Cash Holdings and Financial Constraints:
Evidence from the Indonesia Stock Exchange

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Abstract

This research attempts to investigate the factors that influence the level of liquidity of financially constrained firms, among others cash flow from operating, investing and financing activities, capital expenditures, short term debt, net working capital and rights issue. This research uses population of food and beverages companies during periods of 2002 – 2011 using the purposive sampling technique. The results of this research are cash flow from operating, investing and financing activities, capital expenditures and rights issue have influence on cash holdings of financially constrained firms. Cash flow from financing activities, short term debt and net working capital have influence on cash holdings of financially constrained firms with high investment opportunities category. Cash flow from operating and financing activities, capital expenditures and rights issue have influence on cash holdings of financially constrained firms with low investment opportunities category.

Keywords: cash holdings, cash flow, capital expenditures, short term debt, net working capital, rights issue.

1. INTRODUCTION

Financially constrained firms are companies that have limited internal funding and difficulties in accessing external funding. (Lamont el al, 2001; Guariglia, 2008). Two significant decisions that will affect the companies are what most profitable funds are there to finance their capital expenditures and how the companies manage their liquidity. The theory of liquidity management by Keynes (1936) stated that the companies that have large amounts of cash are the companies that can finance profitable projects. Furthermore, Keynes stated that the importance of liquidity management is highly dependent on companies' access to external funding. The companies that do not have difficulty in accessing external funding (financially unconstrained firms) save cash as precautionary motive to finance future investment. So liquidity management becomes irrelevant (not too important). On the contrary, the companies that have difficulties in accessing external funding, the liquidity management becomes very important.

Cash is a source of capital which usage is very much needed in financially constrained firms (Almeida, et al. 2004). The main function of cash is to finance the daily operations, but because of limited sources of capital to financially constrained firms, the cash has a dual function as a primary source for long-term investments as well as for the daily operations. So it becomes very important for the companies that are experiencing financial constraints to manage their liquidity levels. This does not happen to the companies that are not experiencing financial constraints because they still have access to sources of funds. Previous researches conducted by Almeida, et al (2004) and Chang, et al (2007) used the cash flow from operating activities as a proxy for internal funds that affected the level of liquidity in financially constrained firms. This study tries to explore the three cash flows. They are cash flow from operating, investing and financing activities, so it can be known the cash flow from what activities have the most influence on the level of liquidity. This study also explores the activities of the company's rights issue whether the proceeds of rights issue are partially saved in the form of cash and marketable securities or directly used for other activities such as capital expenditures and debt payments that are due.

Other variables that will be explored are the one that may influence the level of liquidity in the financially constrained firms : capital expenditures activities, the growth of short-term debt and net working capital. These variables were explored by Almeida, et al (2004) and Chang, et al (2007). Companies with high investment opportunities require a lot of funds to finance investment activities and they must keep to finance daily activities well. The financially constrained firms that have high investment opportunities, the question is how much they are able to accumulate cash. And what about the financially constrained firms with low investment opportunities? The question is whether they would be able to accumulate high amounts of cash. Therefore, this study will further explore the effect of the investment opportunities on financially constrained firms on their liquidity policy.

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2. LITERATURE REVIEW

Keynes (1936) stated that the company's cash management has the goals of 1) transaction balances: to pay for all the transactions made by the company, 2) precautionary balances: to guard against something that is not definite, 3) speculative balances: to invest in speculative financing instrument to gain greater benefits in the future.

Several researchers explored the company's cash holdings of financially constrained firms. Denis & Sibilkov (2006) showed that financially constrained firms had low cash accumulation. The company does have difficulty in accumulating cash because of limited internal funding and difficulties in accessing external funding. But the research conducted by Almeida et al (2004) proved that the cash holdings of financially constrained firms was higher than that of financially unconstrained firms.. The average cash holdings of financially constrained firms is between 12-18% (using DPR, Size, Bond Rating, and Commercial Paper Rating categorizations), while using the KZ Index categorization, the average cash holdings is about 5.5%. While non financially constrained firms, the average cash holdings is about 7-10% (using DPR, Size, Bond Rating, and Commercial Paper Rating categorizations), while using the KZ Index categorization, the average cash holdings is about 17%.

The previous researches of cash holdings in financially constrained firms have been conducted. Almeida et al (2004) used a large sample of manufacturing firms (SICs 2000 to 3999) over the 1971 to 2000 period with data available from COMPUSTAT's P/S/T. The results proved that cash flow, investment opportunities, size and short term debt growth have a positive effect on cash holdings. But capital expenditures,quisition and net working capital have a negative effect on cash holdings.

