to deal with uncertainty*". The capacity of information processing may be a problem because of information overload and cognitive biases of decision makers, particularly in the absence of inter-partner trust.

From our observation, when affective trust is significantly present among partners, their tendency to screen or scrutinize the information from the other side for accuracy reduces, and their inclination to accept the information without further processing or verification increases, which is consistent with the finding of Szulanski et al. (2004) that a recipient's perception of the trustworthiness of an external source conditionally affects the effectiveness of the transfer of organizational practices. Because trust accustoms partners to rely on each other with less doubt, each partner tends to rely more extensively on its partner's knowledge of the environment when scanning the opportunities and threats faced by the alliance, while the mutual goodwill encourages partners to minimize additional efforts in the search process by exploiting each other's purported expertise to engage in specialized search. For instance, in Case D it is common for the local partner to scan the environment for regulatory changes or changes in client's preferences, while Taiwanese firm focused more on monitoring technological changes, global demand, or new competition from foreign firms. Such division of labor tends to be more pronounced in the presence of affective trust.

Overall, our cases show that affective trust stands to result in quick and efficient response to the challenges posed by an uncertain environment because it compensates cognitive limitation of individual partner firm; that is, with good intentions, trust may thus lead partners into making better decisions for their alliance in response to environmental changes. We thus conclude that as a result the effect of affective trust on project performance will be as positive in the presence of high environmental uncertainty. Under low environmental uncertainty, on the contrary, complete and accurate environmental scanning is less critical. Less effort is required to adjust to the environment because of its stability and predictability. Therefore, the uncertainty-reducing effect of goodwill trust discussed above is less relevant.

Scholars have consistently argued that hard-to-predict changes in market environment create critical uncertainty for organizations (e.g., Bergh & Lawless, 1998; Dess & Beard, 1984: 56). As environmental uncertainty is a function of both instability and unpredictability, these two distinct dimensions of market variation are both relevant to our investigation of the role of affective trust in the performance effect of partner fit.

Proposition 4: *Under high environmental uncertainty, affective trust conduces to alliance performance, as the goodwill trust dynamics trigger a more flexible mode of cooperation and soften the threats of unanticipated environmental changes.*

5. CONCLUSIONS

Given that inappropriate partner selection undermines the progress of alliances (Dev, Klein, and Fisher, 1996) and that the dynamics of partner interaction determine the viability of an alliance (Glaister, 1996), this study is an attempt to develop a parsimonious yet comprehensive model showing the process through which partner fit leads to alliance performance while recognizing the trust dynamics standing in between. The case study method was used, in which project managers in six construction partnerships were interviewed and their successful or unsuccessful experience were recorded, compared and synthesized. Managers' accounts of the partner selection and interaction process were analyzed using a narrative analysis technique, with the purpose of ascertaining commonality and variance in their stories and of grasping causal meanings from recurring sequences or from divergences.

This study, from a process perspective, contributes to the collaborative dynamics literature (Defazio et al., 2009) by showing how partner fit conduces to trust development and then leads to performance outcomes; that is, this study uncovers not only the latent constructs in the partnering process but also the sequence in which they are exercised. Our evidence cautions alliance managers that an unquestionably positive view of partner fit may be too simplistic. As our results show, achieving a trusting relationship is important but difficult because calculative trust commonly comes after perceived justice concerning what each partner puts in and gets out of the joint work, which again depends on the level of strategic fit. The other major challenge for managing international partnership is that partner dissimilarity usually counters the development of affective trust because their interactions become less efficient as managerial and organizational incompatibilities between partners create complexity through organizational misfits. Therefore, gauging the level of trust in an international partnership is no straightforward matter because this is a complex parameter comprising calculative and affective trust beliefs, which jointly serve as genuine manifestations of inter-partner trust and contribute to project performance.

As a final reflection, we point to several limitations of this study. The first limitation goes to the measurement of the degree of fit between alliance partners. Quantifying the degree of fit is certainly an avenue for further research, which would have to be of a different nature (hypothesis testing) from this research (proposition development). Yet, the study of this kind will be based on a combination of in-depth analysis and conceptual discussions framed by this study, and the business sense of the partners involved. Secondly, despite partner selection is usually dependent on explicit or implicit characteristics of partners, their past trade records often have been used as observable signals of unobservable firm quality, as discussed in Washington and Zajac (2005). As those characteristics of firms represent a hierarchy of stratification mechanisms that are important at different stages of the partner-choice process, this study paves the way for a social stratification view in the future, which partner selection decision may be simplified by eliminating alternatives that do not meet firm-specific status requirements from further assessment of their reputations for individual skills and services. Concerning a set of sequenced choices characterized by social categorization and selection (Darra and Kurtzbergb, 2000), staged models of partner choice are particularly relevant when the quality of potential partner abroad is uncertain. Finally, past studies have consistently shown that firms favor prior partners when forming new alliances. This behavior has been associated with a need to have knowledge of potential partners' capabilities and reliability in the pursuit of strategic fit. Although the inertia or repeated relationship as an alternative rationale of partner selection is beyond the scope of this study, it is worth being examined in the context of partnering process in international construction projects. Literature (e.g., Xiao and Rowley, 2002; Li, Eden, Hitt, and Ireland, 2008) shows that inertial models of behavior are based on the notion that, in uncertain situations, firms rely on historical experience (March, 1991), with past solutions to old problems becoming the starting point for new searches. One suggested venue of future research is to examine the extent to that inertia serves as the basis of a plausible alternative theory of alliance partner selection.

6. Managerial Relevance

This study argues that the success of an alliance requires attention not only to the hard side of governance choice but to the soft side of trust dynamics in the partnering process. We contend the necessity of taking both the selection of partners and the perceptive interpretation of partners (i.e., the sense of *distributive fairness* and of *partner similarity*) into account in pursuing the success of any cross-country collaboration. Advising such a dual focus runs counter to the emphasis on the isolated influence of either tangible alliance features or specific governance mode.

Our research can also inform practitioners as to when they can assume the presence of what type of trust, as opposed to treating it as a unidimensional construct. To build trust, managers have to first identify the nature of collaborative relationships and then attempt to understand the resultant types of trust. For example, in collaboration with a competent and credible partner, it is likely that the focal firm's trust in this partner is more instrumental rather than affective. Such knowledge is particularly useful for managers who seek to improve the alliance performance. It informs them about types of trust that may be lacking in the collaborative relationships. It also tells them what kinds of perception to develop to foster the missing trust.

Finally, our research can help managers judge the type of trust that exists in different types of collaboration. Trust in collaboration may be difficult to gauge as it is a subjective psychological state. The purposes of collaborative relationships, on the other hand, are easier to observe and can serve as cues for diagnosing the lines of trust. Knowledge regarding the associations between partner fit and trust and the subsequent performance implication can therefore help managers better understand and influence the social dynamics in a cross-country partnership.

REFERENCE

Ang, S. H. (2008). Competitive intensity and collaboration: Impact on firm growth across technological environments. *Strategic Management Journal*, 29, 1057-1075.

Barney, J. B. & Hansen, M. (1994). Trustworthiness as a Source of Competitive Advantage. *Strategic Management Journal*, 15, 175-190.

Barney, J. B. (1991). Firm resources and sustained competitive advantage. *Journal of Management*, 17, 99-120.

Bell, J., den Ouden, B., & Ziggers, G. W. (2006). Dynamics of cooperation: at the brink of irrelevance. *Journal of Management Studies*, 43, 1607–19.

Bergh, D. D. & Lawless, M. W. (1998). Portfolio restructuring and limits to hierarchical governance: the effects of environmental uncertainty and diversification strategy. *Organization Science*, 9(1), 87-102.

Bierly, P. E. & Gallagher, S. (2007). Explaining alliance partner and selection: fit, trust and strategic expediency. *Long range planning*, 40(2), 134-153.

Bronder, C. & Pritzl, R. (1992). Developing strategic alliances: A conceptual framework for successful cooperation. *European Management Journal*, 10(4), 412-22.

Browning, L. D., Beyer, J. M., & Shetler, J. C. (1995). Building cooperation in a competitive industry: SEMATECH and the semiconductor Industry. *Academy of Management Journal*, 38(1): 113-151.

Bucklin, L. P. & Sengupta, S. (1993). Organizing successful co-marketing alliances. *Journal of Marketing*, 57(2), 32-46.

Built to last but falling apart: Cohesion, friction, and withdrawal from interfirm alliances. *Academy of Management Journal*, 53(2), 302-322.

Carson, S., Madhok, A.., Varman, R., & John. G. (2003). Information processing moderators of the effectiveness of trust-based governance in interfirm R&D collaboration. *Organization Science*, 1(14), 45-56.

Chand, M. & Katou, A. A. (2011). Strategic determinants for the selection of partner alliances in the Indian tour operator industry: A cross-national study. *Journal of World Business*, doi:10.1016/j.physletb.2003.10.071.

Chua, R. Y. J., Ingram P., & Morris, M. W. (2008). From the head and the heart: Locating cognition -and affect- based trust in managers professional networks. *Academy Management Review*, 5(1), 436-452.

Contractor, F. J. (2005). Alliance structure and process: Will the two research streams ever meet in alliance research?. *European Management Review*, 2(2), 123-129.

Darra, E. D. & Kurtzbergb, T. R. (2000). An investigation of partner similarity dimensions on knowledge transfer. *Organizational Behavior and Human Decision Processes*, 82(1), 28-44.

Das, T.K. & Teng, B. S. (1998). Between trust and control: Developing confidence in partner cooperation in alliances. *Academy of Management Review*, 23 (3), 491-512.

Defazioa, D., Lockettb, A., & Wright, M. (2009) Funding incentives, collaborative dynamics and scientific productivity: Evidence from the EU framework program. *Research Policy*, 38(2), 293-305.

Dess, G. G. & Beard, D. W. (1984). Dimensions of organizational task environments. *Administrative Science Quarterly*, 29, 52-73

Douma, M. U., Bilderbeek, J., Idenburg, P. J., & Looise, J. K. (2000). Strategic alliances managing the dynamics of fit. *Long Range Planning*, 33, 579-598.

Doz, Y. L. (1996). The evolution of cooperation in strategic alliances: Initial conditions or learning processes?. *Strategic Management Journal*, 17, 55-78.

Dyer, J. H. & Chu, W. (2003). The role of trustworthiness in reducing transaction costs and improving performance: Empirical evidence from the United States, Japan, and Korea. *Organization Science*, 14, 57-68.

Eisenhardt, K. (1989). Building theories from case study research. *Academy of Management Review*, 14(4), 532-551.

Emden, Z., Calantone, R. J. & Droge, C. (2006). Collaborating for new product development: selecting the partner with maximum potential to create value. *Journal of Product Innovation Management*, 23, 330-341.

Faems, D., Janssens, M., Madhok, A., & Looy, B. V. (2008). Toward an integrative perspective on alliance governance: connecting contract design, trust dynamics, and contract application. *Academy of Management Journal*, 51(6), 1053-1078.

Fryxell, G. E., Dooley, R. S., & Vryza, M. (2002). After the ink dries: The interaction of trust and control in US-based international joint ventures. *Journal of Managerial Studies*, 39, 865-886.

Garten, J. E. (1996). The big emerging markets. *Columbia Journal of World Business*, 31, 6-31.

Geringer, J. M. (1991). Strategic determinants of partner selection criteria in international joint ventures. *Journal of International Business Studies*, 22, 41-62.

Glaister, K. W. (1996). UK–Western European strategic alliances: Motives and selection criteria. *Journal of Euromarketing*, 5(4), 5-35.

Glaser, B. G. & Strauss, A. L. (1967). *The discovery of grounded theory*. Chicago: Aldine.

Greve, H. R., Baum, J. A. C., Mitsuhashi, H., & Rowley, T. J. (2010). Gulati, R. (1995). Does familiarity breed trust? The implications of repeated ties for contractual choice in alliances. *Academy of Management Journal*, 38, 85-112.

Gulati, R., Lawrence, P. R., & Puranam, P. (2005). Adaptation in vertical relationships: Beyond incentive conflict. *Strategic Management Journal*, 26(5), 415-440.

Hamel, G. (1991). Competition for competence and inter-partner learning within international strategic alliances. *Strategic Management Journal*, 12, 83-103.

Harrigan, K. R. (1985). An application of clustering for strategic group analysis. *Strategic Management Journal*, 6, 55-73.

Hart, P. & Saunders, C. (1997). Power and trust: Critical factors in the adoption and use of electronic data interchange. *Organization Science*, 8(1), 23-42.

Hitt, M. A., Dacin, M. T., Levitas, E., Arregle, J. L., & Borza, A. (2000). Partner selection in emerging and developed market contexts: Resource-based and organizational learning perspectives. *Academy of Management Journal*, 43(3), 449-467.

Inkpen, A. C. & Li, K.Q. (1999). Joint venture formation: Planning and knowledge-gathering for success. *Organizational Dynamics*, 27(4), 33-47.

Johnson, J. L., Cullen, J. B., Sakano, T., & Takenouchi, H. (1996). Setting the stage for trust and strategic integration in Japanese-U.S. cooperative alliances. *Journal of International Business Studies*, 27(5), 981-1004.

Jones G. R. & George, J. M. (1998). The experience and evolution of trust: Implications for cooperation and teamwork. *Academy of Management Review*, 23, 531-546.

Kale, P., Singh, H., & Perlmutter, H. (2000). Learning and protection of proprietary assets in strategic alliances: Building relational capital. *Strategic Management Journal*, 21, 217-237.

Khanna, T., Gulati, R., & Nohria, N. (1998). The dynamics of learning alliances: Competition, cooperation and relative scope. *Strategic Management Journal*, 19, 193-210.

Kramer, R. M. (1999). Trust and distrust in organizations: Emerging perspectives, enduring questions. In J. T.Spence (Ed.), *Annual Review of Psychology*, (pp. 569-598). Palo Alto, CA: Annual Reviews.

Krishnan, R. & Martin, X. (2006). When does trust matter to alliance performance?. *Academy of Management Journal*, 49(5), 894-917.

Kumar, N., Scheer, L. K., & Steenkamp, J. B. (1995). The effects of supplier fairness on vulnerable resellers. *Journal of Marketing Research*, 32, 54-65.

Langfred, C. W. (2004). Too much of a good thing? Negative effects of high trust and individual autonomy in self-managing teams. *Academy of Management Journal*, 47, 385-399.

Leiponen, A. & Byma, J. (2009). If you cannot block, you better run: Small firms, cooperative innovation, and appropriation strategies. *Research Policy*, 38(9), 1478-1488.

Lewis, J. D. & Weigert, A. (1985). Trust as a social reality. *Social Forces*, 63, 967-985.

Li, D., Eden, L., Hitt, M. A., & Ireland, R. D. (2008). Friends, acquaintances, or strangers? Partner selection in R&D alliances. *Academy of Management Journal*, 51(2), 315-334.

Liu, C. L., Ghauri, P. N., & Sinkovics, R. R. (2010). Understanding the impact of relational capital and organizational learning on alliance outcomes. *Journal of World Business*, 45(3), 237-249.

Luo, Y. & Deng, L. (2009). Do birds of a feather flock higher? The effects of partner similarity on innovation in strategic alliances in knowledge-intensive industries. *Journal of Management Studies*, 46(6), 1005~1030.

Luo, Y. (1998). Timing of investment and international expansion performance in China. *Journal of International Business Studies*, 29(2), 391-408.

Luo, Y. (2002). Contract, cooperation, and performance in international joint ventures. *Strategic Management Journal*, 23, 903-919.

Luo, Y. (2008). Structuring interorganizational cooperation: the role of economic integration in strategic alliances. *Strategic Management Journal*, 29, 617-637.

March, J. G. (1991). Exploration and exploitation in organizational learning. *Organization Science*, 2(1), 71-87.

Mayer, R. C., Davis, J. H., & Schoorman, F. D. (1995). An integrative model of organizational trust. *Academy of Management Review*, 20, 709-734.

McAllister, D. J. (1995). Affect- and cognition-based trust as foundations for interpersonal cooperation in organizations. *Academy of Management Journal*, 38, 24-59.

McEvily, B., Perrone, V., & Zaheer, A. (2003). Trust as an organizing principle. *Organization Science*, 14, 91-103.

Ng, K. Y. & Chua, R. Y. J. (2006). Do I contribute more when I trust more? Differential effects of cognition- and affect-based trust. *Management and Organization Review*, 2, 43-66.

Nonaka, I. (1994). A dynamic theory of organizational knowledge creation. *Organization Science*, 5(1), 14-37.

Nooteboom, B. (1996). Trust, opportunism and governance: A process and control model. *Organization Studies*, 17, 985-1010.

