The Financial Constraints and Firm's Profitability: A Case Study of The Indonesian Transportation Companies Listed in Indonesian Stock Exchange

Fitriani Ramadhina, Swiss German University, Indonesia
Neneng Djuaeriah, Swiss German University, Indonesia

The Asian Conference on Business and Public Policy 2014
Official Conference Proceedings

Abstract
This study attempts to analyze the correlation between financial constraints with the firm profitability through return on asset(ROA),return on equity(ROE) and net profit margin(NPM). The indicators used in determining the financial constraints are cash flow, firm size, dividend payout, interest coverage, debt to capital ratio and long term debt to capital ratio. The data set consists of 26 companies from the transportation industry listed in Indonesian Stock Exchange for the period of 2007-2012. Using panel data regression empirical analysis indicates that debt to capital ratio significantly impact the ROA and ROE; interest coverage is significantly impact the ROE and cash flow as well as firm size are significantly impact PM. This study also finds that dividend payout and long-term debt to capital ratio has no impact to the firm's profitability. The results expected that companies are able to improve the firm's profitability and manage their financial better, so no constraints will arise.

Keywords: Financial Constraints, Profitability, Return on Asset, Return on Equity, Net Profit Margin

Introduction

The enterprises require a financial support to develop its businesses Most companies needs to take out loans not only to develop its business, but also to pay its debt. A company that is unable to pay its debt is considerable as financially constrained. However, sometimes the cost of the loan itself is not cheap. Based on the review of Bank Indonesia, the benchmark interest rate in Indonesia was last recorded at 7.50% (see figure 1.1). The averaged interest rate in Indonesia is 7.72% from 2005 until 2014 reaching an all time high of 12.75% in December 2005 (Taborda, 2014). The high amount of loan interest rates can be affected by the imperfections in the financial markets. It is surely a disadvantage for a company, because it directly affects the firm's growth.

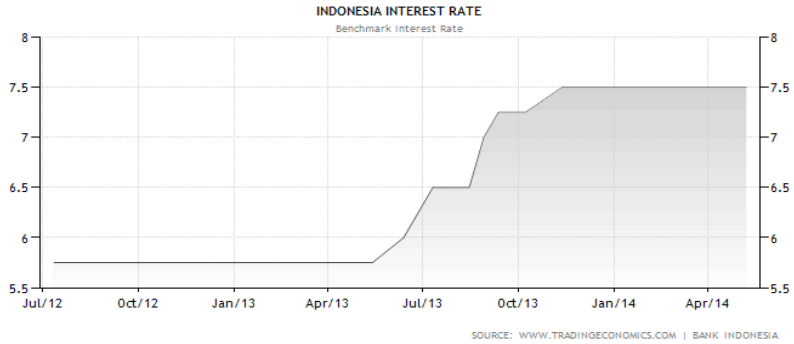

Figure 1 Indonesian's Interest Rate (July 2012- April 2014)
Source : www.tradingeconomics.com

An obstacle is called a "Constraint" only if it significantly impacts the firm's growth. Ayyagari et al. (2006), found that even though the company reported a lot of obstacles to growth, not all the obstacles are constraining. Several obstacles such as political instability and crime are indirectly affecting the firm growth by the influence on other obstacles, or not at all. Meanwhile, financing obstacles such as interest rate is proved to have the largest direct effect on firm growth.

A constraint is basically a limitation. A financial constraint is the limitation of money, which usually means shortage or lack of money or funds. A financially constrained firm has a wedge between its internal and external cost of capital (Bodnaruk, Loughran, & McDonald, 2013). The sensitivity of cash flow between financial constraints and financial distress is different. A financially distressed firm is indicated by the presence of a negative cash flow, while a financially constrained or unconstrained firm is indicated by the presence of a positive cash flow (Cava, 2005). In addition, constrained firm often requires external finance and tend to have more debt in their capital structure (Botten & Karset, 2010).

Financial constraint is not only experienced by a new business or start-up company. It can be perceived by all levels of business, whether it is small, medium, or even a large business. This happened because financial markets can affect financial constraints. Smaller firms, however, are expected to be more financially constrained. According to Lamont, O Polk, & saa-Requejo (2001), there are 3 indicators affecting financial constraint; the value of the firm, the lower return compared to the unconstrained firm, and returns that are insignificantly more cyclical than the average.

There are various methods to measure financial constraints of a company. Previous studies have suggested many possibilities, including Hadlock & Pierce (2009), who do the research on Kaplan-Zingales (KZ Index). They found that there are only two out of 5 components on KZ Index, which are firm size and age, which are reliably related to financial constraints. Another study, Baños-Caballero, García-Teruel, & Martínez-Solano (2014), expressed that financial constraint can be measured by cash flow, dividend, firm size, tangibility ratio, cost of external financing, interest coverage, and Z-score. In addition to that it also discuss of financial constraints and its relation to several important parts of a company. Those are cash flow sensitivity of cash, investment of cash flow, firm growth, firm value, working capital management, innovation, organizational decisions, stock returns, and corporate performance. However, none discussed the relation between financial constraints and firm's profitability.