Custodio et al (2005) used a sample of US non-financial firms drawn from Compustat over the 1971-2002 period. The results proved that market to book ratio, size, net working capital and capital expenditures have a positive effect on cash holdings. By contrast cash flow and leverage have a negative effect on cash holdings.

Denis & Sibilkov (2006) used the sample that included U.S. public companies with financial data available on Compustat's Industrial Annual P-S-T, Research, and Full Coverage files at any time over the period 1985 to 2002. The results are that higher cash holdings are associated with higher firm value and this positive association is significantly stronger for financially constrained firms than for unconstrained firms. Higher cash holdings are associated with higher levels of investment for both constrained and unconstrained firms, there is a stronger positive association between investment and value for constrained than for unconstrained firms. These findings as consistent with the view that higher cash holdings of financially constrained firms are a value-increasing response to costly external financing but inconsistent with the view that constrained firms maintain higher cash balances to facilitate empire-building overinvestment.

Chang et al (2007) used size grouping, payout ratio grouping, discriminant score grouping for classifying companies into financially constrained and unconstrained firms by examining a large sample of Australian firms over the period 1990–2003. The results proved that the coefficients of firm size are positive and significant at the per cent level, suggesting that large firms tend to hold more cash. This result is consistent with the standard arguments of economies of scale in cash management. As expected, investment expenditure (*Expenditures*) and increases in non-cash net working capital (ΔNWC) have significantly negative impacts on corporate cash holdings. The significant and positive coefficient of change in short-term debt ($\Delta ShortDebt$) suggests that Australian firms do utilize short-term debt financing to build up cash reserves.

Han & Qiu (2007) used sample of U.S. publicly listed companies from 1997 to 2002. The results proved that cash flow and debt have a positive effect on cash holdings. On the contrary investment opportunities, size and previous cash holdings have a negative effect on cash holdings.

Some hypotheses are going to be examined and each is represented by very specific measures to define the explanatory factors of liquidity of financially constrained firms.

H1 : Cash flow has a positive effect on cash holdings of financially constrained firms

Contradictory opinions occured between Fazzari, et al. (1988) versus Kaplan and Zingales (1997) about the dependence of capital expenditures on cash flow in financially constrained firms, non financially constrained firms, and the accumulation of cash. According to Kaplan and Zingales (1997), the companies experiencing financial constraints have low cash while Fazzari, et al (1988) stated that the companies experiencing financial constraints have high cash because there are cash accumulations. Almeida et al (2004) proved there was an existence of cash-cash flow sensitivity in the financially constrained firms while non financially constrained firms did not have this phenomenon. This proves that financially constrained firms should save cash flow generated in the form of cash to guard against the need for future investment. As for non financially constrained firms, the effect of cash flow on the level of liquidity is not significant because these companies have easy access to external funds, so they can get cash easily

when needed. The results further proved that if there is a rise in cash flow, the company would save about $ 5-6 cents in cash (cash flow coefficients range from 0.05 to 0.06). These findings are supported by Arslan, et al. (2006), Chang et al (2007); Han and Qiu (2007);.

H2 : Capital expenditures have a negative effect on cash holdings of financially constrained firms.

Financially constrained firms used internal funding to finance their capital expenditures (Cleary, 1999). The items that are used to add internal funding are cash and marketable securities. In financially constrained firms, cash has a dual role namely to fund the company's operations and investment activities. Therefore, the higher the capital expenditures, the lower the cash holdings accumulated. The above conditions are found in research conducted by Almeida, et al. (2004); Denis & Sibilkov (2006); Chang et al (2007). More over Jani, et al. (2006) indicated that if the capital expenditures have a negative impact on cash accumulation, the company should implement the pecking order hypothesis; whereas, if capital expenditures have a positive impact on cash accumulation, the company should implement a trade-off theory related to liquidity management theory.

H3 : Short term debt has a positive effect on cash holdings of financially constrained firms.