Pandit, N. R. (1996). The Creation of Theory: A Recent Application of the Grounded Theory Method. *The Qualitative Report*, 2(4), 1-20.

Parkhe, A. (1991). Interfirm diversity, organizational learning and longevity in global strategic alliances. *Journal of International Business Studies*, 22, 579-601.

Parkhe, A. (1998). Building trust in international alliances. *Journal of World Business*, 33, 417-437.

Parkhe, A. (1998). Understanding trust in international alliances. *Journal of World Business*, 33(3), 219-240.

Pedersen, T. & Thomsen, S. (1997). European patterns of corporate ownership: A 12-country study. *Journal of International Business Studies*, 28, 759-778.

Perry, M., Semgupta, S., & Krapfel, R. (2004). Effectiveness of horizontal strategic alliances in technologically uncertain environments: Are trust and commitment enough?. *Journal of Business Research*, 57(9), 951-956.

Poppo, L. & Zenger, T. (2002). Do formal contracts and relational governance function as substitutes or complements?. *Strategic Management Journal*, 23, 707-725.

Ring, P. S. & Van de Yen, A. H. (1994). Developmental processes of cooperative interorganizational relationships. *Academy of Management Review*, 19, 90-118.

Robson, M. J., Katsikeas, C. S., & Bello, D. C. (2008). Drivers and performance outcomes of trust in international strategic alliances: The role of organizational complexity. *Organization Science*, 19(4), 647-665.

Robson, M. J., Leonidou, L. C., & Katsikeas, C. S. (2002). Factors influencing IJV performance: Theoretical perspectives, assessment, and future directions. *Management International Review*, 42(4), 385-418.

Scheer, L. K., Kumar, N., & Steenkamp, J. E. M. (2003). Reactions to perceived inequity in U.S. and Dutch interorganizational relationships. *Academy of Management Journal*, 46(3), 303-316.

Scott, J. E. (2000). Facilitating interorganizational learning with information technology. *Journal of Management Information Systems*, 17(2), 81-113.

Siggelkow, N. (2007). Persuasion with case studies. *Academy of Management Journal*, 50(1), 20-24.

Sorge, A. (1991). Strategic fit and the societal effect: Interpreting cross-national comparisons of technology, organization and human resources. *Organization Studies*, 12(2), 161-190.

Sutcliffe, K M. & Zaheer, A. (1998). Uncertainty in the transaction environment: An empirical test. *Strategic Management Journal*, 19, 1-24.

Szulanski, G., Cappetta, R., & Jensen, R. J. (2004). When and how trustworthiness matters: Knowledge transfer and the moderating effect of causal ambiguity. *Organization Science*, 15, 600-613.

Washington, M. & Zajac, E. J. (2005). Status evolution and competition: Theory and evidence. *Academy of Management Journal*, 48, 282-296.

Weick, K. E. (1979). *The Social Psychology of Organizing*. Reading, MA: Addison-Wesley.

Xiao, L. S. & Rowley, T. J. (2002). Inertia and evaluation mechanisms in interorganizational partner selection: Syndicate formation among U.S. investment banks. *Academy of Management Journal*, 45(6), 1104-1119.

Yan, A. & Zeng, Z. (1999). International joint venture instability: A critique of previous research, a reconceptualization, and directions for future research. *Journal of International Business Studies*, 30, 397-414.

Yin, R. K. (1994). *Case Study Research: Design and Methods*. London: Sage Publications.

Zaheer, A., McEvily, B., & Perrone, V. (1998). Does trust matter exploring the effects of interorganizational and interpersonal trust on performance. *Organization Science*, 9, 141-159.

Zaheer, S. & Zaheer, A. (2006). Trust across borders. *Journal of International Business Studies*, 37(1), 21-29.

How to Execute Effective Free Advertising Using Online Social Network: The Moderating Role of Social Tie

Chung-Chi Shen (corresponding author)*
Graduate Institute of Marketing and Logistics
National Chiayi University
Address: 580 Sing-Ming Rd. Chiayi City 600, Taiwan
e-mail: georgeccshen@gmail.com
Tel: 886-931749150
Fax: 886-52732945

Research Paper

September 22, 2011

*Chung-Chi Shen is an associate professor of Marketing at National Chiayi University in Taiwan. His research interests include Internet marketing and online consumer behavior. His work has been published in *Computers in Human Behavior, Internet Research, Behaviour & Information Technology, Industrial Marketing Management, International Journal of Service Industry Management*, *Journal of Global Marketing,* etc.

**The study was funded by National Science Council, Taiwan.

How to Execute Effective Free Advertising Using Online Social Network: The Moderating Role of Social Tie

Abstract

Facebook creates a brand new way where users can share messages to friends online, which increases the effectiveness of advertising comes from social capital. Past researches have found that the presentation of advertising will affect consumer attitude toward a message and an object. Our research aims to investigate what factors affect the impact of consumer-sharing advertisements (peers-to-peers) on the communication effectiveness. Conceptual framework was developed based on social capital and communication theory, including tie strength, type of message, and advertising literacy. Two experiments involving 346 participants were conducted to test research hypotheses. Research results showed following findings (1) interactive advertising gains greater consumer's attitude toward the ads and message sharing intention; (2) social tie is important factor to moderate the impacts of message format and advertising literacy on advertising effectiveness. (3) advertising effectiveness across all message type and advertising literacy conditions is relatively steady when consumers received advertising from strong tie (4) participants in weak tie condition will exhibit lower attitude toward advertising when advertising is non-interactive or participants have higher advertising literacy. (4) intention to share advertising is low for the participants possessing high advertising literacy to receive message from weak tie than does from strong tie. The study advances the social capital and communication literatures in explaining the effectiveness of consumer-sharing advertising. Managerial implication from our research is provided for company to plan better marketing strategy in digital era.

Keywords: Social Networking, Social Tie, Advertising Literacy, Interactive Advertising, Facebook

How to Execute Effective Free Advertising Using Online Social Network: The Moderating Role of Social Tie

1. Introduction

With the rapid development of Internet-based social networking sites and growing enormous user populations, marketing activities have put more attentions from traditional media to the new Internet-based media. In 2010, it is first time ever that spending on Internet ads has surpassed newspaper ads spending. Over 50% companies indicated that they have the intention to use digital media as their communication tools (eMarketer, 2010). Online social network communities bring people together, in which company can effectively communicate more targeted consumers than other media can do. Online community with larger-members base is seen as good channel that company can advertise their product.

In the past, people can establish friendships solely through face-to-face, which is highly bounded by geographical border. Nowadays, people have more different channels to link each other, particularly, Internet's advantages (e.g., timeliness, boundless and convenience etc.) enable people to meet friend easily never ever before. According to Mesch and Talmud (2006), adolescents use the Internet not only to maintain social relationships with distant relatives or friends but also to create more extensive relationships online. When people reported that the friend was met online, the average strength of the tie turned out to be lower than when the friend was met face-to-face and the duration of the friendship was also higher for face-to-face friend (Mesch and Talmud, 2006). In addition, friends met face-to-face do more types of activities than friends met online. Namely, the strength of social ties no mater built offline or online may affect the degree of a person's activity involving in virtual community.

At the end of 2010, Facebook, the online community giant, has 500 million users worldwide and just took about 4 years to obtain large number of customers that no other company can do before. Taiwan is one of the fastest growing countries in terms of users growing rate on Facebook in greater Chinese market, with 5 million registered users in 2010, and is threatening to other incumbents who offering blog or Internet social networking services (e.g., Yahoo) (EC Times, 2009). Getting more and more companies adopt Facebook as communication channel to increase possibility that their messages can be broadly forwarded. Viral marketing works like the marketer creating advertising messages such as video, story, and pictures that are attached in the e-mail or just display the linking URLs for consumers connecting to a website, which aims to increase product awareness or brand equity (e.g., Ho and Dempsey, 2010). Facebook brings a new revolution of viral marketing that advertisings can be forwarded through social networking site in hundred ways.

It is crucial for both online social networking service providers and companies to gain profit from effective advertising. Nowadays there are plenty of ways firms can advertise via Internet, but it is impossible that firms can get marketing advantages if they cannot utilize Internet ads in an appropriate manner. For example, the ads delivering from peer-to-peer has same benefit as word-of-mouth, showing the importance of consumer-to-consumer interaction brings power of consumer-generated media, as well many companies have gained product or brand awareness through this way. However, not all messages delivered on the Internet can get equivalent outcome, it may differ from message design, relationship between sender and receiver, and receiver's knowledge. Yet, despite a large literature concerning advertising and social networking site, little is known about how this peer-to-peer viral marketing tools affect consumer's attitude and its consequence. For better understanding of effective communication outcomes through online social networks, our study aims to find what factors affecting advertising effectiveness from three angles: message type and advertising literacy from communication theory, and social tie from social psychology.

2. Literature Review and Research Hypotheses

2.1 Theoretical Background

Social Network

Social network comprised the social transaction, links and structural characteristics, these three aspects are useful to depict the people's interactive activities existing in online surroundings. Transactional content defines four types of purposes that people use social network to communicate: (1) exchange of affect, (2) exchange of influence or power, (3) exchange of information, and (4) exchange of goods of services (Tichy, Tushman, and Fombrun, 1979). The nature of links refers to the linkages between network members can be determined by the intensity, reciprocity, clarity of expectations and multiplexity. The higher the extent to which linking one member to another, the strong the linkage. There are various types of connection and node that presenting the structural characteristics. A social network may have the characteristics of internal or/and external linkages, and the people may not act equally important in the social network nodes in terms of the role they play (Mathwick, Wiertz, and Ruyter, 2008).

Social capital is an intangible force that helps to bind society together by transforming self-seeking individuals into members of a community with shared interests, shared assumptions about social relations, and a sense of the common good (Etzioni, 1996). Social capital has been applied at both the individual and collective levels (Lappe and DuBois, 1997). One of reasons to explain why Facebook growing fast is its role of helping people get together online and build up their social capital by information sharing, and interpersonal interaction through this vast virtual social network.

Tie Strength

Social ties have also been labeled as an umbrella concept that covers both the process of social capital accumulation as well as its outcomes (Adler and Kwon 2002; Nahapiet and Ghoshal 1998). Tie strength is a multidimensional construct that represents the strength of the dyadic interpersonal relationships in the context of social networks, including closeness, intimacy, support, and association. The strength of the tie may range from strong (e.g., close friend) to weak (e.g., seldom contacted acquaintances), depending on the number and types of resources they exchange, the frequency of exchanges, and the intimacy of the exchanges between them (Marsden and Campbell, 1984).

Since word-of-mouth (hereafter WOM) is a social phenomenon, analysis of social relationship based on social exchange theory is helpful to understand the referrals flow among individuals (Brown and Reingen, 1987), particularly eWOM such as online review or message sharing are prevailing in online social networking sites.

2.2 Research Hypothesis

We depict our conceptual research model as shown in Figure 1. We predict tie strength from social capital will play a crucial role in moderating the relationship from advertising message format and advertising literacy to advertising effectiveness. Research hypothesis development will state in next section.

Insert Figure 1 about here

2.2.1 Interactivity of Advertising

Interactivity is the capability of a communication system that allows exchange of roles between senders and receivers in real or delayed (Rice, 1984). Meyer and Zark (1996) proposed the degree of consumers choose, handle, integrate and format a message that reflects the interactivity of a communication. Two-way communication can improve ads impact because receivers can give feedback to companies. Williams, Rice and Rogers (1988) stated interactivity can be measured by the abilities that participants could control over a conversation. Li and Leckenby (2004) defined Interactive Advertising as the "paid and unpaid presentation and promotion of products, services and ideas by an identified sponsor through mediated means involving mutual action between consumers and producers.".

Internet brings a profound medium that enlarges interactivity of advertising (Li and Leckenby, 2004). One of reasons to explain the interactive advantage of Internet advertising is that consumers have more control on the Internet than do firms, which might increase consumer's interest with advertising (Roehm and Haugtvedt, 1999). Raman (1996) stated interactive advertising had advantages to deliver advertising in varying methods, types, formats and features. On Facebook, users can browse friend's wall or receive invitation from friends to view an advertising, which of can either be made as just a non-interactive advertising with only texts or/and photos inside, or it is an interactive advertising embedded in a mental test or game. Interactive advertisement has been recognized as receiving greater communication impacts because it has more vivid characteristics to attract and persuade target audiences (e.g., Cheng et al., 2009; Li and Leckenby, 2004). Nowadays, company can utilize tools supporting Web 2.0 concept to place their brand or product in a game, video, or wall of the Facebook. By doing so, interactive advertising might increase user's attention to an advertising rather than ignorance or mind-numbing resulting from a dull advertising. Accordingly, we propose:

H1: Communication effectiveness as (a) attitude toward advertising (b) message sharing intention will be more pronounced under interactive advertising formant than non-interactive one.

2.2.2 Moderating Effect of Tie Strength and Message Format

Haythornthwaite (2001) stated people in a strong tie incline to communicate more frequent and make more effort in maintaining relationship. Strong tie built upon closed relationship makes people to exchange information by using various media and high frequency that could support the tie. Wellman et al. (1998) point out that strong ties involve a higher level of intimacy, more self-disclosure, emotional as well as instrumental exchanges, reciprocity in exchanges, and more frequent interaction. As suggestion above, we surmise that the communication effectiveness of message type will vary with the degree of tie strength, because receivers might pay different attention not only along with interactivity of advertising message, but also concern the conduit of advertising information disseminating.

if a person receives an advertising message from his/her close friend, his/her attitude toward the message and message sharing intention will be less influenced by message format, because s/he has higher intention to figure out and forward the message received from close friend in strong tie where competence based trust existing (Levin and Cross, 2004). As well, recipients in strong tie group will have higher intention to share the message because it is a duty for friends in strong tie to share what useful information brought by close friend regardless the type of message (Bruyn and Lilien, 2008).

However, people interact in weak tie have relatively less motivation to communicate because a lack of trust or source credibility will increase people's resistance to untrustworthy source (Levin and Cross, 2004). In this circumstance, communication will rely on organizationally (or socially) sanctioned means that provide an instrumental contact. Therefore, receivers may have higher attitude toward the message and message sharing intention only if the message itself consists of high interactive features (e.g., entertaining game). Contrarily, non-interactive message brings fewer anchors to attract audience's eye, which might result in lower intention to forward the message, because there is a lack of social capital to bind up people in weak tie. Thus, we propose the following hypotheses:

H2: The impact of message format on attitude toward the ad is moderated by social tie. Interactive message has greater impact when it is delivered from weak tie that when it is from strong tie.

H3: The impact of message format on message sharing intention is moderated by social tie. Interactive message has greater impact when it is delivered from weak tie than when it is from strong tie.

2.2.3 Moderating Effect of Tie Strength and Advertising Literacy

Literacy refers to the ability to read and understand texts. Many recent definitions offer a broader perspective, however, referring to the ability to produce, understand and use texts in culturally appropriate ways (Graddol, 1993). The concept of literacy was adopted in advertising literature to measure the audience's ability to analyze or criticize the media surrounding them.

Previous researches confirmed the advertising literacy comprising two constructs: advertising skepticism and advertising resistance (O'Donahoe and Tynan, 1998). The higher advertising literacy the audiences have, the greater extent they will resist to the advertisings and more effort may use to analyze the content of advertising (Lannon, 1985; Meadows. 1983). Advertising literacy is crucial to influence the communication effectiveness, because consumers' ability to understand advertising and to recognize various types of commercial phenomena in the media affects their attitude toward an advertising. Advertising literacy can be seen as consumers' sophistication in recognizing or analyzing ads that enables them to resist advertising messages.

Even the consumer's advertising literacy may threaten communication effect of advertisings, we proposed that tie strength regarding the interpersonal relationships in the context of social networks may increase participant's trust on others coming from closeness, intimacy, support, and association relationship. When consumers receive am advertising from strong tie, advertising literacy may play minimal function helping consumers to analysis the reality and purpose of an advertising. Contrarily, consumer's skepticism and resistance to advertising will be evoked if the advertising message is from weak tie, which results in consumer's inclination to lower the rating of an advertising message. Namely, advertising literacy will drive consumer's attitude toward the advertising and message sharing intention depends on the tie strength between senders and receivers. Thus:

H4: The impact of advertising literacy on attitude toward the ads is moderated by social tie. Consumers with higher advertising literacy will have lower attitude toward the ad if the message is received from weak tie than from strong tie.

H5: The impact of advertising literacy on message sharing intention is moderated by social tie. Consumers with higher advertising literacy will have less intention to share ads if the message is received from weak tie than from strong tie.