Profitability indicates how well the performance of the company over a specific period (Poznanski, Sadownik, & Gannitso, 2013). It is measured with income and expenses come from the activities of the business. To assess the financial health of a business, profitability ratios can be used. Those ratios are net profit margin (NPM), return on assets (ROA) and return on equity (ROE). ROA manages the company assets to generate profit; ROE manages the returned amount of net income to the common stockholder's equity; while NPM measures the percentage of each Rupiah of sales to earn profit. Thus, those three ratios can be used to examine the impact of financial constraints on a firm's profitability.

The transportation industry continues to grow rapidly in recent years, not only for the inland transportation, but also sea and air transportation. Indonesia's sea transport is very important for the economic integration and domestic and foreign trade. It has reached the total domestic movement for about 12 billion/year. The biggest four most used ports in Indonesia, Jakarta (Tanjong Priok), Surabaya (Tanjung Perak), Belawan (Cabang Belabuhan Belawan), and Ujung Pandang, handle most of Indonesia's export and import cargoes (The World Bank Group). On air transportation, Indonesia has become the most promising country in the region. The passenger traffic grew annually on average 7% in 2005 – 2009 (Susantono, 2012). It is because travel by air is the quickest way to get around the country's thousands of islands, and for some areas, the only option. The three biggest airports in Indonesia, Bali (Ngurah Rai airport), Jakarta (Soekarno Hatta airport) and Surabaya (Juanda International Airport) had experienced over capacity of demand. It occurs because of the large amount of demand compared to its existing capacity.

The purpose of this research is to identify which financial constraints measurement is significantly affecting firm's profitability in publicly listed Indonesian transportation companies.

Literature Review

A firm is considered as financially constrained when there is a wedge between the costs of internal and external finance. There are many ways in measuring financial constraint. However, there are 3 ways that is most widely used by researchers. Those are the Kaplan Zingales Index (KZ-Index), Whited Wu Index (WW-Index) and Tobin's Average Q. KZ-Index identify an index of liquidity constraint based on 5

variables: ratio of cash flow to capital; Tobin's average Q; ratio of debt to capital; ratio of dividends to capital; and ratio of cash to capital (Tang & Wei, 2008). WW Index, on the other hand, measure the firm's ability to raise external financing using a set of 6 variables: cash flow; dividend dummy; leverage; total asset; industry sales growth; and firm sales growth (Bodnaruk, Loughran, & McDonald, 2013).

Tobin's average Q is the ratio of the market value of a firm's assets (as measured by the market value of its outstanding stock and debt) to the replacement cost of the firm's assets (Carlton & Perloff, 2000). According to Cava in 2005 had done some research to identify financially constrained firm by looking at the dividend payout ratios, age, firm size, the degree of ownership, industrial group membership, the nature of the bank-firm correlation and the presence of bond rating.

According to Frochaux & Fresard (2004) had developed a new framework by connecting financial constraints to firms demand or liquidity, because they believe that the liquid balance sheets are the important key for investment policies. They assume that firms anticipating financial constraints will save cash to overcome future limited access to external funds. However, increasing cash holdings is costly since it diminishes the possibility for current investment. Accordingly, Almeida et al. (2004) assume a financially unconstrained firm is a firm that has a perfect access to external finance, which is irrelevant for the firm to increase its level of liquidity. On the other hand, they assume that in order to balance current and future valuable investments, financially constrained firms show a systematic propensity to transform cash flow into cash holdings. Referring to the cash flow sensitivity of cash, they argue that looking at the propensity of saving cash out of cash flow provides a valid and theoretically founded measure of financial constraints (Frochaux & Frésard, 2004).

There is no actual standard in determining the size of a firm. However, the firm size can be a measure in some methods, namely through sales, employees, assets, or value added features. Other factors affecting the firm size are war, economic systems, respect for basic property rights, the large number of industries, and the interactions between institutional and technological effects (Bodnaruk, Loughran, & McDonald, 2013).

Firms that face larger markets are large themselves, principally. Bodnaruk, Loughran, & McDonald (2013), did research of firm size across industries among 15 European countries and found some criteria for large firms. At the industry level, firms in the utility sector are large. So is the physical capital intensive industries, high wage industries, industries that require little external financing and industries that do a lot of Research and Development. At the country level, countries with efficient judicial systems and richer countries have larger firms. However, the results show that the average size of firms in industries dependent on external finance is larger in countries with better financial markets, suggesting that financial constraints may also keep firms small.

Crisóstomoa et al. (2012) on their findings of research done in Brazil, show that firm size is effectively an important determinant of firms facing financial constraints. Recently, Hadlock & Pierce (2010) confirm the relevance of firm size as an important predictor of financial constraints and created a financial constraint index based on

firm size and age (SA Index) as discussed in the financial constraint sub-chapter (Crisóstomoa, López-Iturriagab, & Valleladob, 2012).

According to Moyen in 2004 on the research to Fazzari, Hubbard, and Petersen (1988) identified firms with low dividends as "most constrained" and firms with high dividends as "least constrained". The payout ratio also indicates how well earnings support the dividend payments: the lower the ratio, the more secure the dividend because smaller dividends are easier to pay out than larger dividends. Cava (2005) stated that unconstrained firms have no incentive to cut dividend payments while constrained firms can cut dividends to eliminating the cost of internal funds for profitable investment projects. Therefore, firms that cut their nominal dividend payments in the current or previous period are considered as financially constrained.