Myers (1977), Flannery (1986), Kale and Noe (1990), Diamond (1993) stated companies with high assymetric information will issue short-term debt. The addition of short-term debt is expected to increase liquidity so the companies do not use a lot of cash. One characteristic of financially constrained firms is the presence of high assymetric information. So it is more likely for these companies to issue short-term debt than long-term debt. Issuance of short-term debt than long-term debt is related to the risks faced by the creditors and beliefs regarding the payment of debt (Dasgupta and Sengupta, 2007). Arslan et al (2006), Lee and Song (2007) proved that there is a negative effect of the short term debt on the level of liquidity in financially constrained firms. But the research conducted by Almeida, et al. (2004), Chang et al (2007) revealed a positive effect of short-term debt on cash holdings in financially constrained firms. This indicates that the addition of short term debt is mostly accumulated in the form of cash and marketable securities. Chang et al (2007) stated that the addition of short-term debt can improve the company's liquidity.

H4 : Net working capital has a negative effect on cash holdings of financially constrained firms.

Jani et al (2006) stated that items of working capital other than cash and marketable securities are inventories and accounts receivables. Firms whose cash conversion cycles are short do not have to hold cash for precautionary reasons. Consequently, one would expect a positive relationship between cash and liquid asset substitutes. As liquid asset substitutes can be converted into cash, large proportions of these assets may be associated with low levels of cash holdings. That could give negative effect of net working capital to the level of liquidity. This is commonly called the substitution effect (the items in working capital that can be used to change the level of cash). Almeida et al (2004), Chang et al (2007) proved that the net working capital has a negative effect on the level of liquidity of financially constrained firms.

H5 : Rights issue has a positive effect on cash holdings of financially constrained firms.

Rights issue aims to seek additional funds for a company's use including additional investments or to pay debts that fall due. While if companies are not doing a rights issue, it means they are not troubled by their financial position and they have good financial performance. So they do not require additional funds to overcome financial difficulties. A rights issue will be an important source of funding if the decision to raise capital from the issuance of shares brings positive information about the prospects to the company's performance in the future. (Eckbo & Masulis, 1992). The purpose of the rights issue as mentioned above is of a wide range. If the funds gained from the rights issue are directly used for various purposes, the rights issue will have a negative effect on the level of liquidity. Vice versa, if the funds gained from the rights issue are not fully used, but they are stored in the form of cash and marketable securities, the rights issue will have a positive influence on the level of liquidity. In financially constrained firms with limited internal funding and difficulties in accessing external funding, the funds gained from the rights issue are partly accumulated as cash and marketable securities to anticipate investing in the future (precautionary motive).

3. THE METHODOLOGY AND MODELS

3.1. Population and Sampling Techniques

Population used in this study is a food and beverage industry that was experiencing financial constraints on the Indonesia Stock Exchange during 2002 to 2011. The sampling technique was purposive sampling, that is non-probability sampling technique based on the experience or judgment to select a sample according to the characteristics required in the study (Zikmund, 2000).

The criteria used for the sampling of this research are:

a. Food and beverage companies experienced financial constraints on the Indonesia Stock Exchange during 2002 to 2011.
b. The companies experienced financial constraints every year in a row during the observation period.

Sample selection procedure is given in table 1

Table 1
Sample Selection Procedure

Companies	Number of companies each year	Total Companies For 10 years
Food and beverages companies	17 companies	170 companies
	2 companies have incomplete data	20 companies
	15 companies	150 companies*
Financially constrained firms	10 companies for ten consecutive years are classified as financially constrained firms.	100 companies

*150 companies are analyzed by logistic regression test

3.2. Definition and Measures of Variables

3.2.1. Models

We examine the following panel data models :

$CH_{i,tFC} = a + b\ CFO_{i,t} + c\ CFI_{i,t} + d\ CFF_{i,t} + e\ CAPEX_{i,t} + f\ \Delta STD_{i,t} + g\ NWC_{i,t} + h\ RI_{i,t}$

$CH_{i,tHIO,FC} = a + b\ CFO_{i,t} + c\ CFI_{i,t} + d\ CFF_{i,t} + e\ CAPEX_{i,t} + f\ \Delta STD_{i,t} + g\ NWC_{i,t} + h\ RI_{i,t}$

$CH_{i,tLIO,FC} = a + b\ CFO_{i,t} + c\ CFI_{i,t} + d\ CFF_{i,t} + e\ CAPEX_{i,t} + f\ \Delta STD_{i,t} + g\ NWC_{i,t} + h\ RI_{i,t}$

where :

CH_{FC} = cash holdings of financially constrained firms
$CH_{HIO,FC}$ = cash holdings of high investment opportunities of financially constrained firms
$CH_{LIO,FC}$ = cash holdings of low investment opportunities of financially constrained firms
CFO = cash flow from operating activities
CFI = cash flow from investing activities
CFF = cash flow from financing activities
CAPEX = capital expenditures activities
ΔSTD = short term debt growth
NWC = net working capital
RI = rights issue

3.2.2. Variables Definition

This research has two kinds of variables : dependent and independent variables. Dependent variable is cash holdings, and independent variables are cash flow from operating, investment and financing activities, capital expenditures activities, short term debt growth, net working capital, and rights issue. We use investment opportunities to divide sample into two categories. They are 1) high investment opportunities of financially constrained firms, and 2) low investment opportunities of financially constrained firms. The definitions and measures of variables are given in table 2.