3. Method

3.1 Stimuli

Advertising Format

We adapt Raman's (1996) suggestion to select two types of advertising messages currently used by the café company. Non-interactive advertising emphasizes one-way communication that might be incapable of receiving consumer's response to firms or advertisings. On the other hand interactive advertising is an advertisement with more interactive features to express ideas, goods or services. After pilot study of message format, an advertising conveys on web page with only texts and pictures was selected as non-interactive advertising. An application of mental test game with brand and product information inside was selected interactive advertising which communicate consumers about product information through playing a game rather than just reading a page of advertising.

Tie Strength

Granovetter (1973) proposed that the strength of a tie is a combination of the amount of time, the emotional intensity, the intimacy, and the reciprocal services which characterize the tie. In this study, strong tie will be defined as the relationship between friends who are met face-to-face, and they are more familiar than weak tie friends. Participants assigned to strong tie group will receive advertising from the teaching assistant of a class they take. On the contrary, weak tie friend is a tentative account created by researcher for sending advertising message to participants in weak tie group, and it is first time that they meet online.

Advertising Literacy

Advertising literacy, scales were adapted from Boush, Friestad and Rose's (1994) and Botvin et al's (1995) works, including skepticism toward advertising and resistance to advertising. The ratings of advertising literacy were measured by a 7-point scale anchoring from not at all to strongly degree.

Insert Table 1 about here

3.2 Dependent Variables

Attitude toward the advertising message scales were adapted from the established scales used by Mitchell and Olson (1981), MacKenzie et al. (1986), and Bezjian-Avery and Calder (1998). Three measurement items are "the advertising is favorable", "the advertising is interesting", and "the advertising is impressive". Intention to share message scales were adapted from established measures developed by Homer (1990) and MacKenzie et al. (1986). The measurement items are "I am likely to share the advertising message I received from my friends" and "I am likely to post the advertising message I received on my wall on the Facebook". All dependent variables are measured on five-point scales anchored from 1 to 5, indicating respondent's level of agreement from strongly disagree to strongly agree. .

3.3 Participants and Procedure

Because coffee is the product that undergraduates and gradate students have adequate buying experience, which enables respondents have certain knowledge to report their attitude or intention in the experiments. As well at the time when research was being designed, some chained Cafés have used Facebook to deliver promotion message that facilitates our research to develop advertisings. The questionnaire informed the subjects that they were in the scenario of interacting with friends on the Facebook. After completing the reading, they were required to complete the dependent measure at their own pace and were acknowledged upon completion of the questionnaire.

Past research found that the majority of Internet user are aged in the mid-20s and holds a bachelor's degree (TWNIC, 2010), thus using students samples is capable of empirical test. We conducted two experiments to test the main and moderate effects proposed in our research separately. In study 1, 100 participants were randomly assigned to either receiving an interactive or a non-interactive advertising from friend. In Study 1, participants were not informed about their relationship with the sender.

In study 2, 246 undergraduate and graduate students at a business school were asked to participate in the experiment to receive partial course credit for a course. A 2 (weak vs. strong tie) ×2 (non-interactive vs. interactive advertising) × 2 (low vs. high advertising literacy) between-subject design experiment was conducted to test research hypotheses. The subjects were randomly assigned to one of the eight conditions, with each condition having subjects between 30 and 31.

To increase reality of receiving online advertising message on the Facebook, the experiment was conducted at a public computer room. All stimuli and questionnaire were presented and collected via PCs. First of all, we use mean score of advertising literacy measurement to part participants into high and low group before they receive the conditions of tie strength and advertising format. A 10-minute introduction to advertising on the Facebook was presented before conducting the experiment in order to ensure that subjects had certain knowledge about online advertising.

4. Results

4.1 Manipulation Check and Reliability

T-test for interactivity of advertising messages demonstrates that participants in different message format condition have different degree of perceived message interactivity. Participants in the interactive advertising condition rated higher interactively (study 1: M=4.31; study 2: M=4.12) than did participants in the non-interactive condition (study 1: M=2.27; study 2: M=2.09), with t-value=24.36 and 21.39 respectively.

Tie strength manipulation check for Study 2 shows significant difference between strong tie (M=4.42) and weak tie (M=2.38), with t-value significant below 0.01. Thus, the manipulation check confirmed the research stimuli were successfully manipulated in the experiment.

Both two measurements of dependent variables possessed appropriate reliability. Cronbach's αfor attitude toward the advertising message is .91 from Study 1 and .90 from Study 2; for message sharing intention is .89 from study 1 and .87 from study 2 respectively. We then average each measurement to produce a signal index for statistical analysis.

4.2 Hypotheses Test

Study 1

Participants rated higher attitude toward advertising message (M = 3.70, SE = .68) when advertising they received is interactive vs. non-interactive (M=3.54, SE= .69), F (1, 100) = 5.34, $p < 0.05$. Consistent with prediction, intention to share advertising was significantly greater in interactive advertising group (M = 3.44, SE = .93) than in non-interactive advertising group (M = 3.13, SE = .89), F (1, 100) = 3.96, $p < 0.05$. Thus, in support of H1a and H1b regarding main effect of message type on communication effectiveness. Participants associated higher attitude toward advertising and intention to share advertising with interactive advertising and lower ratings on advertising effectiveness with non-interactive advertising.

Study 2

Whereas Study 1 examined the impact of message type on advertising effectiveness, Study 2 examined the moderating role of tie strength and advertising literacy. Table 2 and Table 3 show the results of the moderating effect of social ties on receiver's attitude toward advertising message and message sharing intention respectively. An ANOVA model demonstrated that the main effect of social tie on communication outcomes was only significant on attitude toward advertising, F (1, 240) = 4.13, $p < 0.05$, indicating users have higher intention to forward when the message was received from closed friend (M =3.62), and lower intention when message received from weak tie (M = 3.22).

Results show a significant interaction effect of tie strength on the relationship between message type on attitude toward advertising (F (1, 246) = 11.15, $p < 0.01$), indicating interactivity of advertising brings greater impact on attitude toward the advertising when the message was delivered via weak tie, whereas, attitude toward the advertising remained steady across different message type when it was delivered via strong tie. As shown in Figure 2, participants who received advertising from weak tie friend, then non-interactive advertising will bring consumer's attitude toward advertising lower than participants received it from strong tie. Whereas, interactive advertising received from weak tie friend will bring consumer's attitude higher than it received from strong tie. Thus, Hypothesis 2 was supported. Consistent with Hypothesis 2, the interacting effect between tie strength and advertising literacy on attitude toward advertising is significant, F (1, 246) = 6.28, $p < 0.05$, Figure 3 illustrating its interaction direction, indicating participants in strong tie condition remained relative similar degree of attitude toward advertising regardless of their advertising literacy, and its impact was higher than participants who were grouped as high advertising literacy while receiving message from weak tie. Therefore, Hypothesis 4 was supported.

With regard to the causes of consumer's intention to share advertising was affected by main effect from social tie and moderating effect from interaction of advertising literacy and tie strength. Message format has no significant main effect (F (1, 246) = 1.12, $p > 0.05$) and moderating effect (message format ×tie strength: F (1, 246) = 2.13, $p > 0.05$) on message sharing intention. Thus Hypothesis 3 was not supported by the data.

We found social tie and advertising literacy has moderating effect on the consumer's intention to share advertising message (F (1, 246) = 4.78, $p < 0.05$). As shown in Figure 5, when participants were grouped as low advertising literacy, those who in weak tie condition have equivalent degree of message haring intention (M =3.82) as in strong tie (M =3.81),

Whereas, participants with higher advertising literacy have lower intention to share advertising message, particularly, participants in weak tie condition showed greater decline to message sharing information (M =2.61) than who in strong tie condition (M =3.43). Thus, Hypothesis 5 was supported.

Insert Table 2 about here

Insert Table 3 about here

Insert Figure 2, 3, 4 and 5 about here
----

5. Conclusion and Suggestions

5.1 Conclusion and discussion

This study is first step toward integrating tie strength and literacy advertising to investigate the impact of message type on communication effectiveness in Internet advertising field. Based on advertising theory and social capital perspectives, our study focuses on understanding how message format and advertising literacy influence consumer's attitude toward advertising message sharing via Facebook, and how this relationships moderated by tie strength. We conclude our research findings as followings:

(1) Other thing being equal, interactive advertising has greater communication effectiveness: Study 1 confirmed that advertising message designed in interactive format will receive higher consumer's attitude toward an advertising and intention to share it. This finding shows that increase of entertaining features in advertising is beneficial to catch consumer's eyes. Especially, using Internet medium to deliver messages is normal in everyday life, which turns consumers into information overloading (Ho and Dempsey, 2010). To lessen consumer's disregard of advertising via Internet, it is best way to put more interactivity in order to gain better communication effectiveness.

(2) Tie strength is critical to intervene in the impact of advertising message type on consumer's attitude toward advertising message:

Consistent with past researches, this study found that user's attitude toward advertising message is moderated by tie strength. When consumers receive a message from friends belong to strong tie that may give consumer's certain confidence on the source of advertising message, consequently, consumer's attitude toward advertising will keep steady no matter the degree of interactivity of the advertising message.

However, if consumers receive advertising information from friends belong to weak tie, and then their attitude toward advertising message will have big discrepancy in interactive and non-interactive advertising. Namely, Interactive advertising can generate greater attitude toward the advertising, especially when consumers receive information from friends in weak tie where their attitude will be affected by the interesting level of message rather than influence from interpersonal relation. .

(3)Advertising literacy has relatively greater negative influence on advertising effectiveness if advertising message was shared via weak tie.

The research results showed consumer's advertising literacy will decrease his/her attitude toward advertising message and intention to share advertising, and its impact varies with the strength of social tie that consumers received message from. Given message received from strong tie, both consumers who possess low or high advertising literacy will not display discrepant change in attitude toward message, this can be explained by trust from strong tie may lessen consumers doubt or resistance toward the message from close friend. In regard to advertising sharing intention, consumers possess high advertising literacy will have lower intention to share than do low advertising literacy. Most importantly, given source of advertising information is from weak tie, which will trigger high advertising-literate consumers' skepticism and resistance to the advertising, and incur lower communication effectives regarding attitude toward advertising message and intention to share.

5.2 Managerial Implications

Owning to the growing popularity of online social network site, consumers became more and more familiar with on-line advertising such pop-up, banner, skyscraper, or viral marketing via e-mail or Facebook. The greater consumer's exposure to the advertising, the higher possibility they ignore them due to fatigue. The very first step for marketers or advertisers to solve this severe plight threatening advertising effectiveness is to increase interactivity of advertising. Place brand or product information into the interactive advertising presented with funny game mental test could potential make advertising more engaging and interesting to the consumers, in turn to affect consumer's attitude, At best, richer, warmer, exciting, or enjoyable features of brand or products should be blended in with other interactive tools on social networking site (e.g., fans activity, event in question, consumer contest or lottery etc.). By doing so, advertising will be capable of making consumers accept more product information unconsciously.

Given a good design of advertising message benefits to communication, it is still far away from advertising success, because there are plenty of other factors intervening consumer's attitude. According to our research finding, tie strength is crucial to affect consumer's attitude toward advertising. Apparently, using social network site like Facebook to deliver company's advertising without considering tie strength between sender and receiver is vulnerable, which may result in a negative effect of viral marketing that dumping message disturbing consumers (e.g., Phelps, 2004). Companies may consider to manage their social networking group specialized for their brand or product in order to enhance the tie strength among companies and consumers. After consumers have affinity with companies, then the source credibility and trust can increase communication effectiveness of advertising. Whereas, if companies have to use social network of weak tie to advertise their brand or product, then they must be aware of interactivity of advertising message, because the advertising effectiveness will largely decline if advertising itself has no attractive or entertaining features.

Since consumers with higher advertising literacy could discriminate the sales skills in an advertisement. It is important for business to choose channel to deliver advertising, because strong tie can bring receivers' higher trust on message they received and lessen their motivation to resist the advertising from their advertising literacy. In light of our research finding in recipient's trait, it showed that her/his literacy level is interacted with tie strength to affect communication effectiveness of advertising. Past researches have proven that consumers' advertising literacy increases as their experiences or knowledge in advertising increase, which will bring consumer's resistance to advertising.(e.g., Nairn and Berthon, 2003; Goodyear, 1991). Noticeably, getting more forums opened for revealing fact of advertising that will increase consumer's skepticism and resistance to advertising, especially if they received message from acquaintance or stranger in online surrounding. The best strategy to resolve consumer's resistance caused by advertising literacy, companies better use strong-tie network to broadcast their brand or product information, because our research finding showed that participants with high advertising literacy will have lower attitude and advertising forwarding intention. However, other ways such as advertising using transformational message strategy, which conveys more affective elements to increase recipient's emotional response, may potentially reduce trigger of advertising literacy.

5.3 Limitation and Future Research

We try to make our research is in capable of explaining the factors affecting advertising effectiveness of online peer-to-peer marketing, but the results may not necessarily apply in which users share advertisings along with their comments, because how they expound an advertising no matter with pros or cons may affect recipient's attitude. Future research can address situations in which forwarding advertising with user's comments added.

The experiments were conducted using online questionnaire in the computer room, To obtain external validity, future research may conduct an experiment with using users who have user account to process all treatments for the subjects to be tested via Internet, which may improve the subjects' mentality closed to real online auction context, namely, better ecological validity resulting from the ability of research findings to be generalized (Carlbring and Andersson, 2006).

Finally, since there are many other traits of consumers that may influence how they process receiving information, but our research focuses only on literacy advertising of consumers. Future research may examine how source credibility or consumers expertise to affect their attitude or purchase intention.

References

Adler, P.S. & Kwon, S.W. (2002). Social capital: prospects for a new concept. *The Academy of Management Review*, 27 (1), 17-40.

Bezjian-Avery, Alex, Bobby Calder & Dawn lacobucci (1998). New media interactive advertising vs. Traditional advertising. *Journal of Advertising Research*, 38 (July), 23-32.

Botvin, G. J., Schinke, S. P., Epstein, J. A. Diaz, T. & Botvin, E. M. (1995). Effectiveness of culturally-focused & Generic skills training approaches to alcohol & Drug abuse prevention among minority adolescents: two-year follow-up results. *Psychology of Addictive Behavior*, 9, 183-194.

Boush, D. M., Friestad, M. & Rose, G. M. (1994). Adolescent skepticism toward TV, advertising & Knowledge of advertiser tatics. *Journal of Consumer Research*, 21 (1), 165-175.

Brown, J. J. & Reingen, P. (1987). Social ties and word-of-mouth referral behavior. *Journal of Consumer Research*, 14, 350-362.

Bruyn, Arnaud De & Lilien, Gary L. (2008). A multi-stage model of word-of-mouth influence through viral marketing. *International Journal of Research in Marketing*, 25 (3), 151-163.

Carlbring, P. & Andersson, G. (2006). Internet and psychological treatment. How well can they be combined? *Computers in Human Behavior*, 22 (3), 545-553.

Cheng, M.S., Blankson, C., Wang, S. T. & Chen, S.L (2009). Consumer attitudes and interactive digital advertising. *International Journal of Advertising*, 28 (3), 501-525.

EC Times (2009). Facebook is hitting yahoo and became No.2 website in Taiwan, assessed on January 13, 2011, http://www.ectimes.org.tw/Shownews.aspx?id=091113213705

EMarketer (2010), Online ad spend surpasses newspapers, assessed on January 12, 2011, http://www.emarketer.com/Article.aspx?R=1008126

Etzioni, A. (1996). The new golden rule: community and morality in a democratic society. New York: Basic Books.

Goodyear, M. (1991). The five stages of advertising literacy. *Admap*, 32 (April), 19-21.

Graddol, D. (1993). What is a text?. *Media Texts: Authors and Readers: A reader* . Graddol, D. & Boyd-Barratt, O. (Eds). pp. 151-167. Clevedon: The Open University.

Granovetter, M. S. (1973). The strength of weak ties. *American Journal of Sociology*, (78), 1360-1380.

Haythornthwaite, Caroline (2001). Tie strength & The impact of new media. *Proceedings of the 34th Hawaii International Conference on System Sciences*.

Ho, Y. C. & Melanie, Dempsey (2010), Viral marketing: motivation to forward online content. *Journal of Business Research*, 63 (9-10), 1000-1006

Homer, Pamela M. (1990). The mediating role of attitude toward the ad: some additional evidence. *Journal of marketing Research*, 27 (1), 78-86.

Lannon, J. (1985). Advertising research: new ways of seeing. *Admap*, October, 520-524.

Lappé, F. M. & Du Bois, P. M. (1997). Building social capital without looking backward. *National Civic Review*, 14 (February), 119-128.