Interest coverage determines the debt servicing capacity of a firm insofar as fixed interest on long-term loan is concerned (Khan & Jain, 2008). Since the extent to which the interest covered by the firm's earning may affect the firm's profitability, interest coverage can differentiate between financially constrained and unconstrained firms (Maestro, Miguela, & Pindadoa, 2001). The lower the interest coverage ratio, the fewer earnings are available to meet interest payments, which leads to the company's higher debt burden and a greater possibility of bankruptcy. To reach the safe point, an interest coverage ratio has to show a result above 1.5. If the ratio result is 1.5 or lower, it indicates that the business is having difficulties in generating income to pay its interest obligations.

Both debt to capital ratio and long-term debt to capital ratio are part of leverage ratio, which shown a relationship between creditor's funds and owner's capital. Debt to capital ratio measures the relation between total debt (includes both short-term and long-term liabilities, but does not include operating items such as account payable and accruals) with total capital invested in a business. This ratio reveals the percentage of debt holders' contribution to total fund invested in a business (Sinha, 2009). The lower the debt to capital ratio, the greater the cushion against creditor's losses in the event of liquidation. Stockholders, on the other hand, may want more leverage because it can magnify expected earnings (Brigham & Houston, 2013). Long-term debt to capital ratio is important in determining the long-term financial strength of a company. It shows the ability of the company to pay the interest regularly as well as replay the instalment of the principal on due dates or in one lump sum at the time of maturity (Khan & Jain, 2008).

Profitability ratios measure the income or operating success of a company for a given period of time. According to Ferrando & Mulier(2013), indicates that more profitable firms are less likely to face actual financing constraints. They found that various measurements related to profitability of a company is more significant and robust in predicting the actual financial constraints encountered by firms than liquidity or leverage ratios. Firms with higher ROE and higher Profit Margin are less likely to have their actual application for external finance rejected. Also, more profitable firms should have easier access to external finance as they generate more cash flow, which increases the likelihood that they will be able to repay their loans.

ROA examines the ability of return generated by the assets of the firm. It is a very useful measurement to compare the performance of companies within industries.

ROA can be measure by dividing net income to average assets of the company. The high return of assets generated implies that the assets of the company are productive and well managed. In contrast, the low ratio compared to industry may mean that competitors have found a way to operate more efficiently (Poznanski & Gannitso, 2013).

ROE is one of the most important ratios to investors. It measures the profitability from the common stockholders' point of view. It indicates how much the stockholders earned for their investment in the company. The level of debt (financial leverage) on the balance sheet has a large impact on this ratio. Debt magnifies the impact of earnings on ROE during both good and bad years. When large differences between ROA and ROE exist, an investor should closely examine the liquidity and financial risk ratios (Bajkowski, 1999).

Methodology

The purpose of this research is to contribute to how the financial constraints influences the firm profitability with reference to Indonesian Transportation Industries. The study illustrates the relationship between financial constraints indicators towards stock price of 26 Indonesian firms listed on Indonesian Stock Exchange(IDX) for a period of 6 years from 2007 to 2012. The section of the article discuss the firms and variable included in the study, the distribution patterns of data and applied statistical technique in investigating the relationship financial constraints and profitability.

1. Data and Sample

The data used in this study was acquired from Indonesian Stock Exchange(IDX), internet and websites of different firms. Data of firms listed on the IDX for the most recent six years formed the basis of calculations starting from 2007 to 2012. The reason for restricting to this period was that the latest data available for the study was available for this period. The sample is based on financial statement of 26 Indonesian Firms, listed on IDX which concentrate on Transportation Firms. The profitability measurement used in this research is ROA, ROE and NPM , while the financial constraints is represented by cash flow, firm size, dividend payout, to total capital, long term debt total capital and interest coverage. In addition to that, the calculation of data is based on average of 6 years.

2. Variables

This study implements the issue identifying key financial constraints variables influencing company profitability of Indonesian firms. Choice of the variables is influenced by the previous study on profitability affected by financial constraints factors.

All the variables stated below have been used to test the hypotheses of this study. They include defendant and independent variables:

The total cash flow is the sum of three cash activities; operating activities (sales of goods and service), investing activities (sale or purchase of an asset) and financing activities (borrowings).

Dividend payout ratio is calculated by dividing the yearly dividend per share to earnings per share or equivalently dividends to net income(Moyen, 2004).

Total asset can be used to evaluate a company and give a sense of the size of the company.

Interest coverage ratio indicates the percentage of earnings available to meet interest payment. It measure the ability of a company in generate income to pay its interest obligations.

Debt to capital ratio measures the relation between total debt (includes both short-term and long-term liabilities, but does not include operating items such as account payable and accruals) with total capital invested in a business(Sinha 2009).

ROA can be measure by dividing net income to average assets of the company(Weygant, Kimmel and Kieso, 2012).

ROE is calculated by dividing net income available to the common stockholder to average common stockholder's equity(Weygant, Kimmel and Kieso, 2012).