Table 2
Definitions and Measures of Variables

Variables	Definitions	Proxies
CH	Cash holdings	(cash + marketable securities)t – (cash + marketable securities)t-1 divided by (cash + marketable securities) t-1
CASH FLOW 1	Cash flow from operating activities	CASH FLOW 1 = (Cash flow from operating activities)t divided by (net fixed assets) t
CASH FLOW 2	Cash flow from investing activities	CASH FLOW 2 = (Cash flow from investing activities)t divided by (net fixed assets)t.
CASH FLOW 3.	Cash flow from financing activities	CASH FLOW 3 = (Cash flow from financing activities)t divided by (net fixed assets)t
CX	Capital expenditures (the growth of net fixed assets).	Capital expenditures = Net Fixed Assets t – Net Fixed Assets t-1 divided by Net Fixed Assets t-1
STD	Short term debt growth	ΔSTD = short term debt t – short term debt t-1 divided by short term debt t-1
NWC	Net working capital	(Non-cash of working capital)t divided by (total assets)t
Dummy variable of	RI (Rights issue) is the	This study used a dummy variable to

RI	issuance of new shares by the company.	determine whether the company made a rights issue or not. If the company did the rights issue, it was given the symbol 1 and vice versa if the company did not do a rights issue, it was given the symbol 0.
Investment opportunities	Proxy of investment opportunities uses MTBV (market to book value).	Sample of financially constrained firms will be split again into the category of high and low investment opportunities. Above the average MTBV of the sample is categorized as high investment opportunities firms, while the same or below the average MTBV of the sample is considered low investment opportunities firms.

3.3. Technique Categorization

Food and beverage companies that are listed on the Indonesia Stock Exchange during 2002 - 2011 will be categorized into financially constrained firms and non financially constrained firms. Initial categorization is by using (1) dividend per share (DPS) (2) cash flow / net fixed assets, and (3) coverage ratio. In Indonesia, there are many companies that do not distribute dividends every year because they experience financial constraints or existing funds are used to finance their growth. So this study adds cash flow / net fixed assets and the coverage ratio as the initial category. Explanation for the initial categories is as follows:

1. Dividend per share.

The initial categories developed by Cleary (1999).

a) Financially constrained firms (symbol 1): companies that distribute dividends per share each year
b) Non financially constrained firms (symbol 0): companies that do not distribute dividends per share each year.

2. Cash flow / net fixed assets

The initial categories used by Guariglia (2008) stated that the company is experiencing financial constraints when its cash flow / net fixed assets is low. Cash flow used is the total cash flow from operating, investing and financing activities. Cash flow / net fixed assets are divided into two, namely:

a) The above or equal to the average of the sample, categorized as non financially constrained firms (symbol 1).
b) At the bottom of the sample, categorized as the financially constrained firms (symbol 0).

3.Coverage ratio

The initial categories are used by Guariglia (2008) which stated that the company is experiencing financial constraints when it has a lower coverage ratio. Coverage ratio is EBIT divided by interest payments. Coverage ratio is divided into two:

a) The above or equal to the average of the sample, categorized as non financially constrained firms (symbol 1)
b) At the bottom of the sample, categorized as the financially constrained firms (symbol 0).

Having obtained the initial categories based on the indicators above, this study is followed by a logit analysis of financial ratios. The better a company's financial ratios are the relatively easier in seeking external funding. Creditors usually have more confidence to lend to companies that are performing well compared to companies with bad performance. Using the logit analysis is also intended to strengthen the grouping because a case can occur where a company that is based on the initial category is experiencing financial constraints. After applying logit analysis to financial ratios, the companies may continue to experience financial constraints, or become not constrained anymore (to be non financially constrained firms). And, financial ratios used are among others, current ratio, net income margin, net sales growth, debt ratio, dividend payout ratio, capex, cash flow / net fixed assets and ln net fixed asset.