Levin, Daniel Z., Cross, Rob (2004). The strength of weak ties you can trust: the mediating role of trust in effective knowledge transfer. *Management Science*, 50 (11), 1477-1490.

Li, Hairong & Leckenby, John D. (2004). Internet advertising formats and effectiveness, center for interactive advertising, accessed on January 22, 2010, http://sites.google.com/site/champtec/ad_format_print.pdf

MacKenzie, Scott B., Lutz, Richard J. & Belch, George E. (1986). The role of attitude toward the ad as a mediator of advertising effectiveness: a test of competing explanations. *Journal of Marketing Research*, 23 (May), 130-143.

Mathwick, C., Wiertz, C. & Ruyter, K. (2008). Social capital production in a virtual P3 community. *Journal of Consumer Research*, 34, 832-849.

Marsden, Peter V. & Campbell, Karen E. (1984). Measuring tie strength. *Social Forces,* 63,482-501.

Meadows, R. (1983). They consume advertising too. *Admap*, July-August, 408-413.

Mesch, Gustavo & Talmud, Ilan (2006). The quality of online & Office relationships: the role of multiplexity & Duration of social relationships. *The Information Society*, 22, 137-148.

Meyer, M. H. & Zark, M. H. (1996). The design and development of information products. *Slogan management review*, 37 (3), 43-59.

Mitchell, A. & Olson, J. C. (1981). Are product attribute beliefs the only mediator of advertising effects on brand attitude. *Journal of Marketing Research*, 18 (2), 318-332.

Nahapiet, Janine & Ghoshal, Samantra (1998). Social capital, intellectual capital and the organizational advantage. *Academy of Management Review*, 23 (April), 242-266.

Nairn, Agnes & Berthon, Pierre (2003), Creating the customer: the influence of advertising on consumer market segments – evidence and ethics. *Journal of Business Ethics*, 42 (1), 83-100.

Noel, M., Tichy, Tushman, Michael L., & Fombrun, Charles (1979). Social network analysis for organizations. *Academy of Management Review*, 4, 507-520.

O'Donohoe, S., Tynan, C. (1998). Beyond sophistication: dimensions of advertising literacy. *International Journal of Advertising*, 17 (4), 467-482.

Phelps, Joseph E., Lewis, R., Mobilio, L., Perry, D., & Raman, N. (2004), Viral marketing or electronic word-of-mouth advertising: examining consumer responses and motivations to pass along email. *Journal of Advertising Research*, 44 (4), 333-348.

Raman, Niranjan V. (1996). Determinants of desired exposure to interactive advertising, unpublished doctoral dissertation. University of Texas, Austin, Texas.

Rice, R., (1984). New media technology: growth and integration, in the new media: communication, research and technology, Beverly HillsL (CA): Sage.

Roehm, H. A., & Haugtvedt, C. P. (1999). Understanding interactivity of cyberspace advertising, In Schumann, D. W. & Thorson, E. (Eds.), *Advertising and the World Wide Web*, pp. 27-39. Mahwah, NJ: Lawrence Erlbaum.

TWNIC (2010), 2010 Taiwan internet usage report, access on September 19, 2011: http:*www.twnic.net.tw/download/200307/1001a.doc*

Wellman, B., Berkowitz, S. D. (1998). Social structures: a network approach. Cambridge University Press.

Williams, F., Rice, R. E. & Rogers, E. M. (1988). Research methods and the new media. NY: Free Press.

Table 1- Scales for advertising literacy

Advertising Literacy		
Advertising Skepticism	1.	On-line advertisements tell the truth
	2.	The products advertised on-line are always the best products to buy (R)
	3.	If an on-line advertisement was not true it could not be on the website (R)
	4.	Advertisers care more about getting you to buy things than what is good for you
	5.	On-line advertisements try to make people buy things they don't really need
	6.	On-line advertisements are all about the same not to telling the truth
Advertising Resistance	1.	When seeing an on-line advertisement, I will remind myself that this ad is trying to persuade me to buy ad products
	2.	When seeing an on-line advertisement, I will remind myself that this ad is persuading me to buy advertising products that I do not need

Table 1

Effect of Social Ties on Attitude toward the Advertising Message

Hypothesis	Variable	Group	Mean	S.E.	F	Eta Squared
	Tie strength	Weak	3.39	.102	1.37	.005
		Strong	3.56	.108		
	Message format	Non-interactive	3.20	.098	6.04*	.037
		Interactive	3.76	.098		
H1	Message format × Tie strength				11.15**	.119
	Cell Means					
	Tie strength	Message Format	Mean	S.E.		
	W	NI	2.86	.113		
		I	3.92	.114		
	S	NI	3.53	.132		
		I	3.59	.133		
H3	Advertising literacy × Tie strength				6.28*	.108
	Cell Means					
	Tie strength	Advertising literacy	Mean	S.E.		
	W	L	3.74	.108		
		H	3.04	.110		
	S	L	3.59	.106		
		H	3.53	.106		

*p<0.05; **p < .01

Table 2

Effect of Social Ties on Message Sharing Intention

Hypothesis	Variable	Group	Mean	S.E.	F	Eta Squared
	Tie strength	Weak	3.22	.109	4.13*	.006
		Strong	3.62	.110		
	Message format	Non-interactive	3.39	.111	1.12	.001
		Interactive	3.45	.110		
H2	Message format × Tie strength				2.13	.015
	Cell Means					
	Tie strength	Message Format	Mean	S.E.		
	W	NI	3.18	.109		
		I	3.26	.113		
	S	NI	3.59	.112		
		I	3.64	.118		
H4	Advertising literacy × Tie strength				4.78*	.027
	Cell Means					

	Tie strength	Advertising literacy	Mean	S.D.
	W	L	3.82	.106
		H	2.61	.119
	S	L	3.81	.112
		H	3.43	.111

*p<0.05; **p < .01

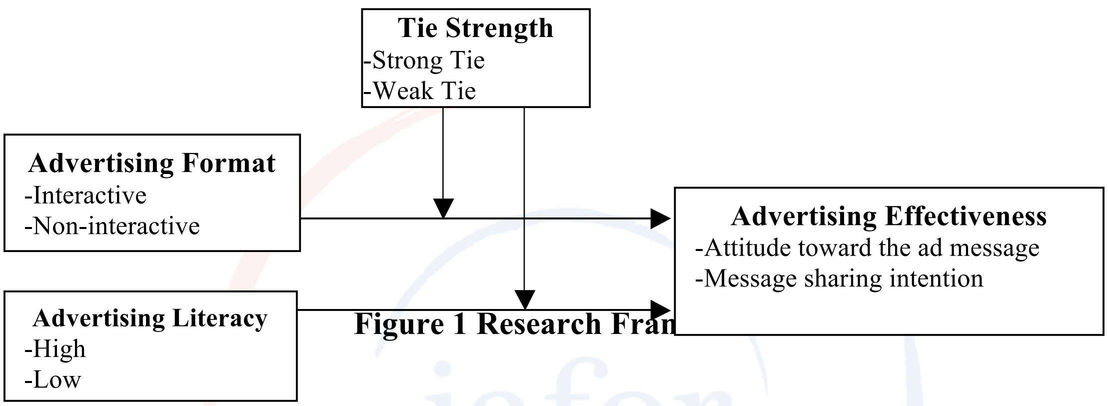


Figure 1 Research Fran

Figure 2- The Influence of Message Format on Attitude toward Advertising Message under Strong Tie versus Weak Tie Condition

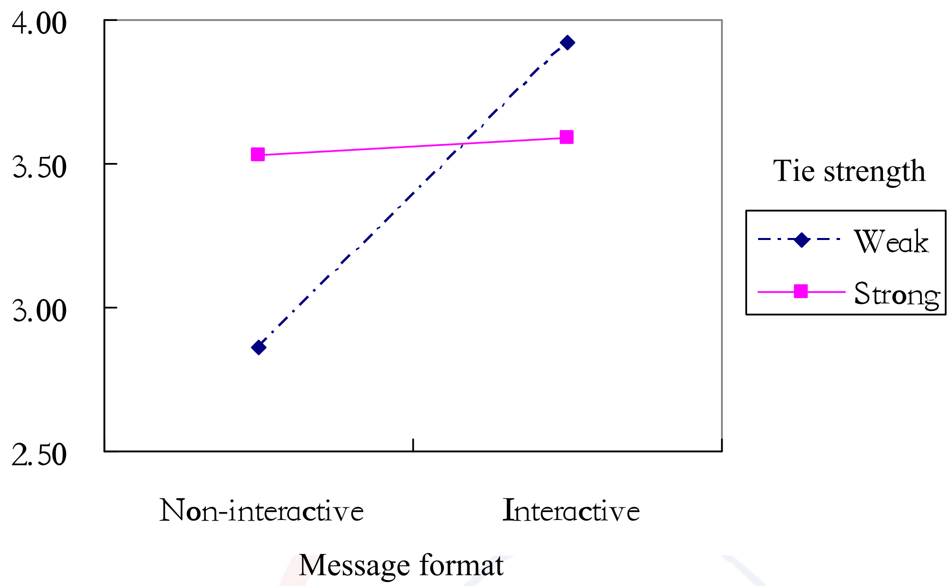


Figure 3- The Influence of Advertising Interactivity on Attitude toward Advertising Message under Strong Tie versus Weak Tie Condition

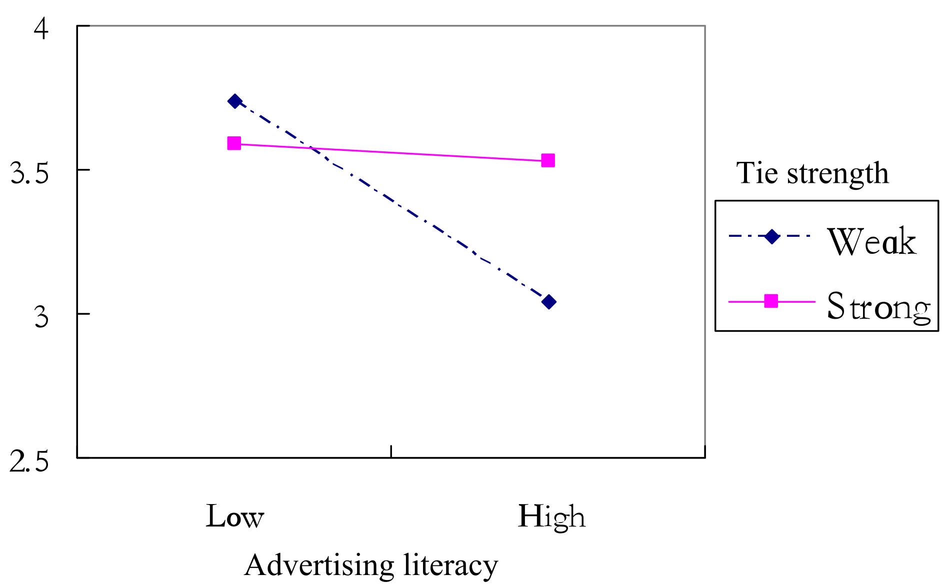


Figure 4- The Influence of Message Format on Message Sharing Intention under Strong Tie versus Weak Tie Condition

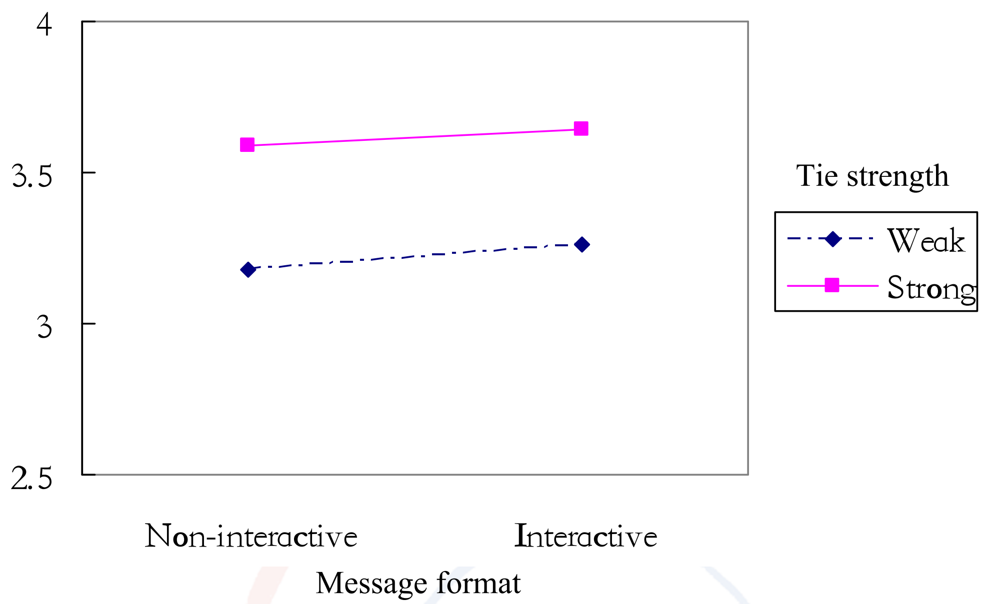
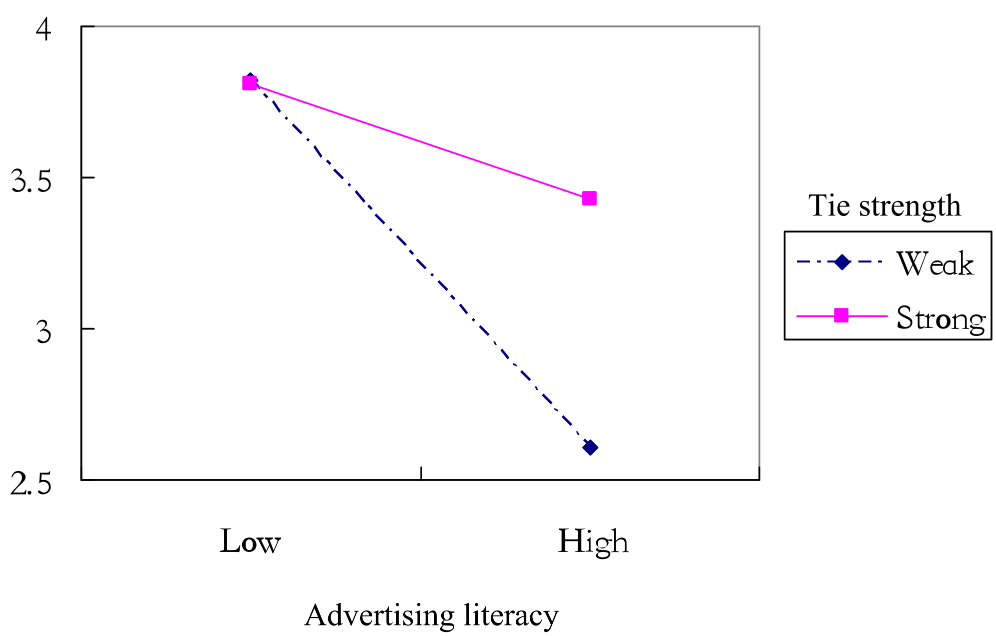


Figure 5- The Influence of Advertising Interactivity on Message Sharing Intention under Strong Tie versus Weak Tie Condition



Impacts of intangible assets on initial public offering of biotechnology startups

Abstract

Using databases of patents and biotechnology startups, this paper analyzes how intangible assets of biotechnology startups affect whether they wish to go public at one point and whether they will really go public in future. Estimation results show that R&D-intensity does not affect owner's intention of IPO. However, a stock market positively values the quality of patents which biotechnology startups possess.

Keywords

Patents, biotechnology, initial public offering, intangible assets, Japan

JEL

O34, O32, O30

1. Introduction

Innovation surveys revealed that legal protection of innovative returns against spillovers is very effective in drugs where innovations are typically standalone, as opposite to systemic innovations such as electronics (Levin et al., 1984; Cohen et al., 2000). For startups which are engaged in biotechnology-related R&D, such as drug discovery, and have little complementary assets, patents play a critical role in creating their competitive advantages (Kollmer and Dowling, 2004; Giuri et al., 2005), and in enhancing their reputation in the business community (Cohen et al., 2000; Nagaoka and Walsh, 2009). Therefore, patents are considered to affect how owners and a stock market value potentialities of biotechnology startups. Furthermore, previous studies highlight that the quality of patents is a key determining factor in firm value. With these advancements in the economics of innovations in mind, this study attempts to analyze how the quality of patents that biotechnology startups possess affect whether they wish to go public at one point of time and whether they will really go public in future.