Net profit margin is the ratio of net profits/losses for the period with total sales(Weygant, Kimmel and Kieso, 2012).

3. Hypothesis

Since the objective is this study is to examine the relationship between profitability and financial constraints factors, the study makes a set of testable hypotheses (the Null Hypotheses Ho Versus the Alternative ones H1)

Hypothesis 1

The first hypothesis of this study is as follows:

H_0 : Cash flow, firm size, dividend payout, interest coverage, debt to capital ratio, and long term debt to capital ratio as a measurement of financial constraint do not affect the firm's ROA.

H_1 : Cash flow, firm size, dividend payout, interest coverage, debt to capital ratio, and long term debt to capital ratio as a measurement of financial constraint affect the firm's ROA.

Hypothesis 2

The Second hypothesis of this study is as follows:

H_0 : Cash flow, firm size, dividend payout, interest coverage, debt to capital ratio, and long term debt to capital ratio as a measurement of financial constraint do not affect the firm's ROE.

H_1 : Cash flow, firm size, dividend payout, interest coverage, debt to capital ratio, and long term debt to capital ratio as a measurement of financial constraint affect the firm's ROE.

Hypothesis 3

The Third hypothesis of this study is as follows:

H_0 : Cash flow, firm size, dividend payout, interest coverage, debt to capital ratio, and long term debt to capital ratio as a measurement of financial constraint do not affect the firm's NPM.

H_1 : Cash flow, firm size, dividend payout, interest coverage, debt to capital ratio, and long term debt to capital ratio as a measurement of financial constraint affect the firm's NPM.

4. Model

The regression model used in this study is the multiple regression model. Multiple regression model is the extended version of the bivariate linear regression (Cooper & Schindler, 2011). It measures the correlation between one dependent variable with many independent variables. The generalized equation due to the incorporation of multiple independent variables is as follows:

$$Y_{i,t} = \beta_o + \beta_1 X_{1\,i,t} + \beta_2 X_{2\,i,t} + \beta_3 X_{3\,i,t} + \beta_n X_n + \varepsilon$$

Based on this study, however, the multiple regression model is estimated as follows:

1. $ROA_{i,t} = \beta_o + \beta_1 CF_{i,t} + \beta_2 FS_{i,t} + \beta_3 DP_{i,t} + \beta_4 IC_{i,t} + \beta_5 tDTC_{i,t+} \beta_6 LTC_{i,t+} \varepsilon_{i,t}$
2. $ROE_{i,t} = \beta_o + \beta_1 CF_{i,t} + \beta_2 FS_{i,t} + \beta_3 DP_{i,t} + \beta_4 IC_{i,t} + \beta_5 tDTC_{i,t+} \beta_6 LTC_{i,t+} \varepsilon_{i,t}$
3. $NPM_{i,t} = \beta_o + \beta_1 CF_{i,t} + \beta_2 FS_{i,t} + \beta_3 DP_{i,t} + \beta_4 IC_{i,t} + \beta_5 tDTC_{i,t+} \beta_6 LTC_{i,t+} \varepsilon_{i,t}$

Where:

$ROA_{i,t}$	= Return on Asset yearly of company *i* in year *t.*
$ROE_{i,t}$	= Return on Equity yearly of company *i* in year *t.*
$PM_{i,t}$	= Profit Margin yearly of company *i* in year *t.*
β_o	= A constant, the value of *Y* when *X* values are zero.
β_n	= The slope of regression surface (represent the regression coefficient associated with each variables).
$CF_{i,t}$	= Cash flow yearly of company *i* in year *t.*
$FS_{i,t}$	= Firm Size yearly of company *i* in year *t.*
$DP_{i,t}$	= Dividend payout yearly of company *i* in year *t.*
$IC_{i,t}$	= Interest coverage yearly of company *i* in year *t.*
$D\_TC_{i,t}$	= Debt to total capital yearly of company *i* in year *t.*
$LD\_TC_{i,t}$	= Long term debt to total capital *t* yearly of company *i* in year *t.*
$\varepsilon_{i,t}$	= An error term, normally distributed about a mean of assumed to be 0.

5. Data Analysis

This research provided two data analysis: descriptive and quantitative. The descriptive analysis is to help to describe relevant aspect of phenomena of company performance and provide detailed information about each relevant variables in this research. In quantitative analysis is uses the pooled regression type of panel data. The pooled regression, also called the constant and the coefficients model is one where both intercepts and slopes are constant. Before the regression analysis is conducted the classical assumptions are being tested, Classic Assumption is consists of 4 assumptions. They are normality, multicolinearity, autocorellation and heterocedasticity assumptions. The model has to pass this assumption to result in unbiased model. Unbiased model is needed to generalize the result beyond the samples and serve wider population. However, if the model violates the assumption,

conclusion still can be made for this sample. It means the research cannot be use for larger population (Field, 2011).Goodness of Fit measures a model validity to explain the phenomenon that becomes purpose of a research. Goodness of Fit is consists of 3 Test, R square, F-test and t-test (Field, 2011). For this purpose of analysis the SPSS 15.1 software was used to analysze the financial data especially in the case of panel data.