4. THE FINDINGS

4.1. Results of Company Categorization

Prior to the logit analysis, financial ratios were tested to find out whether there was multicollinearity or not. The following was free from multicollinearity : net income margin, net sales growth, dividend payout ratio, capital expenditures, cash flow, and debt ratio. The sample consisted of 17 companies for ten years so the total amounted to 170 companies. But the twenty companies had incomplete data so that the total samples used in this study amounted to 150 companies, which consisted of 15 companies for ten years. Initial categories were based on (1) dividend per share, (2) cash flow / net fixed assets, (3) coverage ratio, in which the companies are categorized as financially constrained if

minimum they meet two of the indicators. Outcome category can be seen in Table 3 : the financially constrained firms amounted to 112 companies while non financially constrained firms amounted to 38 companies.

Table 3
Initial Categorization Using Dividend Per Share, Cash flow/Net Fixed Asset, and Coverage Ratio

Group of Companies	Total
Financially Constrained Firms	112
Non Financially Constrained Firms	38
Total	150

4.2. Results of Logistic Regression Test

Logit analysis results are shown in Table 4. The financially constrained firms are as much as 112 companies in which 109 firms are still classified as financially constrained firms and 3 companies move to non financially constrained firms. By contrast, there are 38 non financially constrained firms, 10 of them are still classified as non financially constrained firms, and 28 companies move to the financially constrained firms. The final result shows that there are 137 financially constrained firms and 13 non financially constrained firms. But only 10 companies for ten consecutive years are classified as financially constrained firms. So these companies will be analyzed by using panel data. The total truth of classification in this study is 79.3%. The result is better than studies made by Cleary (1999), with a classification rate of 74% truth.

Table 4
Classification of Companies Using Logit Analysis

Classification Table[a]

Observed			Predicted		
			STATAKH		Percentage Correct
			0	1	
Step 1	STATAKH	0	109	3	97,3
		1	28	10	26,3
	Overall Percentage				79,3

a. The cut value is ,500

The resulting model fit that the data used will match the model established. This is shown in Table 5, which shows Ho received Hosmer and lemeshow test has a p value of 0.269> 5%. Significant variables to categorize companies into financially constrained and non financially constrained firms (see Table 6) are the dividend payout ratio (p value 0.087 <10%), cash flow (p value 0.006 <5%) and debt ratio (p value 0.081 <10%). While the variables of net income margin, net sales growth and capex are not significant. The greater the dividend, the greater the cash flow and the lower debt owned by the company, the more likely the company is not having financial constraints.

Table 5

Hosmer and Lemeshow Test

Step	Chi-square	df	Sig.
1	9,943	8	,269

Table 6

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)	95,0% C.I.for EXP(B)	
								Lower	Upper
Step 1[a]	NIM	,401	,295	1,843	1	,175	1,493	,837	2,662
	NSG	-,444	,825	,290	1	,590	,641	,127	3,231
	DPR	,012	,007	2,920	1	,087	1,012	,998	1,027
	CX	,276	,562	,241	1	,623	1,318	,438	3,963
	CF	3,111	1,131	7,563	1	,006	22,449	2,445	206,148
	DR	-2,518	1,084	5,398	1	,020	,081	,010	,674
	Constant	-,104	,559	,034	1	,853	,901		

a. Variable(s) entered on step 1: NIM, NSG, DPR, CX, CF, DR.

4.3. Statistic Summary

Table 7 (see Appendix on page 10) shows the statistic summary of the financially constrained firms.

4.4. Panel Data Results of Financially Constrained Firms

The test of panel data can be done by three methods, namely ordinary least square, fixed effect and random effect methods. Table 8 (see Appendix on page 11) shows that the highest R-square, the highest Adjusted R-square, Durbin watson> 2 and the smallest residual sum of squares of the fixed effect method. The most significant variables are fixed and random effect methods. Based on these criteria, among ordinary least square, fixed effect and random effect methods, the best is fixed effect method.