2. Method

Initial public offering (IPO) can be modeled as value maximization where owners decide startup's going public according to their predicted valuation of the startup in a stock market (Zingales, 1995). Assuming that a binary variable representing IPO, *Y*, takes a value of one when a latent variable, *Y**, indicating how the startup wants to go public exceeds a threshold, and zero otherwise, an owner's decision making whether letting the startup go public can be described as follows.

$$Y = \begin{cases} 1 & if\ Y^* > 0 \\ 0 & otherwise \end{cases} \qquad (1).$$

Owner's intention of IPO is determined through relative value of the expected market value of the firm, *V*, against the current value of the firm, *K*. Assuming *X* to be other factors influential in IPO decision making, *Y** can be described as follows.

$$Y^*=f(V/K, X) \qquad (2).$$

Given that *V* is determined through *K* and intangible assets, *R*, *V* can be described as

$$V=pK+R \qquad (3)$$

where p is an average multiplier of V/K.
Dividing Equation 3 by K yields
$V/K=p+R/K$ (4).
Thus, Y^* can be determined through relative importance of intangible assets of biotechnology startups, R. R can be decomposed into computerized information (e.g., software), economic competencies (e.g., organizational structure and brand), and innovative property (Corrado et al., 2006). Assuming that variance in tangible assets which biotechnology startups have is small, and their intangible assets exclusively consist of their innovative property (i.e., reputation is yet to be established in a market), an econometric model of Equation 2 can be described as
$Y^*= a+bP+cX+error$ (5)
where P denotes patents.

Empirical studies on the impacts of patents on firm value suggest that not only the number of patents, but also the quality of patents, measured by forward citations, scope, claims, litigation, and international applications, has a positive impact on firm value (Lerner, 1995; Lanjouw and Schankerman, 1999; Hall et al., 2005). Therefore, Equation 5 is rewritten as follows.
$Y_i^*= a+b_1SPC_i+b_2Intl_i+b_3Scope_i+b_4Fwdc_i+ b_5Slink_i +b_6Control_i +error_i$ (6)
where *SPC* denotes simple, not weighted, counts of patents held by the biotechnology startup, i, *Intl* denotes a binary dummy for a triadic patent family, *Scope* denotes the total number of IPC codes covered by patents held by i, *Fwdc* denotes annual average of forward citations received by patents held by i, and *Slink* denotes the total number of scientific papers cited by patents held by i. *Slink* is introduced since scientific knowledge or efficient university spillovers are important in R&D of biotechnology, particularly in drug discovery (Narin et al., 1997; Hicks et al., 2001). Control variables are *Estyr*, year of establishment of i, *Size*, the number of employees of i, and *Cat*, business category of i, such as drug discovery and research tools.

Biotechnology startups were defined as firms that were established after 1986, meaning that firm age is under 20 as of 2005, and were engaged in biotechnology-related R&D, such as healthcare, foods, agriculture, chemicals, informatics, and environment. A comprehensive dataset of those firms was collected from *Biotechnology Startups Directory* and *Biotechnology Startups Database* by Nikkei BP. In these databases, 16 listed startups and 236 unlisted startups, as of 2005, were recorded. These databases covered biotechnology-related fields, such as R&D in drugs, foods, research tools (e.g., mice), research supporting services (e.g., bioinformatics), environment, agriculture, and outsourced production (e.g., peptide). Furthermore, the *Derwent Innovations Index (DII)* by Thomson Scientific was used for collecting information of the patent families, that is, a group of patents yielded from one invention through division, continuation, and international applications. The search period extended from 1966 to 2005. Of 16 listed Japanese biotechnology startups, 15 held patents, and 117 of 236 unlisted companies held patents. Among 117 unlisted firms that held patents as of 2005, 85 startups provided information on IPO.

3. Results

Table 1 shows estimation results. Model 1 examines whether startups wished to go public in 2005 and

Models 2 and 3 examine whether they really went public by 2009. Probit model where a dependent variable was *IPO2005* and *IPO2009*, each of which was a binary dummy, was used for estimation. To examine whether startups' intention to go public as of 2005 affected whether they really went public by 2009, the predicted value of how soon startups wished to go public in 2005 was added in Model 3. The predicted value was estimated using ordered Probit model where a dependent variable was *IPO2005timing*, a categorical dummy taking 1 if the owner wished IPO in 2005 within a year, 2 within two years, 3 within three years, and 4 beyond three years or had no idea. Independent variables were the same as independent variables used in Model 1. Thus, coefficients of the predicted variable being significantly *negative* indicate that the variable *positively* affected whether they really went public by 2009. Although variables representing the quality of patents, that is *Intl*, *Fwdc,* and *Scope*, were highly correlated with each other, introducing them alternatively did not affect key findings.

SPC exhibits no significant impacts on whether startups wished to go public in 2005, which coincides with a finding on the US biotechnology startups (Deeds et al., 1997). Simple patent counts represent R&D input rather than R&D output (Hall et al., 1986; Griliches, 1990; Trajtenberg, 1990). With firm size controlled for in the regression analysis, coefficients of *SPC* are expected to present whether startups with relatively higher R&D expenditure for their firm size wished to go public. R&D-intensive startups are considered to finance their innovative activities through equity rather than by debt because of a high risk which they entail and difficulties for a bank to yield a high return. Although this positive relationship was supported by a study on the Japanese electronics startups (Honjo, 2001), it was not supported for biotechnology startups.

As for the quality of patents, *Fwdc* does not affect whether startups wished to go public in 2005, which implies that the quality of patents is difficult for owners to precisely recognize. However, *Fwdc* positively affected whether startups really went public by 2009. This implies that a stock market valued intangible assets of biotechnology startups positively, which is consistent with empirical findings that forward citations represent the quality of patents (Gambardella et al., 2008) and they improve valuation of the firm in a stock market (Hall et al., 2005). The predicted value does not show significant impact on whether startups really went public by 2009, which implies that owners' expectation on how soon the startups would go public is unrelated to a stock market's valuation of the firm. Considering that all variables other than *Fwdc* do not affect whether startups wished to go public in 2005 nor whether startups really went public by 2009, a stock market seemed to value factors other than intangible assets of biotechnology startups such as a debt ratio (Carpenter and Peterson, 2002), which was not available for this study.

4. Conclusion

This study examined whether intangible assets affected IPO of biotechnology startups. Although R&D-intensity of the startup did not affect owner's intention of IPO, a stock market positively valued the quality of patents which startups possessed, which confirms that the quality of knowledge that biotechnology startups create is critical for their growth.

Reference

1. Carpenter, R. and Petersen, B. 2002 Capital market imperfections, high-tech investment, and new equity investment, *Economic Journal*, 112, 54–72.
2. Cohen, W., Nelson, R. and Walsh, J. 2000 Protecting their intellectual assets: appropriability conditions and why U.S. manufacturing firms patent (or not), NBER Working Paper 7552.
3. Corrado, C., Hulten, C. and Sichel, D. 2006 Intangible capital and economic growth, NBER Working Paper 11948.
4. Deeds, D., Decarolis, D., and Coombs, J. 1997 The impact of firm-specific capabilities on the amount of capital raised in an initial public offering: evidence from the biotechnology industry, Journal of Business Venturing, 12(1), 31–46.
5. Gambardella, A, Harhoff, D., and Verspagen, B. 2008 The value of European patents, *European Management Review*, 5(2), 69–84.
6. Giuri, P., Mariani, M. et al. 2005 Everything you always wanted to know about inventors (but never asked): Evidence from the PatVal-EU survey, LEM Working Paper No. 2005/20.
7. Griliches, Z. 1990 Patent statistics as economic indicators: a survey, *Journal of Economic Literature*, 28, 1661–1707.
8. Hall, B, Griliches, Z., and Hausman, J. 1986 Patents and R&D: is there a lag?, *International Economic Review*, 27(2), 265–284.
9. Hall, B., Jaffe, A., and Trajtenberg, M. 2005 Market value and patent citations, *RAND Journal of Economics*, 36(1), 16–38.
10. Hicks, D., Breitzman, T., Olivastro, D., and Hamilton, K. 2001 The changing composition of innovative activity in the US: a portrait based on patent analysis, *Research Policy*, 30(4), 681–703.
11. Honjo, Y. 2001 Do innovative startups really wish to go public? evidence from Japanese electrical manufacturing companies, *Applied Economics Letters*, 8(7), 493–497.
12. Kollmer, H. and Dowling, M. 2004 Licensing as a commercialisation strategy for new technology-based firms, *Research Policy*, 33(8), 1141–1151.
13. Lanjouw, J and Schankerman, M. 1999 The quality of ideas: measuring innovation with multiple indicators, NBER Working Paper 7345.
14. Lerner, J. 1995 Patenting in the shadow of competitors, *Journal of Law and Economics*, 38, 563–595.
15. Levin, R., Klevorick, A., Nelson, R., and Winter, S. 1987 Appropriating the returns from industrial research and development, Brookings Paper on Economic Activity, 783–820.
16. Nagaoka, S. and Walsh, J. 2009 Commercialization and other uses of patents in Japan and the US: major findings from the RIETI-Georgia Tech inventor survey, RIETI Discussion Papers, 09-E-011.
17. Narin, F., Hamilton, K., and Olivastro, D. 1997 The increasing linkage between US technology and public science, *Research Policy*, 26(3), 317–330.
18. Trajtenberg, M. 1990 A penny for your quotes: patent citations and the value of innovations, *RAND Journal of Economics*, 21(1), 172–187.
19. Zingales, L. 1995 Insider ownership and the decision to go public, *Review of Economic Studies*, 62(3), 425–448.

Table 1 Estimated Probit models

Model	1			2			3		
N	81			48			48		
Dep. Var.	*IPO2005*			*IPO2009*			*IPO2009*		
	Coef.	S.E.	Sig.	Coef.	S.E.	Sig.	Coef.	S.E.	Sig.
SPC	0.028	0.062		0.055	0.088		0.047	0.108	
Fwdc	4.175	8.539		5.752	2.608	*	5.649	2.703	*
Intl	0.133	1.769		1.854	2.578		1.920	2.636	
Scope	-0.141	0.082		-0.031	0.070		-0.025	0.085	
Slink	0.102	0.085		-0.002	0.009		-0.003	0.013	
Estyr	0.107	0.093		0.158	0.166		0.159	0.167	
Size	-0.004	0.034		0.017	0.026		0.032	0.119	
Predicted							-1.056	7.989	
Constant	-211.7	185.119		-322.1	334.592		-319.9	332.806	
Log likelihood	-11.610			-9.680			-9.672		
Pseudo R2	0.555			0.396			0.397		

Notes

The level of significance: ** p<.01; * p<.05. The results of business category dummies are not reported. *Predicted* denotes the predicted value of owner's expectation as of 2005 on how soon the startup went public (see Section 3 for detail.).

Risk Assessment and Strategic Analysis with Imperfect Information:

A Case Study

Jerry Platt
Akita International University

Early on the morning of October 4th, 2011, Apple Inc. unveiled the latest model of their iPhone. Consistent with their corporate custom and culture, the company had gone to great lengths to maintain secrecy regarding the product announcement, let alone leaks regarding product features or technical specifications. Apple has long thrived on springing surprises*.

Nonetheless, Hard Candy Cases, a small upstart firm in the San Francisco Bay Area, not far from Apple headquarters (famously at One Infinite Loop, in Cupertino), unveiled protective cases for the new iPhone earlier that morning on their website, and accumulated over $50,000 in customer orders for a "radically redesigned iPhone 5" – orders placed prior to the announcement, by Apple enthusiasts, to complement a product they did not own, had not seen – and, as it happened, did not exist. Relying upon leaked misinformation, Hard Candy Cases had incurred sunk costs and rushed into production in anticipation of a product announcement that never happened.

How *could* they make such a decision?
How *should* they make such a decision?

These questions are addressed by combining publicly available information with a simulation structure featuring subjective assessments of uncertain quantities and their likely correlation structure, derived estimates of decision-maker risk profiles, and the potential benefit of a risk-sharing strategy. The case study is hypothetical, imagining a company in a situation like that described above, and does not offer commentary on any actual firm or decision.

* *[In a sad irony, the world was stunned the very next day by a most unwelcome surprise at Apple, the death of co-founder and iconic business leader Steve Jobs.]*

Background and Problem Description

Your company is a relatively new player in a crowded and fast-growing field, the design, manufacture and sale of cell phone cases. You were attracted to the field by numbers – there were approximately 1.7 billion new cell phone shipments world-wide in 2011, up 9.3% from the prior year. Recognizing that only the more expensive phones are likely to create a lucrative complementary product market for protective cases, you specialize in serving the smart-phone market. As the Appendix indicates, there were nearly half a billion such shipments in 2011, a whopping 57% increase from 2010, and projections are for 35% growth in the next year.

The highest price smart-phones are from Apple, Inc., based on their proprietary iOS operating system. Data (in the Appendix) indicates that 90 million such phones were being sold in 2011, nearly doubling sales from the previous year. Given this data, you focus your firm on providing protective cases for the latest model iPhone, a market-defining product from Apple, Inc.

Steve Jobs unveiled the original iPhone model on January 9th, 2007. It is now 2011, and Apple has scheduled a product announcement for October 4th. It is widely anticipated, but not certain, that a new version of the iPhone will be announced. If so, that would be a fifth iteration of the product since it was introduced 1,705 days ago, suggesting that an iPhone model on average has a new sales life expectancy of approximately 425 days, or 62 weeks. Since there is no assurance that a protective case built for one model will fit the next iteration, you conclude that time is critical in getting your protective case to market as soon as possible, ideally in lock-step with the iPhone.

Unfortunately for you, Apple does not share information on product specifications prior to the announcement. Of course, it has to provide that information upstream in its supply chain, in this instance to Chinese manufacturers. Apple is careful to require confidentiality agreements. Chinese manufacturers, however, in balancing the value of their relationship with Apple against the potential value to others of the information in their possession, weighted by the respective probabilities of being caught or of finding taker, sometimes choose to pass on the specs to interested parties.

You have a supplier in China who has chosen to pass on the specs to you. For case analysis purposes only, put aside the obvious ethical issues involved. Can you trust the source? From an economic standpoint, should you design and manufacture cases to the specifications, in anticipation of the announcement, to gain a first-mover advantage over competitors?

Building a Base-Case Model

The market potential is enormous. An iPhone costs several hundred dollars to buy (or replace), so a typical buyer will want to also purchase a protective cover. Assuming 90 million world-wide sales, and pricing an average cover at $22.22, the market is valued at $2 billion over 52 weeks (setting aside the lagging sales over the trailing 10 weeks of a given model iteration). You presently only hold a narrow slice of the pie, ½ of 1% of the global iPhone case market – but even that projects to $10 million in revenue. However, you believe that the first-mover advantage from acting on the leaked information would translate into a "first-mover multiplier" of 1.20, increasing potential revenue to $12 million. A $2 million bump is tempting.