Data and Research Results

1. Descriptive Statistics

The followings are the descriptive statistics results for ROA, ROE and NPM.

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
ROA	101	-7.50	3.66	-.0209	.85050
D_TC	112	-421.25	933.68	40.1387	108.57663
LTD_TC	106	-421.25	945.27	32.6403	116.47956
CF	89	-2E+012	3E+012	1E+011	5.200E+011
FS	116	-1E+007	2E+007	1636941	3734641.701
DP	62	-5.68	10.44	.0973	1.52288
IC	103	-317.31	458.23	1.4238	65.60022
Valid N (listwise)	35				

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
ROE	80	-12.31	.39	-.2262	1.48815
D_TC	114	-527.15	926.09	30.5799	110.18033
LTD_TC	107	-527.15	939.99	25.7521	117.95004
CF	91	-2E+012	3E+012	7E+010	5.198E+011
FS	118	-1E+007	2E+007	1254183	3519088.091
DP	63	-6.82	10.44	.0722	1.58613
IC	105	-416.53	457.73	-.0340	72.82025
Valid N (listwise)	28				

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
NPM	111	-1.61	20.79	.1549	2.01347
D_TC	113	-151.15	953.06	58.7005	106.32000
LTD_TC	107	-151.15	958.73	48.2921	115.70774
CF	90	-8E+011	3E+012	2E+011	5.507E+011
FS	117	-4363863	2E+007	2505411	4635212.704
DP	63	-2.78	10.44	.1559	1.36812
IC	104	-115.59	459.48	5.1207	51.66933
Valid N (listwise)	37				

Table 1: Descriptive Statistics of ROA, ROE and NPM
Source: SPSS

As seen on the table 1, the mean value and standard deviation of 101 observations for the ROA is -0.02% and 0.85%, with the lowest percentage of -7.5% and the highest percentage of 3.66%. The mean value and standard deviation of 80 observations for the ROE is -0.23% and 1.49%, with the lowest percentage of -12.31% and the highest percentage of 0.39%. The mean value and standard deviation of 111 observations for the NPM is 37% and 2.01%, with the lowest percentage of -1.61% and the highest percentage of 20.79%. The value of standard deviation indicates the diversity of the data. If the number of the data is away from 0 or 1, then the data is supposed to be highly variable. On the other hand, if the data approaching 0 then the data does not vary.

2. Assumption Tests

The following data is illustrating the assumption test of normality, multicolinearity, autocorrelation and heterocedascity results for ROA, ROE and NPM.

- Return on Asset (ROA)

One-Sample Kolmogorov-Smirnov Test

		Unstandardized Residual
N		35
Normal Parameters[a,b]	Mean	.0000000
	Std. Deviation	.06970561
Most Extreme Differences	Absolute	.094
	Positive	.087
	Negative	-.094
Kolmogorov-Smirnov Z		.556
Asymp. Sig. (2-tailed)		.917

a. Test distribution is Normal.

b. Calculated from data.

- Return on Equity (ROE)

One-Sample Kolmogorov-Smirnov Test

		Unstandardized Residual
N		28
Normal Parameters[a,b]	Mean	.0000000
	Std. Deviation	.12032608
Most Extreme Differences	Absolute	.121
	Positive	.121
	Negative	-.111
Kolmogorov-Smirnov Z		.643
Asymp. Sig. (2-tailed)		.803

a. Test distribution is Normal.

b. Calculated from data.

- Profit Margin (NPM)

One-Sample Kolmogorov-Smirnov Test

		Unstandardized Residual
N		37
Normal Parameters[a,b]	Mean	.0000000
	Std. Deviation	.29034989
Most Extreme Differences	Absolute	.156
	Positive	.102
	Negative	-.156
Kolmogorov-Smirnov Z		.947
Asymp. Sig. (2-tailed)		.332

a. Test distribution is Normal.

b. Calculated from data.

Table 2: Normality Distribution of ROA, ROE and NPM
Source: SPSS

Based on the normality test with the Kolmogorov-Smirnov, the table 2 above shown the same results of ROA, ROE and NPM. They have Asymp. significant value greater than 0.05, which are 0.917, 0.803 and 0.332 . Thus, it can be concluded that the data is normally distributed.

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	.162	.051		3.181	.004		
	D_TC	-.016	.004	-1.244	-4.102	.001	.202	4.940
	LTD_TC	.004	.003	.331	1.197	.245	.243	4.107
	CF	5.91E-014	.000	.142	.502	.621	.233	4.298
	FS	1.36E-008	.000	.308	.866	.396	.147	6.798
	DP	.005	.011	.056	.398	.695	.925	1.081
	IC	-.003	.002	-.341	-2.268	.034	.824	1.214

a. Dependent Variable: ROE

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	.030	.019		1.598	.121		
	D_TC	-.001	.000	-.765	-2.931	.007	.354	2.827
	LTD_TC	.000	.000	.337	1.297	.205	.357	2.799
	CF	5.68E-014	.000	.273	.907	.372	.267	3.749
	FS	-4.9E-009	.000	-.229	-.763	.452	.268	3.736
	DP	.001	.007	.036	.228	.821	.982	1.018
	IC	9.87E-005	.001	.016	.105	.917	.983	1.017

a. Dependent Variable: ROA

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	.102	.082		1.246	.223		
	D_TC	-.002	.001	-.308	-1.514	.140	.357	2.804
	LTD_TC	.000	.001	-.127	-.632	.532	.363	2.753
	CF	7.89E-013	.000	.693	3.317	.002	.339	2.952
	FS	-8.2E-008	.000	-.773	-3.675	.001	.335	2.988
	DP	.006	.030	.026	.215	.831	.980	1.020
	IC	.009	.007	.174	1.401	.171	.962	1.039

a. Dependent Variable: NPM

Table 3: Results of Multicolinearity of ROA, ROE and NPM
Source: SPSS

According to Table 3: The multicolinearity test, the regression defendant variables are ROA, ROE and NPM. The results of VIF(Variance Inflation Factor) are greater than 0.1 and smaller than 10 for all three defendant variables. Therefore, this regression model is showing that there is no multicolinearity.

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.570[a]	.325	.181	.07681	1.842

a. Predictors: (Constant), IC, D_TC, DP, FS, LTD_TC, CF

b. Dependent Variable: ROA

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.781[a]	.609	.498	.13644	2.063

a. Predictors: (Constant), IC, DP, FS, LTD_TC, CF, D_TC

b. Dependent Variable: ROE

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.746[a]	.556	.467	.31806	2.368

a. Predictors: (Constant), IC, LTD_TC, DP, CF, D_TC, FS

b. Dependent Variable: NPM

Table 4: Results of Autocorrelation Test of ROA, ROE and NPM
Source: SPSS

According to Table 4: The autocorrelation test model summary for ROA, ROE and NPM the value of Durbin-Watson is 1,842, 2.063 and 2.368 respectively. The result of 'd' value will be compared to the Durbin Watson zone of rejection. Because of the 'd' value of ROA is between the du and dl values, and also the 'd' value of ROE and NPM is between 4-du and 4-dl, means that all the variables are inconclusive or autocorrelation but still tolerable in the regression model.

	ROA	ROE	NPM	
Variable	Sig	Sig	Sig	Results
D_TC	0.477	0.809	0.408	Heteroscedascity is not occur
LTD_TC	0.718	0.282	0.666	Heteroscedascity is not occur
CF	0.974	0.567	0.373	Heteroscedascity is not occur
FS	0.992	0.671	0.288	Heteroscedascity is not occur
DP	0.709	0.295	0.856	Heteroscedascity is not occur
IC	0.599	0.589	0.678	Heteroscedascity is not occur

Table 5: Results of Heteroscedascity Test of ROA, ROE and NPM
Source: SPSS

As seen on the table above, it contains the significance value for each variable. The table indicates the result of the significance value greater than 0.05, which means that there is no heteroscedascity occur in this model.

3. Research Results

$$ROA = 0.030 + 0.0000000000000568\ CF - 0.0000000049\ FS + 0.001\ DP + 0.0000987\ IC - 0.001\ D\_TC + 0.000\ LT\_DC + 0.019$$

Variable	**Common Effect**		**H_0 Results**	**Description**
	Coefficient	**Sig.**		
C	0.030	0.121	-	-
D_TC	-0.001	0.007***	H_0 Rejected	Debt to capital ratio is affecting ROA
LTD_TC	0.000	0.205	H_0 Accepted	Long-term debt to capital ratio is not affecting ROA
CF	5.68e-014	0.372	H_0 Accepted	Cash flow is not affecting ROA
FS	-4.9e-009	0.452	H_0 Accepted	Firm size is not affecting ROA
DP	0.001	0.821	H_0 Accepted	Dividend payout is not affecting ROA
IC	9.87e-005	0.917	H_0 Accepted	Interest coverage is not affecting ROA
R	0.570			

R Squared	0.325
Adj. R Square	0.181
F-Stat	2.248
Prob. (F-Stat)	0.068*

Table 6: Results of Ordinary Least Squares Regression on ROA
Source: SPSS

**Significant at 10%* ***Significant at 5%* ****Significant at 1%*

According to
Table 6 shows the result of T-test on ROA. It shown that the long term debt to capital ratio, cash flow, firm size, dividend payout and interest coverage variables does not affect ROA. While debt to capital ratio variable has a significant negative effect at 1%. This also means that only debt to capital ratio that is significantly affecting ROA at 1%. The R_2 value of ROA is 0.325. It indicates that the ROA is affected by all of the independent variables of 32.5%. The remaining value that is influenced by other variables is not included in the model. the p-value of ordinary least square ROA is 0.068 < 0.10, this means that the model can be used in the research. Therefore, the alternative hypothesis(H1) of hypothesis 1 is accepted.