Your best guess is that there is only one chance in three that the leak will accurately match the upcoming Apple announcement. The protective case you envision would sell at $35, with a variable unit cost of $13.13. You estimate fixed operating costs of $50,000 for the mold to match the leaked specifications, and $300,000 that would be incurred regardless for a lathe, rental space, and salaried personnel. An initial run prior to October 4th would be 50,000 cases. From these estimated values, you calculate that:

Units Sold | Leak = True:	1.2 * $10M / $35	= 342,857
Units Sold | Leak = False:	1.0* $10M / $35	= <u>285,714</u>
Units Sold via First-Mover Advantage:		57,143

Sunk Cost | Pre-Announcement Runs: $50,000 + $13.13 * 50,000 = $706,250

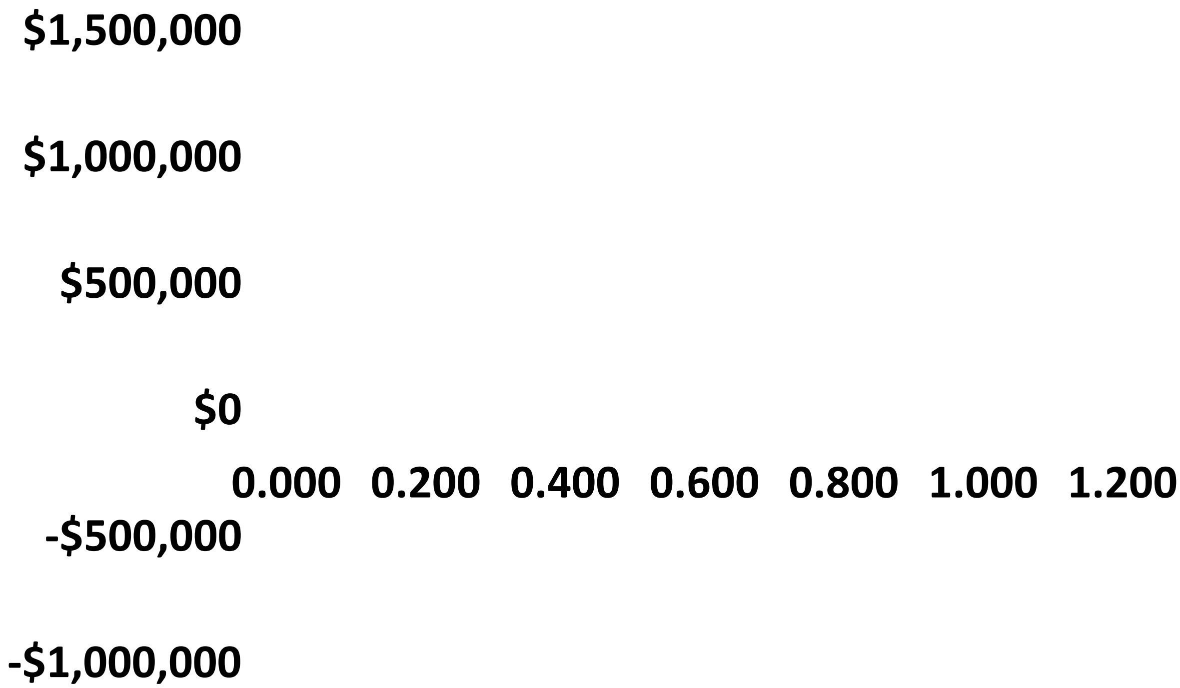
<u>Operating Profit | Leak = True</u>		<u>Operating Profit | Leak = False</u>	
Revenue	$12,000,000	Revenue	$10,000,000
Cost of Goods Sold	<u>$4,500,000</u>	Cost of Goods Sold	<u>$3,750,000</u>
Gross Profit	$7,500,000	Gross Profit	$6,250,000
Fixed Costs	<u>$350,000</u>	Sunk Costs	<u>$706,250</u>

Operating Profit	\$7,150,000	Operating Profit	\$5,543,750

There is a 1/3rd chance or realizing the differential in gross profits (\$1, 250,000) and recovering the variable post per unit of \$13.13 for each of the 50,000 cases in the initial run (\$656,250), for total value of \$1,906,250. The expected value equals \$635,417 – which is less than the sunk cost of \$706,250. The base case has a net expected value of -\$70,833, so you would reject the project on this basis.

Incorporating a Little Uncertainty

You realize that your prediction that there is a 1 in 3 likelihood that the leak is accurate amounts to little more than a hunch. Pressed further to think about your source, their incentives, Apple's inclinations, and whatever else might impact your assessment, you decide to refine your probability statement. In particular, you decide to model the probability as a random draw from a triangular distribution with lower limit = 0, mode = 1/3, and upper limit = 1. Given one of the model parameters now is uncertain, you decide to simulate the process with 1,000 iterations. The resulting net expected values are plotted below against their cumulative probability of occurance. The 50th-%tile is positive, at +\$70,672, although the mean net expected value remains negative. It has become a bit less clear what to do!



More Fully Reflecting the Uncertainty

You decide this merits more careful consideration. Reflecting further, you realize that there is more uncertainty than just the probability that the leaked information is accurate. Among the many possible sources of uncertainty, you decide that two are particularly important to model:

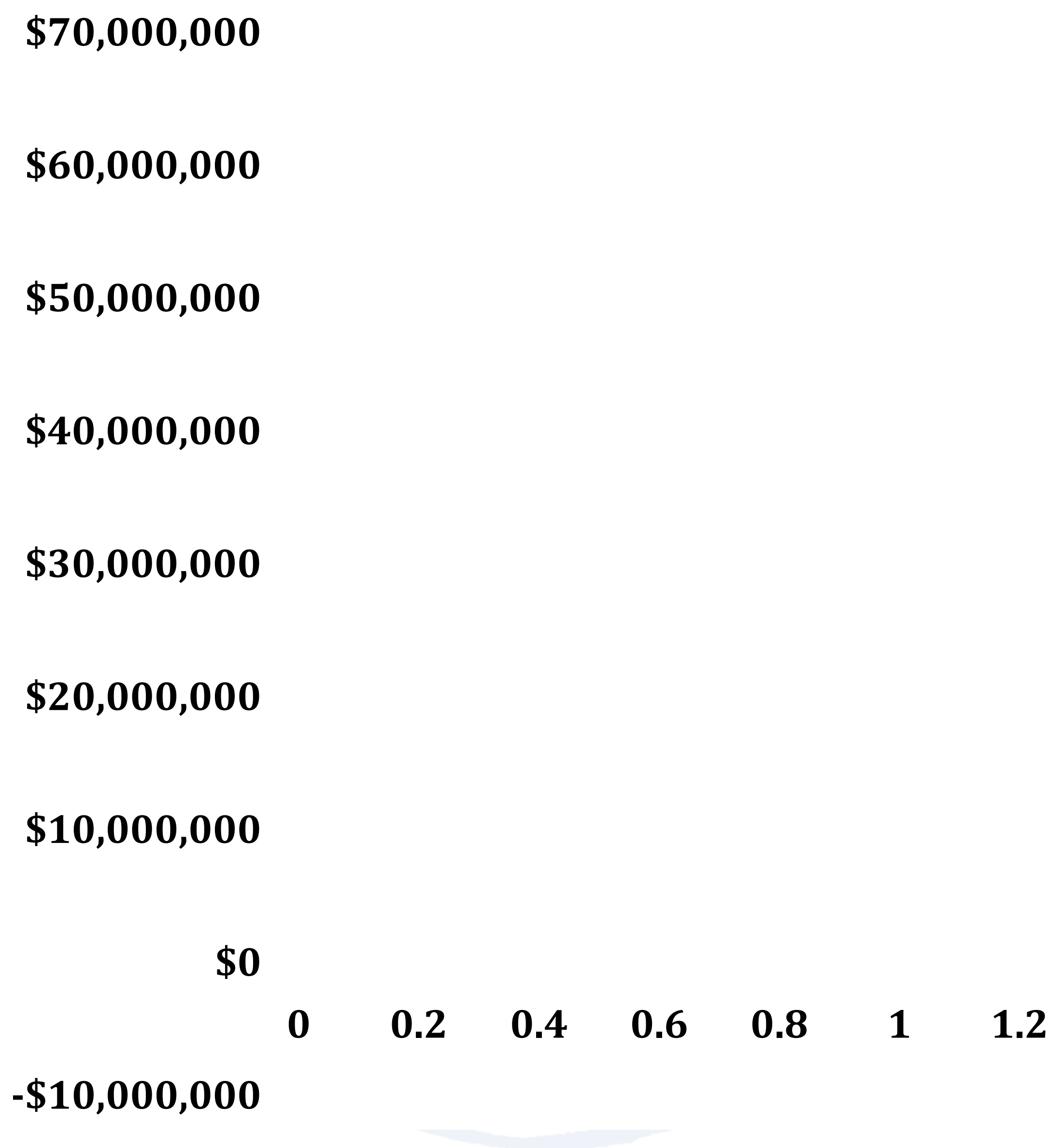
- The total market size, which you have estimated at $2 billion.
- The first-mover multiplier, which you have estimated at 1.20.

Your beliefs regarding these unknown quantities would not be accurately portrayed by any symmetric distribution, so you need to do something more than estimate a standard deviation for each. After some thought, you decide that you could estimate the lower quartile (25^{th}-%tile, or Q1) and upper quartile (75^{th}-%tile, or Q3) for each, in addition to the best guess (Q2) you already supplied. The generalized lognormal distribution generates a continuous probability distribution from input parameters (Q1, Q2, Q3).

You decide that your subjective beliefs regarding these two variables are best represented with parameters ($1.5 Billion, $2 Billion, $3 Billion) for total market size, and by (1.00, 1.20, 1.50) for first-mover multiplier.

Thinking this through raises another concern for you. It seems plausible that the first-mover advantage may be greater the larger the market, so these two unknown quantities may be correlated. If so, and if the correlation is not taken into account, any simulation results may be highly misleading.

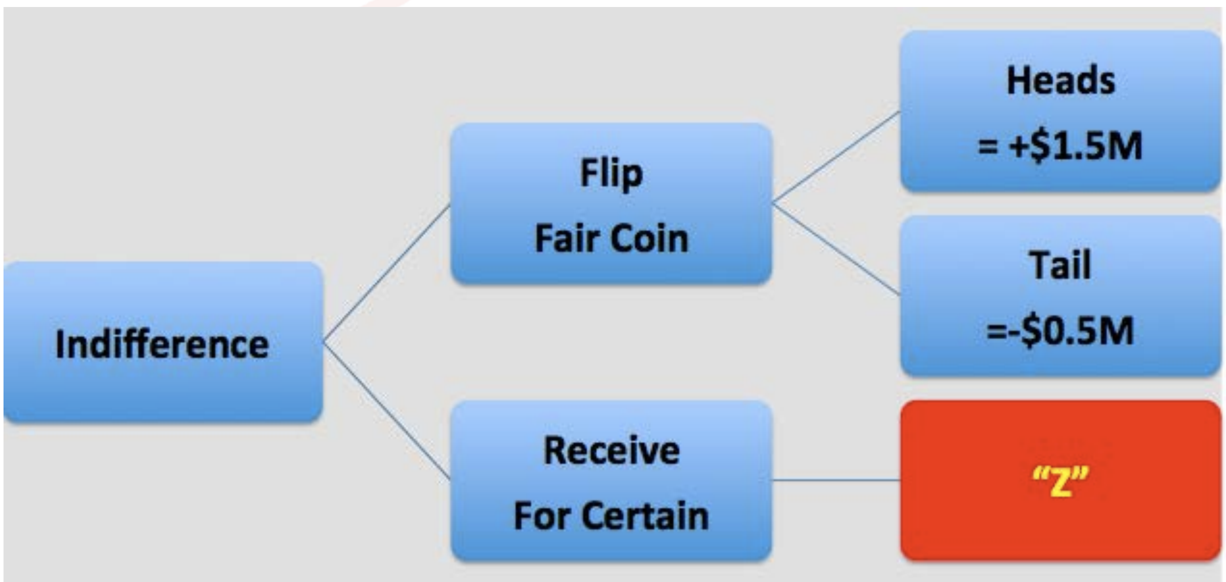
You focus on your Q3 estimate of a $3 billion market; if this were in fact true, you ask yourself, would you still think 1.20 was your best guess for the first-mover multiplier? If so, then there likely is no correlation between the two variables; however, if your revised best guess for the advantage would be higher than 1.20, then there is a positive correlation between the variables, and if lower than 1.20, a negative correlation. This new best guess, which is called the conditional median, provides a means to estimate the implied correlation between the two subjective probability distributions. The estimate is exact for normally distributed variables, and highly accurate in a situation like this, where both variables are only slightly skewed and in the same direction. You believe the conditional median would rise to 1.30, implying a correlation of +0.38. The simulation run now has three random variables, with a structural correlation between two of them. One thousand iterations yield the distribution of net expected values shown below. Roughly, there is very high likelihood the result will be near break-even, but a very high possible outcome – albeit with very low probability. The distribution is highly skewed in the positive direction, with median = +$64,902, but a mean of +$1,519,540, and a whopping $7,414,417 standard deviation. The lower quartile estimate is -$461,090, but the upper quartile estimate is +$1,426,643. This venture becomes more tempting as we add uncertainty!



Adjusting for Risk Tolerance

Even though both the median and mean are positive now that the model more fully reflects your honest assessment of the uncertainties involved, you are uneasy about acting on the leaked information on this basis. You are hesitant because there is so much inherent uncertainty, because the possible range of outcomes is so wide, because there is an estimated 25% probability of losing $461,090 or more. Suddenly, you understand that you are not an expected value decision maker; like most people, you are averse to risk.

To help clarify your thoughts, you pose the following hypothetical. You pretend a fair coin is about to be flipped; if it comes up heads, you win $1.5 million, but if tails you lose $500,000. Clearly, the expected value is ½ of the outcome if heads plus ½ the outcome if tails, or +$500,000. Given an out, would you consent to play the game? Some people would not; you decide that you would. Therefore, the game has value to you greater than $0. Would you pay more than $500,000 for the opportunity to play? No way; you are not a risk-seeker. Would you pay exactly $500,000? No again; your recent instinct that you are not an expected value decision maker has been reinforced. So how much *would* you pay to play the game? Equivalently, if somebody offered to buy your right to play from you, what is the lowest price you would accept? Let's call that value "z". Then the choice becomes:



After some deliberation, you decide that you would sell your right for $200,000 ("z" = +$0.2M). This for you is the "utility", or value, of the game.

Since you are indifferent between the two paths in the game, it follows that the expected utility, or E(U), of playing the game must satisfy the equation:

E(U of +$0.2M) = ½ * E(U of +$1.5M) + ½ * E(U of -$0.5M)

This format is of course similar to your base case for the actual problem:

E(-$70,833) = 1/3 * E(Net Value of +$1,906,250) + 2/3 * E($0) - $706,250.

What is missing is a transformation from the monetary unit scale to a utility scale. Any function $U[x]$ satisfying both $U'[x] > 0$ (i.e., upper-sloping) and $U''[x] < 0$ (i.e., at a decreasing rate) can serve as a utility function. For example, $U(x) = SQRT[x]$ would suffice. However, some choices have more desirable properties than others, and a particularly appealing choice is:

Exponential Utility Function: $U[x] = -exp^{\wedge}(-x/r)$ where $exp = e = 2.718$.

Substituting in the hypothetical game above,

$$U[\text{“z”}] = .5 * U[\$1.5M] + .5 * U[-\$0.5M] \rightarrow U[\text{“z”} < \$0.5M = \$0.2M]$$

so that, given $U[x] = -exp^{\wedge}(-x/r)$:

$$-2.718^{\wedge}(\$0.2M/r) = .5 * -2.718(\$1.5M/r) + .5 * -2.718^{\wedge}(-\$0.5M/r)$$

Solving for the only unknown in the above equation, your risk tolerance coefficient $r = -1.02$. Finally returning to the problem at hand, given your r, the expected utility of the uncertain prospect is estimated at \$1,564,147. Transforming back to monetary units, the certain-equivalent value of the undertaking equals \$115,255. Furthermore, the 95% confidence interval around the uncertain but risk-adjusted net value of taking the gamble and constructing protective cases prior to the announcement ranges from +\$57.047 to +\$409.911. As the risk-adjusted probability of a positive expected value is very high, you now are inclined to roll the dice. *But…*

A Risk-Sharing Scenario

Suppose a rival firm received the same leaked specs, and also is considering a pre-emptive strike by making cases in anticipation of the announcement. You know the CEO of the rival firm, and believe her to be more risk-averse than you. Thinking back to your hypothetical toss of a die, you estimate she would sell such an opportunity for only $100,000, half your asking price.

For simplicity here, assume she has done analysis identical to yours, resulting in the same risky expected net value of +$1,519,540 and standard deviation of $7,414,417. Whereas your "z" = +$0.2M resulted in a risk tolerance coefficient you estimated at $1,564,147 and certain-equivalent profits of +$115,255, her "z" = +$0.1M implies a risk tolerance coefficient of $1,110,450 and certain-equivalent profits of -$9,030. This tells you that this competitor is not likely to act on the leaked information. It also suggests you have an opportunity to off-load risk without reducing certain-equivalent value – the financial equivalent of a free lunch!

Using optimization software, you deduce that you could enter a partnership with this rival, with her taking approximately 1/3rd the business (and risk). She will derive a positive certain-equivalent value and yours remains unchanged; however, your risk exposure, as measured by the standard deviation of more than $7 million, has been reduced to less than $4 million.