ROE = 0.162 + 0.0000000000000591 *CF* + 0.0000000136 *FS* + 0.005 *DP* - 0.003 *IC*
- 0.016 *D_TC* + 0.004 *LT_DC* + 0.051

Variable	**Common Effect**		**H_0 Results**	**Description**
	Coefficient	**Sig.**		
C	0.162	0.004	-	-
D_TC	-0.016	0.001***	H_0 Rejected	Debt to capital ratio is affecting ROE
LTD_TC	0.004	0.245	H_0 Accepted	Long-term debt to capital ratio does not affecting ROE
CF	5.91e-014	0.621	H_0 Accepted	Cash flow does not affecting ROE
FS	1.36e-008	0.396	H_0 Accepted	Firm size does not affecting ROE
DP	0.005	0.695	H_0 Accepted	Dividend payout does not affecting ROE
IC	-0.003	0.034**	H_0 Rejected	Interest coverage is affecting ROE
R	0.781			
R Squared	0.609			
Adj. R Square	0.498			
F Stat	5.458			
Prob (F Stat)	0.001***			

Table 7: Results of Ordinary Least Squares Regression on ROE
Source: SPSS

**Significant at 10%* ***Significant at 5%* ****Significant at 1%*

Table 7 shows that the long-term debt, cash flow, firm size and dividend payout variables does not affect ROE. The debt to capital ratio and interest coverage variable has a significant negative effect at 1% and 5% respectively. Table above show the results of F-test ordinary least squares for ROE p-value is 0.001 < 0.10, which mean that H_0 is rejected. The R_2 values of ROE is 0.609. It indicates that the dependent variable is affected by all of the independent variables of 60.9%. Whereas, the remaining value that is influenced by other variables not included in the model. Therefore, the alternative hypothesis of hypothesis 2 is accepted.

$$NPM = 0.102 + 0.000000000000789\ CF - 0.000000082\ FS + 0.006\ DP + 0.009\ IC - 0.002\ D\_TC + 0.000\ LT\_DC + 0.082$$

Variable	Common Effect		H_0 Results	Description
	Coefficient	Sig.		
C	0.102	0.223	-	-
D_TC	-0.002	0.140	H_0 Accepted	Debt to capital ratio is not affecting NPM
LTD_TC	0.000	0.532	H_0 Accepted	Long-term debt to capital ratio is not affecting NPM
CF	7.89e-013	0.002***	H_0 Rejected	Cash flow is affecting NPM
FS	-8.2e-008	0.001***	H_0 Rejected	Firm size is affecting NPM
DP	0.006	0.831	H_0 Accepted	Dividend payout is not affecting NPM
IC	0.009	0.171	H_0 Accepted	Interest coverage is not affecting NPM
R	0.746			
R Squared	0.556			
Adj. R Square	0.467			
F Stat	6.267			
Prob (F Stat)	0.000***			

Table 8: Results of Ordinary Least Squares Regression on NPM
Source: SPSS

**Significant at 10%* ***Significant at 5%* ****Significant at 1%*

The result of T-test on NPM is shown on the above table. The cash flow has a positive effect ,while firm size has a negative effect. Both are affecting at 1% significant level. This means that those variables are significantly affect NPM on the positive and negative relationship at 1%. It is shown that the p-value 0.000 < 0.10, which means that H_0 is rejected. The R_2 values of NPM is 0.556. It indicates that only 55.6% of the NPM is affected by all variable of the financial constraints. The remaining value

influenced by other variables is not included in the model. Therefore, the alternative hypothesis of hypothesis 3 is accepted.

Conclusion

The ROA is only significantly negative affected by debt to capital ratio at 1% significant level. While, the remaining variables shown no relationship to ROA. The ROE is affected by debt to capital ratio at negative relationship at 1% significant level and negative relationship of interest coverage ratio at 5% significant level. Cash flow and firm size variables are affecting profit margin (NPM). Cash flow is positively impacts the profit margin with 1 percent significance level, while firm size shown a negative relationship and significant impact with 1 percent significance level. Moreover, due to the weak correlation between selected financial constraints with firm's profitability, hence the result of this research is to reject H_0 and approve H_1 for all hypotheses. Also, the data sample used in this study cannot be generalized to any other sample of data. Different samples of data may result in different conclusions.

It is recommended for further study to add indicators such as financial slack, Tobin's average Q, firm age or sensitivity of investment to cash flow as independent variable as well as dependent variables such as stock return, working capital management or cost of capital. Firm size can be viewed as size of industry, place and market categories and probably from total sales, employees or value added features.

References

Almeida, H., Campello, M., & Weisbach, S. M. (2004). The Cashflow Sensitivity of Cash. *The Journal of Finance*. Vol.LIX, No.4, August 2004.

Anonymous, *Interest Coverage Ratio (ICR)*. (n.d.). Retrieved 2014, April from Ready Ratios: http://www.readyratios.com/reference/debt/interest_coverage_ratio_icr.html

Ayyagari, M., Demirgüç-Kunt, A., & Maksimovic, V. (2006). How Important Are Financing Constraints? The role of finance in the business environment. *World Bank Policy Research Working Paper* no.3820, january 2006, http://ssrn.com/ abstract=844565.

Bajkowski, J. (1999, August). Financial Ration Analysis: Putting the Numbers to Work. *AAII Journal*. August 1999, p1-7.

Bodnaruk, A., Loughran, T., & McDonald, B. (2013). Using 10-K Text to Gauge Financial Constraints. http://ssrn.com//abstract=2331544, November 2013.

Botten, E., & Karset, M. K. (2010). Financial Constraints for Norwegian Non-Listed Firms. *Thesis of The MSc Programme at BI Norwegian School of Management.*

Brigham, E. F., & Houston, J. F. (2013). *Fundamentals of Financial Management, Eighth Edition.* Cengage Learning.

Caballero, S. B., Teruel, P. J., & Solano, P. M. (2014). Working Capital Management ,Corporate Performance and Financial Constraints.*Journal of Business Reseach*, Vol.67, issue 3, March 2014,p332-338.

Carlton, D. W., & Perloff, J. M. (2000). *Modern Industrial Organization, Fourth Edition.* Pearson.

Cava, G. L. (2005). Financial Constraints, The User Cost of Capital and Corporate Investment in Australia.Research Discussion Paper, *Reserve Bank of Australia*, December 2005.

Cooper, D. R., & Schindler, P. S. (2011). *Business Research Methods Eleventh Edition.* Mc Graw Hill.

Crisóstomoa, V. L., López-Iturriagab, F. J., & Valleladob, E. (2012). Firm Size matters for Financial Constraints: Evidence from Brazil. *Sistemas & Gestão,* vol 7, 3, pages 490-501. http://www.uff.br/sg/index.php/sg.

Damodaran, A. (2010). *Applied Corporate Finance.* John Wiley & Sons.

Ferrando, A., & Mulier, K. (2013, August). Firms' Financing Constraints Do Perceptions Match the Actual Situation?, Working Paper Series, No.1577, August 2013, p.1-55. *European Central Bank (ECB)*.

Field, Andy, 2011, *Discovering Statistic using SPSS*, London, SAGE Publication.

Frochaux, S., & Fréssard, L. (2004). Corporate Investment, Cash Holdings and Financial Constraints: Insights from Japan. September 2004, p1-45.

Guariglia, A. (2013). Internal Financial Constraints, External Financial Constraints, and Investment Choice: Evidence from a Panel of UK Firms. *Centre for Finance and Credit Market Working Paper 07/03, School of Economics Internal Workshop Series University of Birmingham, p1-40.*

Gujarati, D. N. (2004). *Basic Econometrics, Fourth Edition.* The McGraw−Hill Companies.

Hadlock, C. J., & Pierce, J. R. (2010). New Evidence on Measuring Financial Constraints: Moving Beyond the KZ Index*. *The Review of Financial Studies*, Vol.23, No.5(May 2010), p.1909-1940, Oxford University Press, available on http://jstor.org/stable.

Kerr, William R., and Ramana Nanda. (2009), "Financing Constraints and Entrepreneurship." NBER WP 15498, *Harvard Business School Working Paper* 10-013, p.1-21.

Khan, M. Y., & Jain, P. K. (2008). *Financial Management, Fifth Edition.* Tata McGraw-Hill .

Lahr, H., & Mina, A. (2013, September). Dynamic financial constraints and innovation: Evidence from the UK Innovation Surveys. *Presented at The 4th Conference on Corporate R&D & Innovation,* September 2013, p1-35.

Lamont, O., Polk, C., & saa-Requejo, J. (2001). Financial Constraints and Stock Return.*The Review of Financial Studies*, Summer 2001, Vo.14, No.2, p.529-554.

Ljungqvist, A., & Farre-Mensa, J. (2013). Do Measures of Financial Constraints Measure Financial Constraints?, *NBER Working Paper Series* No.19551, October 2013.

Maestro, M. H., Miguela, A. d., & Pindadoa, J. (2001). Financial Constraints: Model and Evidence from International Data*. EFMA 2001 Lugano Meetings, Fortcoming*, availble at SSRN:http://ssrn.com/abstrct=274690.

Matthias. (2007, August). Financing Constraints: A New Test and an Application to Developing Countries. *Harvard University*, August 24 2007.

Moyen, N. (2004). Investment-cash Flow Sensitivities: Constrained versus Unconstrained Firms. *Journal of Finance,* Vol.59, Issue 5,p.2061-2092, October 2004.

Poznanski, J., Sadownik, B., & Gannitso, I. (2013). Financial Ratio Analysis: A Guide to Useful Ratio for Understanding your Social Enterprise's Financial Performance. December 2013, *Demonstrating Value*. www.demonstrating value.org.
Sinha, G. (2009). *Financial Statement Analysis.* PHI Learning Private Limited.

Susantono, B. (2012). Sustainable Freight Transport Policy in Indonesia. *UNCTAD XIII.* Qatar National Conference Centre,Doha,25 April 2012.

Taborda, J. (2014, 8-5). *Indonesia Interest Rate*. Retrieved 2014, 16-5 from Trading Economics: http://www.tradingeconomics.com/indonesia/interest-rate

Tang, H., & Wei, S. J. (2008). Real Effects of the Subprime Mortgage Crisis: Is it a Demand or a Finance Shock? *International Monetary Fund Working Paper* WP/08/186.

Weygant, Jerry J., Donald, E Kieso & Paul D. Kimmel,(2012), *Accounting Principles*, 12th edition, Danvers, John Wiley & Sons.

The World Bank Group. (n.d.). *Transport in Indonesia.* Retrieved 2014, April from The World Bank: http://web.worldbank.org.

Contact email: nenengd@gmail.com