	You	Them
Share	66.83%	33.17%
RiskTolCoef	$1,564,147	$1,110,450
EMV	$1,015,434	$504,106
SD	$4,954,693	$2,459,724
CEQ	$115,255	$10,084
TOTAL VALUE	$125,339	

Postscript

Back in the real world, competitors chuckled when the bold gamble by Hard Candy Cases backfired. They were chuckling less shortly thereafter, upon realizing that the ambient light sensor on the iPhone 4S had been moved a few millimeters to the left – rendering their current inventory obsolete. Meanwhile, by months' end the internet leaked "designs" on the *next* iPhone…

Appendix

Worldwide Mobile Communications Device Open OS Sales to End Users by OS (Thousands of Units)

OS	2010	2011	2012	2015
Symbian	111,577	89,930	32,666	661
Market Share (%)	37.6	19.2	5.2	0.1
Android	67,225	179,873	310,088	539,318
Market Share (%)	22.7	38.5	49.2	48.8
Research In Motion	47,452	62,600	79,335	122,864
Market Share (%)	16.0	13.4	12.6	11.1
iOS	46,598	90,560	118,848	189,924
Market Share (%)	15.7	19.4	18.9	17.2
Microsoft	12,378	26,346	68,156	215,998
Market Share (%)	4.2	5.6	10.8	19.5
Other OSes	11,417.4	18,392.3	21,383.7	36,133.9
Market Share (%)	3.8	3.9	3.4	3.3
Total Market	**296,647**	**467,701**	**630,476**	**1,104,898**

References

http://www.businessweek.com/magazine/the-shadowy-world-of-iphone-cases-10132011.html

http://www.technobuffalo.com/companies/apple/iphone/if-theres-no-iphone-5-why-is-this-case-manufacturer-making-50000-cases-for-it/

http://online.wsj.com/article_email/SB10001424052748704858404576134270578350298-lMyQjAxMTAxMDEwMDExNDAyWj.html

http://articles.businessinsider.com/2011-10-14/tech/30278294_1_iphone-protective-cases-businessweek

http://www.gadgetmac.com/news/2010/9/2/hard-candy-cases-already-producing-cases-for-ipod-touch-4g.html

http://gigaom.com/apple/cell-phone-market-bigger-than-we-thought

http://www.ibtimes.com/articles/214762/20110915/iphone-5.htm http://macdailynews.com/2011/04/07/gartner-microsoft-windows-phone-market-share-to-surpass-apples-ios-in-2015/

"The Global Political Economy - Challenges, Management and Prospects"

Dragana Mitrović, PhD.

Full time Professor

Faculty of Political Sciences

University of Belgrade

dragana.mitrovic@fpn.bg.ac.rs

Jove Ilica 165, 11000 Belgrade, Serbia

+381 64 199 22 37

How Strong will the Global Economy be?

"The Global Political Economy - Challenges, Management and Prospects"

Dragana Mitrović, PhD.

Full time Professor of Political Economy

Faculty of Political Sciences

University of Belgrade

The future of the global economy seems to be less and less foreseeable for analysts, business communities, decision-makers and general public, which only makes the current global economic crisis deeper, as growing uncertainty and pessimism thus become one important part of the very crisis. This crisis has not only severely shaken up the totality of the current global political economy, but also structures, institutions and rules through which the global economic system has been functioning. That is why we need to analyze the major players, the dominant structures and institutions and processes that will influence the future of the global (political) economy.

The economic performance of the global political economy through international financial and monetary system, global investment, production and trade, as well as its political framework: structures, rules and relations between the participants that create the existing order, has proved to be in a deep crisis. The crisis is created by dire results of its both wings, but it has been acknowledged and deepened when both proved to be cracked - incapable to offer solutions, either in technical or in strategic terms. The key global financial institutions found themselves penniless and powerless, with no mechanisms, ideas nor authority to deal with the emerging and soon after blazing global crises. Their performance was already heavily criticized; even their very existence questioned at the time when the global crises broke out. The paradox was that their saviours were those countries previously suffered by their "assistance" or those who largely avoided or ignored their harmful dictates. The bill for the liquidity inflow came with the demands and the following actions towards "recognizing the new reality" of the rising economies and their determination to share – if still not the adequate, at least bigger - part of the power alongside with the responsibility and involvement[1].

National governments have been seen by their citizens as incapable and corrupt, alienated, manipulative and distrustful. Strong and continuing protests, pulling money out of banks, electoral changes in many OECD countries, etc., have been enough convincing proof of this statement. Being in a tight embracement with the local representatives of the global financial oligarchy is exactly why they failed to investigate and take legal actions against those who breached the laws or damaged the general interest by premeditated criminal activities in the financial sector. Instead - changing the laws to make them more suitable and legal for frauds, proved to be their preferred way of reaction. And yet, the way to challenge them within the existing political systems, in the so called "mature democracies"

[1] "Long-sought IMF voting reform takes effect", *AFP*, March 4, 2011, Available at: http://news.theage.com.au/breaking-news-world/longsought-imf-voting-reform-takes-effect-20110304-1bhgo.html

proved to be highly inefficient – even in societies where non-governmental sector and social activism has long and successful tradition, there seems to be no social mechanisms for such actions.

The crucial point for this analysis is the decline of the USA hegemonic position as it is the corner stone of the post WWII polit-economic order that after 1989 became global. The USA proved to be less and less capable to sustain its global leadership, especially as the later has been followed by the paradoxical pattern of decreasing economic potential and growing overstretched military interventionism. Neoconservative orientation that left its real economy crippled and its work force indebted, unprotected, socially alienated, de-unionized and jobless gives little space for optimism and tiny room for recovery. The expressed weakness of its political structure to deal with the offenders that created the crisis and its – difficult to hide - actual dependency on the financial oligarchy, would only add to the deepness of the American political, economic and social crises.

The recession of the global economy's engine - that USA economy, in spite of what was mentioned - will continue to be and negative influence of its financial institutions that dominate the global finance, will continue to jeopardise the global economic stability and probably provoke several new waves of the crisis in an attempt to transfer the costs of it to other regions and national economies. At the same time, the USA will continue to boldly impose its presence in different, but scarce, prosperous regions or economies and force its partners and collaborating countries into different ways of integrative partnerships. The latest TPP issue with pressuring Japan into not transparent and dubious agreement within the APEC, but with the world biggest exporter and second biggest importer – China - out of it, adds another picture to this gloomy kaleidoscope. Jumping into East Asia Summit initiative, revitalizing its 50 years old military alliances with New Zealand and Australia with the announcement of opening the first military base on the territory of the later, and all that as part of its strategic repositioning from the Middle East to Asia-Pacific since 2008[2], with the obvious attempt to gain some free–ride impetus of the regional positive trends and continue to contain China.

The growing weakness of the Euro zone (EMU) performance, but at the same time its concept as well, will trouble EU for the time being and even challenge some of its basic values and relations. At the same time it is revealing deep crises within it[3]. The general mistrust of the public, expressed in recent different, but still similar protests across Europe, pointed that citizens of the EU member states were demanding answers and solutions from their national governments, not the EU institutions. Further, they proved not to trust those governments, as see them as political elite that was providing space for the financial elite's "special operations" on the expanses of the citizens, that are now called to pay back the imbalances, debts and irresponsible and incapable governance by slaving themselves to the very bankers that gambled with everybody's assets into dire straits of the crisis, including gaming with the obvious sub-prime debts of Greece. Instead of writing them off, they kept pressing political "mechanics" and mechanisms to push real businesses and employees, students and whole societies towards life in poverty and debt slavery of modern times. How they see the very essential value of the European civilisation and thus EU – democracy – was shown by the aversion and astonishment caused by Greek premier Papandreou's

[2] Murray Hiebert and Kiet Nguyen: "President Obama Will Announce Increased Marine Presence during Australia Visit", *Critical Questions*, the Center for Strategic and International Studies (CSIS), D.C., November 15, 2011.

[3] http://www.stratfor.com/weekly/20110627-divided-states-europe

intention to call a referendum on the proposed austerity measures[4]. So, like in the USA, the elected political elite was not protecting public interest or specific interest of their electoral, but interests of the "1%" – financial elite.

The crisis also revealed deep distrust and division between the "two blocks" within the EU, that some already call North-South division. One block that is lead by Germany, which most successfully orchestrated the functioning of the EU structures, institutions and rules for its own sake, while keeping them weak enough at the same time. The other group – represented by Greece and other "dolce vita" members of the EU - that legitimately brought into EC, later Union, all parts of their cultures, including business culture – were, with Euro, put in a defenceless situation before the booming German export without sovereign currency policy tools, including depreciation of their national currencies, that, kept leading them into growing deficit. "Beggar thy neighbour" was not accepted among EU policies.

At this point, such behaviour continues while causing, at the same time, heated criticism and accusations from the leftist and few independent analysts, as well as more civilian protests. Chancellor Merkel, at her side, leads Germany towards (although for the time being supported by France) more and more unilateral positioning and behaviour that demands one rule for the ECB (strongly opposing the monetization of the dept bonds), while at the same time aloud its central bank to pursue to same policy on the national level. The latest shockingly low purchasing of the German dept bonds (35% at late November 2011) showed how her leadership was trusted by the markets and even more – raised fears how the other bonds, issues by less stabile and confident members of the EMU and EU, would go on a market.

Some analyses argue that euro bonds will have to be backed by gold to the considered necessary level that, inevitably, later will lead towards the establishment of the new currency(ies) backed by gold to the needed level[5], that will to some point lead the world economy back to the point where it was in 1971 when USA left golden standard and demolished the corner stone of the Breton-Woods institutions.

China's continuous rise, India's[6] and ASEAN's growth[7], as well as Japan's early recovery (jeopardised by the weakening US$ and record yen rate) will contribute to the intraregional Asian trade and more independent Asian positive trend[8]. The six major ASEAN countries, followed by the others, have fully recovered from the impacts of the global economic crisis, with medium-term growth prospects returning to the previous - pre-crisis levels. According

---

4 Schwartz, D., *CBC News* November 1, 2011, "Papandreou's referendum gamble", Available at: http://www.cbc.ca/news/world/story/2011/11/01/f-greece-bailout-uncertainty.html.

5 http://rt.com/usa/news/steve-forbes-new-gold-standard/
http://www.forbes.com/sites/greatspeculations/2011/03/30/china-nudges-world-closer-to-new-gold-standard/

6 India's growth rate averaged around 7% since 1997 as it was able to keep its economy growing at a high rate even during the 2007-2009 recessions, managing a 9.7 % growth rate in 2010.

7 „ASEAN countries returning to pre-crisis growth", OECD Development Centre, 2011/12 *Southeast Asian Economic Outlook*, Available at: http://www.oecd.org/document/2/0,3746,en_2649_33731_46367966_1_1_1_1,00.html

6 „Report: Emerging Asia Well Placed to Handle Volatile Global Economy", *2point6billion.com* (Online) Available at: http://www.2point6billion.com/news/2011/11/23/report-emerging-asia-can-largely-withstand-external-shock-10449.html

to the different analyses, economic recovery is underway across the region, as GDP growth will average 6% annually over the period of the next five years. Stronger regional integration and determent sovereign efforts are widely seen as capable to deliver more balanced and long term sustainable growth in the whole region.

There are numerous persuasive and continuous proofs of the rising China's power as one of the most impressive phenomenon of the world at the period between two centuries and two millenniums. The domain of this phenomenon is wide – from production and trade, financial, cultural, ecological, to those in energy sector, security, military and geopolitics. By becoming one of or the most important participants of the existing structures, agreements and relations on the regional and global level, but also initiator and sponsor, restaurateur or constructor of many new ones – that are built on a very different principles than those that dominate our world – PR China has made enormous impact on its close and wider environment, as well as on the global one. That impact is unprecedented one for a country that undoubtedly has only features of the regional power and that lacks the main characteristic of the global power: military might and through doctrine defined determination to use it to impose certain ideological and interest-based discourse of the political, economic and security reality.

While realizing its „reform and opening up policy" China – by achieving the longest and highest continuous economic growth in the modern economic history - changed from the autarchic and command economy first into global manufacture, than the biggest industrial manufacturer[9], the biggest exporter and the second biggest global importer, state with the major currency and gold reserves[10], but also one which language has been studied by the most numerous people around the globe[11], one of the biggest recipient of the FDI, third country that sent crew into space[12] and which created its own satellite navigation system[13]. China achieved all of these during a relatively short period of time, starting from the very low point and while possessing relatively limited sovereign resources. Also, it managed to accomplish the mentioned in the global ambient of the absolute domination of the USA, the super-power that comes from a different value and identity discourse – and these made its achievements even more outstanding. On the other side, numerous and serious challenges to the sustainability of such growth, development and "peaceful rise of China", its social prize, even its ultimate goal – are topics of the numerous analyses and different interpretations, that go from seeing it as a chance for all to an alleged threat to near neighbourhood or global ecological, energy or production balance.

Beyond vigorous development of the economic co-operation (from trade to investments) with almost all the countries around the globe, China at the same time has practiced principle, but flexible and pragmatic, peaceful foreign policy, presenting itself as a benevolent and constructive actor in international relations, that contributes to peace building, development and stability – in the neighbourhood, in Asia-Pacific, with the other developing countries, especially rising powers within the BRICS, with major powers, as

[9] „China promising to be No.1 manufacturing country", People's Daily Online, http://english.people.com.cn/90001/90776/90884/6473390.pdf

[10] According to the official sources, they were worth 2.6 trillion US$ in 2010.

[11] Part of the obvious Chinese influence was obvious in getting the organization of the Olympic Games (2008), Asian games (2009) and World Expo (2010), what China performed superbly, showing the world the achievements of its reformist attempt.

[12] "Chinese Space Program", http://factsanddetails.com/china.php?itemid=385&catid=10&subcatid=67

13 Wang Guanqun, »Chinese GPS moves closer«, 2010-06-04, Xinhua News Agency, http://news.xinhuanet.com/english2010/china/2010-06/04/c_13332853.htm

well as through the OUN system. Through this process China has strengthen its international position and its "soft power" to the level that many analysts see as an unprecedented in its long history or as equal to the one it had had in the XIV century. Our understanding is that unique phenomenon of the Chinese development, and power grown upon it, are primarily focused on the realization of the internal strategic goals of the Chinese "socialist modernization", and that the outside effects of that project are functionalized to serve the primal aim – rising the quality of life of one billion and three hundred million Chinese citizens.

China within the BRICS, Shanghai Cooperation Organization, East Asian Summit, ASEAN+1, ASEAN+3, G-20, even G-2 and its regional and, in some aspects, global empowering, will tend to form the block to reform and eventually alter the current financial, monetary (new currency), trade and general global order, without an aspiration to lead it. Considering itself as developing country and the Third World country, and at the same time having some major economic power's features, China seems to see itself rather realistically, and does not like to bee seen as an exclusive USA partner in solving the global issues, but preferably as part of the rising economies' block that wants redistribution of the global wealth and power, in accordance with the new reality – sizes of their economies, population, etc. By financing American deficit and USA dollar China showed its' constructive and realistic stand that in the nearest future preserving the existing system would be the cheapest solution, while in the middle and the long term future the new reserve currency or currencies should be introduced[14]. Meanwhile, the key international economic organizations should be transformed towards the bigger representation and capacity to serve the world majority – the Third World countries and their citizens. China, together with the BRICS will strongly engage in their transformation within.

During the past fifteen years Russia has made an obvious and strong recovery from its devastating transition experience. The economy had averaged 7% growth since the 1998 resulting in a doubling of real disposable incomes and the emergence of a middle class, after the impoverishment and despair of the wild privatization and liberalization of the economy during the 1990s. In August 2007 average employed Russian received salary of approximately 540 US$ comparing to one of 65 US$ in 1999, which meant that income was growing faster than economy, that also grew some 6.5 time compared to the country's GDP value in 1999. Apart from the world energy market, the crucial factor for this achievement was Putin's determination to put under state control entire country's resources, weather state owned or criminally privatized one. Also, all resources were integrated into the tool of re-establishing Russia's might abroad.

The legacy of the two Putin's presidential mandates was also that Russia paid most off its foreign debt in 2005. The capital account also turned positive in 2006, with net inflow of $6.1 billion, unlike the strong, opposite trend during the 1990s. Also, from July 1, 2006, the ruble is convertible again for both current and capital transactions. Foreign direct investment flows doubled in 2006 to an estimated 31 US$ billion from 14 US$ billion in 2005, but it still takes a way to get cumulative figures of the other BRICS, as its cumulative value stood at 300$ billion in 2010. Russia's balance of payments has been showing strong and increasing surplus[15], although based almost entirely on the global oil price increase.

[14] Sule, A. 2011, `BRICS can build common currency', *China Daily European Weekly*, [Online] Available at: http://usa.chinadaily.com.cn/opinion/2011-04/08/content_12292017.htm.
[15] It grew from 58.6 US$ billion in 2004 to 95.3 US$ billion in 2006 and 71 US$ billion in 2009.

Along with expanding the exploration, extraction and export of the natural resources, Russia has tried to focus on its industry capabilities, including military and space programs.

In 2009 Russia was the world's largest exporter of natural gas, the second largest exporter of oil, and the third largest exporter of steel and primary aluminium. The other, less competitive part of its economy - heavy industries remain dependent on the domestic market and still needs massive investment in its technological modernization. This reliance on commodity exports makes Russia vulnerable to swings in global commodity prices - that was harshly proved during 2008-09. The government since 2007 has focused on an ambitious program to reduce this dependency and build up the country's high technology sectors, especially to vitalize its space and military programs, highly relying on the fact that Russia is holder of the 500 US$ billion foreign currency reserves[16], the world's third largest. High oil prices once again backed Russian growth in the first half of 2011.

The potential for future economic development in Russia is huge, but the country still has a lot of economic and institutional problems that need to be sorted out. Russia's long-term challenges include a shrinking population and workforce, high level of corruption, neglected infrastructure, need for large investments[17]. FDI is growing again, but investors could easily be discouraged by outdated infrastructure, corrupt officials, insufficiently enforced legislation. Russia, re-emerging as global power will for sure be challenged by the enormous needs of its' - in transition period devastated - economy and social institutions, but its newly consolidated leadership backed by its energy super-power might, will make it one of the crucial players on the global polit-economic scene. The newly elected parliament with lesser, but strong enough support for expected to be future president, Vladimir Putin, will provide Russia political stability and enough time framework (2012-2024) to pursue this task of rising Russia in Eurasia and globally. Russian initiated and lead numerous economic and security intraregional mechanisms in Central Asia and on other territories of the former USSR, culminated with the president Medvedev proposal of the new Eurasian security structure. At the same time it showed harsh determination when demonstrated that it would no longer tolerate the Cold War winner's asserting behaviour in its traditional backyard, as in South Osethia/Georgia case in 2008.

The BRICS will within the WTO, G 20, G2, WB and IMF insist on the new polit-economic order that will address the growing empowerment and inequalities that will be as dangerous as climate change or food prices. It seems that for the first time, the world unprivileged will have such powerful representation and real chance for their voice to be heard and very feasible action to be conducted afterwards. BRICS economies hold 40 percent of the world's currency reserves. As the five largest emerging economies in the world, BRICS accounted for about 25 percent of the global land mass and 40 percent of the world's population. Eight out of the top ten most populous nations in the world are emerging economies. China, India, Indonesia, Brazil, Pakistan, Nigeria, Bangladesh and Russia account for 52 percent of the world's total population. Larger emerging economies also have a relative abundance of natural resources, particularly oil and natural gas.

---

[16] Central Intelligence Agency. *The World Factbook 2010* (CIA's 2010 Edition). Washington, D.C.: Potomac Books, 2010.

[17] Lashley, J. 2011, 'The Russian Economy Today: An Economic Analysis of the Post Cold War Era', *Suite101.com* (Online) Available at: http://jonathan-lashley.suite101.com/the-russian-economy-today-a197856#ixzz1fI6DWhxP

With a combined GDP of 8.7 US$ trillion (6.2 trillion euros) in 2010, the BRIC economies have accounted for 30 percent of global economic growth since 2000 and 45 percent of global economic growth since the beginning of the current global crisis. Some analyses predict that the BRIC[18] economies will constitute four of the five largest economies by 2032.

The growing influence of the BRIC economies can be seen in their importance for the global trade - the combined BRICS share of world trade increased from 6.9 percent in 1999 to about 18 percent in 2010, while its value increased almost six-fold from 790 billion US$ in 1999 to 4.4 trillion US$ in 2008. In addition to their contribution to global trade, BRICS economies have contributed to an increase in trade among developing countries, which is growing three times faster than the trade growth rate among advanced economies. BRICS economies have contributed up to 60 percent of trade between low-income countries and non-low-income countries emerging economies with bilateral trade between the BRICS and low-income countries increasing by about 25 percent a year in the last decade. This growth trend is expected to continue as BRICS economies become more dominant. The IMF says intra-BRICS trade, which is valued at more than 170 billion US$, has grown at the rate of 30 percent a year since 1999 and now accounts for 8 percent of global trade. Intra-BRICS trade has accounted for the fastest growth rate in global trade in the last decade.

Emerging and developing economies were responsible for driving global growth by more than 8 percent in 2011 according to the Organisation for Economic Co-operation and Development. Also, they tend to manage a shift from agriculture to the industrial and services industries and diverse their economies into more high-value industries. This we also see not only as a source of further contribution to the future global growth, but also as a source of certain change of global pre-distribution and appropriate allocation of global wealth.

Since recently, the theme of the unequal wealth and income distribution has become increasingly important worldwide, due to two, global impacting, factors. One is that for the first time in modern economic history the emerging economies became an important, promising and influencing part of the global economic and consequently political order, and thusly their voice became loud and important enough. The other one is that distribution of wealth and growing inequalities happening in it during the last few decades, have also marked the economies and societies of the developed countries. At the same time those trends triggered social and political problems internally but also, due to the global weight of their markets, globally too. So, the problems of the “less privileged” and the major, but so far, invisible part of the world population, suddenly became noticeable and analyzed and even dealt with to the some extent! Closely, connected with it is the problem of unsustainable level of debt of the poorest among them, which, as we could witness these days, is also spreading around the globe and particularly up-North.

The reality of our “prosperous” XXI century is that three quarters of the world population lives in low-income countries, where more than 1.4 billion people live in poverty so extreme that they can barely survive, while some 25,000 people die from hunger each day[19]. Also, over 3 billion people, that make almost half of the world population, live on less than

[18] Since January 2011 they became BRICS – BRIC plus South African Republic.

[19] *Share The World's Resources* (Online), Available at: http://www.stwr.org/poverty-inequality/

2.5 US$ a day, which make them survive another day, but just that – to barely survive. Every second child in the world live in poverty, while only in year 2003 10.6 million children died before aging 5 years due to harsh conditions of living.[20] These are just products of the global process of vicious circles of poverty, indebtedness and structural positioning in the global economic order that only speeded up its long-lasting spinning course in the last decades of the last century. While in 1960, the 20% of the world's people in the richest countries had 30 times the income of the poorest 20% — in 1997 they had 74 times as much.[21] In year 2008 position of the 40 countries with the lowest income was much worse than 25 years ago. Their average *per capita* income equals to only 3% of the *per capita* income in the high income countries.[22]

The absurdity of the existing order and extremely unequal distribution could also be illustrated by the fact that in 2006, when world gross domestic product was 48.2 US$ trillion and world population was approximately 6.5 billion, the world's billionaires – just 497 people possessed over 7% of world GDP, and low income countries with 2.4 billion people accounted for just 3.3% of that GDP (worth 1.6 trillion US$).[23] Threat of malnutrition and chronic illness, even if survive the birth and early childhood without shelter, sanitation or safe water or medical care, is the biggest for the poorest in society as their living conditions are the worse. Accordingly, they are also typically alienated from many aspects of social life and also have poor or no representation of their interest in political arena or generally in society, not to mention - globally. Consequently their choices to change their position used to be non-existent.

The newest globalization of the world market did not bring equal chances to all, as it was pompously announced as such by neo-liberal theoreticians. Global average income per-capita and global GDP did grow, but as well did gap between rich and poor. Actually, globalization of media and communication network contributed to the spreading of awareness among the poorest of injustice and hopelessness of their position and on the side - enormous wealth of the tiny minority, seen by them as the cause of their own misery. Liberalisation of the financial markets in poor countries without previously existing adequately developed legal infrastructure, tradition in this service, domestic financial institutions and stabile market, enabled the entrance of the superior major players from developed countries that soon were running the markets, but not that rarely whole country, as well. Also, liberalization of certain markets did not mean that countries of the South were qualified competitors on those markets. Furthermore, to attract FDI, poor countries entered a spiralling competition with each other in offering lower standards, minimum wages, and cheaper other resources, regardless of environment or energy saving standards. This has only increased poverty and inequality for most of the local population. Moreover, important part of this problem is that those countries are traditional producers and exporters of primal goods and percentage of those products in the gross global trade reduces from 70% in 1900 to barely 20% at the end of the XX century. Chances in globalization was there for those states which export was composed of industrial products and services and those were and are developed countries that have technology and dominate the structure of knowledge of the international political economy.

[20] Shah, A., November, 2011, „Causes of Poverty", *Global Issues* (Online), Available at: http://www.globalissues.org/issue/2/causes-of-poverty.
[21] 1999 Human Development Report, United Nations Development Program.
[22] World Bank Key Development Data & Statistics, World Bank, Accessed on March 3, 2008.
[23] Ibidem.

Critics of all sorts of the neo-liberal conception of development as a discourse and "the only path" are unison when judging on devastating effects of bold free-market development model, careless for local needs and conditions, enforced by IMF, WB and their agencies, as well as other members of the OUN family. Those institutions were actually implementing the ideas of the leading members of the Chicago economic school and their mainstream followers, glorified and well taken care of. Wide spread sufferings across Africa, parts of Asia and Latin America, was caused by Structural Adjustment Policies (SAPs) during the 1980s and global economic slowdown. According to the United Nations Children's Fund 1990 year report, during the mentioned decade the average decrease of income in Latin America was approximately 10% and in Sub-Saharan Africa for over 20%, while in some urban districts in these regions real income decreased for over 50%. According to the relevant reports of the very World Bank at the end of the 1980s some 950 million of the 5.2 billion world population at the time suffered from "chronic malnutrition", which meant – two fold compared to the previous decade. Those shocking consequences of the development concept cruelly imposed by the Bretton Woods institutions resulted in a sort of accordance among what we could call self arisen democratic movements and individuals that search for other development paths. They demand different concept of development that beyond material conditions of living will also respect environment concerns, more fair distribution of wealth and above all - involvement of local people in making and implementing decisions that create their living conditions and future for their children. Protests against WTO and IMF in Seattle and Washington in 1999 and growing intensity and number of their partakers until today, were among the first serious proof that more and more people around the world realized the damaging effects of the Washington Consensus.

Too many of the Third World states, and recently states in transition, were forced to implement that dictate that meant significant cut of the government spending, starting with social funds, education, health, giving up protection of domestic industries and opening doors wide for foreign goods and services, as well as FDI, as conditions for needed new loans and repayment. "Consent" given by local governments was actually forced one, as a consequence of huge debts that these countries found themselves after the two Oil Shocks and wave of protectionism that followed it. "Debt is an efficient tool. It ensures access to other peoples' raw materials and infrastructure on the cheapest possible terms."[24] Their creditors – giant commercial banks coming from the wealthiest countries - used IMF and WB as instruments for the implementation of the policy that was beneficial for them and too often lethal for the less and least developed countries. The above mentioned political reasons and the way that leading officials and experts of the key international economic institutions were engaged were the main reasons why the question of the reducing or extinguishing underdevelopment, poverty, inequality and indebtedness in the Third Wold countries was never seriously dealt with. The first priority of the IMF and WB was repayment of debt and not development and employment, nor poverty reduction. Actually, they have been pushing the poor states into deeper poverty and even greater dependency on the richest nations.

The need for the international community to transform economic priorities is urgent, as well as the new way of decision making process with much wider representation and legitimacy. New order, new solutions, visions and visionaries are needed to decrease the uncertainties ahead of us. While many analyses prove that it is possible to feed 7 billion people with the

[24] Susan George, A Fate Worse Than Debt, (New York: Grove Weidenfeld, 1990), pp. 143.

existing recourses, providing safe water could be bigger challenge[25], as well as finding sufficient energy source that could replace fossil fuels in most of their utilizations, but the biggest challenge would be to provide a chance for hope of dissent leaving for the 43% of the Earth's 7 billion inhabitants that are aged under 25. To the larger point we will have to accept the life within such an uncertain environment, in the world with several centres, growing interdependence and dissemination in some aspects (some nations might prefer to step aside a bit). New modesty should be introduced as maximal utilisation approach or predatory capitalism leads towards chaos and self destruction.

„…we live amid broken paradigms and failing multilateral institutions. The current economic turmoil only compounds a growing sense of perplexity and impotence in the face of climate change and the risk to global food and energy scarcity. Clearly modern society must rethink a system that is so enormously wasteful of the earth's finite natural resources, and at the same time, condemns billions of people to poverty and despair".[26]

References:

1. Da Silva, L.I.L., June 15, 2009, "At Yekaterinburg, BRIC comes of age", Global Times, [Online] Available at: http://www.globaltimes.cn/opinion/foreign-view/2009-06/437122.html.
2. "Long-sought IMF voting reform takes effect", *AFP*, March 4, 2011, Available at: http://news.theage.com.au/breaking-news-world/longsought-imf-voting-reform-takes-effect-20110304-1bhgo.html
3. Murray Hiebert and Kiet Nguyen: "President Obama Will Announce Increased Marine Presence during Australia Visit", *Critical Questions*, the Center for Strategic and International Studies (CSIS), D.C., November 15, 2011.
4. http://www.stratfor.com/weekly/20110627-divided-states-europe
5. Schwartz, D., *CBC News* November 1, 2011, "Papandreou's referendum gamble", Available at: http://www.cbc.ca/news/world/story/2011/11/01/f-greece-bailout-uncertainty.html
6. http://rt.com/usa/news/steve-forbes-new-gold-standard/
7. http://www.forbes.com/sites/greatspeculations/2011/03/30/china-nudges-world-closer-to-new-gold-standard/
8. „ASEAN countries returning to pre-crisis growth", OECD Development Centre, 2011/12 *Southeast Asian Economic Outlook*, Available at: http://www.oecd.org/document/2/0,3746,en_2649_33731_46367966_1_1_1_1,00.html
9. „Report: Emerging Asia Well Placed to Handle Volatile Global Economy", *2point6billion.com* [Online], Available at: http://www.2point6billion.com/news/2011/11/23/report-emerging-asia-can-largely-withstand-external-shock-10449.html
10. „China promising to be No.1 manufacturing country", People's Daily Online, http://english.people.com.cn/90001/90776/90884/6473390.pdf
11. "Chinese Space Program", http://factsanddetails.com/china.php?itemid=385&catid=10&subcatid=67

[25] According to the World Resources Institute (USA), fresh water makes only 2.5% of all the water on Earth, of which only 1/3 is not frozen! By 2025 the water use will rise by 50% in the developing nations. "Water shortage main issue for Earth's billions", *The Straits Times*, Editorial, Nov. 2, 2011.
[26] Da Silva, L.I.L., June 15, 2009*, „At Yekaterinburg, BRIC comes of age", Global Times, [Online] Available at: http://www.globaltimes.cn/opinion/foreign-view/2009-06/437122.html.*

12. Wang Guanqun, »Chinese GPS moves closer«, 2010-06-04, Xinhua News Agency, http://news.xinhuanet.com/english2010/china/2010-06/04/c_13332853.htm
13. Sule, A. 2011, `BRICS can build common currency', *China Daily European Weekly*, [Online]
Available at: http://usa.chinadaily.com.cn/opinion/2011-04/08/content_12292017.htm
14. Central Intelligence Agency, *The World Factbook 2010* (CIA's 2010 Edition). Washington, D.C.: Potomac Books, 2010.
15. George, S., *A Fate Worse Than Debt,* New York: Grove Weidenfeld, 1990.
16. Lashley, J. 2011, 'The Russian Economy Today: An Economic Analysis of the Post Cold War Era', *Suite101.com* [Online], Available at: http://jonathan-lashley.suite101.com/the-russian-economy-today-a197856#ixzz1fI6DWhxP
17. *Share the World's Resources* [Online], Available at: http://www.stwr.org/poverty-inequality/
18. Shah, A., November, 2011, „Causes of Poverty", *Global Issues* [Online], Available at: http://www.globalissues.org/issue/2/causes-of-poverty

2012 Events

March 30-April 1 2012: ACP2012 - The Second Asian Conference on Psychology & The Behavioral Sciences
March 30-April 1 2012: ACERP2012 - The Second Asian Conference on Ethics, Religion & Philosophy

April 6-8 2012: ACAH2012 - The Third Asian Conference on Arts & Humanities
April 6-8 2012: LibrAsia2012 - The Second Asian Conference on Literature & Librarianship

April 26-28 2012: ACLL2012 - The Second Asian Conference Language Learning
April 26-28 2012: ACTC2012 -The Second Asian Conference on Technology in the Classroom

May 3-6 2012: ACSS2012 - The Third Asian Conference on the Social Sciences
May 3-6 2012: ACSEE2012 - The Second Asian Conference on Sustainability, Energy and the Environment

June 2-4 2012: ACAS2012 - The Second Asian Conference on Asian Studies
June 2-4 2012: ACCS2012 - The Second Asian Conference on Cultural Studies

June 15-17 2012: ACCOMS2012 - The First Asian Conference on Computer Science

October 26-28 2012: ACE2012 - The Fourth Asian Conference on Education

November 2-4 2012: MediAsia2012 - The Third Asian Conference on Media & Mass Communication
November 2-4 2012: FilmAsia2012 - The First Asian Conference on Film and Documentary

November 16-18 2012: ABMC2012 - The Third Asian Business & Management Conference