Table 9
The Summary of Panel Data Test

Financially Constrained Firms - Fixed Effect Method				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob**
C	0.367872	0.095265	3.861551	0.7510
CFO	0.237447	0.126470	1.877498	0.0640
CFI	-0.189353	0.063993	-2.958974	0.0040
CFF	-0.126803	0.057366	-2.210427	0.0298
CX	-0.115660	0.060621	-1.907904	0.0599
STD	-0.234322	0.179732	-1.303731	0.1959
NWC	-0.973525	1.150575	-0.846120	0.3999
RGI	0.175203	0.076017	2.304789	0.0237
R-squared	0.490861			
Adjusted R-squared	0.392714			
Financially Constrained Firms of High Investment Opportunities – Ordinary Least Square Method				
CFO	-0.667851	0.314546	-2.123220	0.0535
CFI	-0.235045	0.084241	-2.790151	0.0153
CFF	0.009386	0.122842	0.076407	0.9403
CX	-0.071983	0.201716	-0.356853	0.7269
STD	-0.726502	0.398688	-1.822234	0.0915
NWC	2.838269	1.554612	1.825708	0.0909
RGI	0.268998	0.289929	0.927806	0.3704
R-squared	0.676304			
Adjusted R-squared	0.526906			
Financially Constrained Firms of Low Investment Opportunities - Fixed Effect Method				
C	0.339658	0.112099	3.029989	0.0035
CFO	0.341388	0.148848	2.293539	0.0251
CFI	-0.176605	0.140964	-1.252836	0.2148
CFF	-0.143136	0.070919	-2.018311	0.0477
CX	-0.157750	0.068116	-2.315910	0.0237
STD	-0.174354	0.219693	-0.793627	0.4303
NWC	-1.371623	1.409138	-0.973378	0.3340
RGI	0.165825	0.081784	2.027584	0.0467
R-squared	0.354557			
Adjusted R-squared	0.215539			

Table 9 shows the results of panel data test for financially constrained firms, financially constrained firms with high investment opportunities, and financially constrained firms with low investment opportunities. The following describes the results of panel data test of financially constrained firms. Cash flow from operating activities has a significant positive effect on cash holdings with p value 0.0640 < 10%. Cash flow from investing activities has a significant negative effect with p value 0.0040 < 1%. Cash flow from financing activities has a significant negative effect with p value 0.0298 < 5%. The results can imply that if the cash flow from operating activities increases it will be accumulated as cash holdings. The coefficient is 0.237, meaning that any increase in cash flow from operating activities of Rp 1 will be accumulated as cash holdings of Rp 0.237. The amount of cash flow from operating activities is determined by net income. It means that financially constrained firms accumulate their cash holdings either on cash or cash equivalent depending on the amount of the cash flow from operations, which are also indirectly dependent on net income produced by the companies.

Cash flow from investing and financing activities has a negative effect on cash holdings. It means increasing cash flow from these two activities, makes the accumulated cash holdings lower. It explains further research conducted by Kristianti (2013) which proved that the cash flow from financing activities has a positive effect on capital expenditures of financially constrained firms. This indicates that capital expenditures are funded by cash flow from financing activities. When cash flow financing activities increases and the company makes capital expenditures, the company may also use the cash holdings to fund capital expenditures. So cash flow from financing activities has a negative effect on the accumulation of cash holdings. The above results support the first hypothesis which states that cash flow has a positive effect on cash holdings of financially constrained firms.

Capital expenditures have a significant negative effect on cash holdings of financially constrained firms with p value 0.0599 < 10%. This suggests that the higher capital expenditures of these companies, the lower the accumulated cash holdings. These types of companies have limited internal funds and external financing resources, so that if funds are used for capital expenditures, the accumulated cash holdings will be reduced. This supports the research by Almeida et al (2004), Dennis and Sibilkov (2006), Lee and Song (2007), and Chang et al (2007) proved that capital expenditures have a negative effect on cash holdings of financially constrained firms. Financially constrained firms used internal funding to finance their capital expenditures (Cleary, 1999). The items that are used to add internal funding are cash and marketable securities. In financially constrained firms, cash has a dual role namely to fund the company's operations and investment activities. Therefore, the higher the capital expenditures, the lower the cash holdings accumulated. The coefficient is -0.116, meaning that any increase in capital expenditures of Rp 1 will reduce accumulation of cash holdings of Rp 0.116. The above results also indicate that the second hypothesis is proven, that is capital expenditures have a negative effect on cash holdings of financially constrained firms.

The third hypothesis which states that short term debt has a positive effect on cash holdings of financially constrained firms is not proven, with p 0,1959 value > 10%. This suggests that the addition of short-term debt is not accumulated as cash and cash equivalents. But it is used to fund capital expenditures of the company (Kristianti, 2013).

The fourth hypothesis which states that net working capital has a negative effect on cash holdings of financially constrained firms is not proven, with the p value 0.3999 > 10%. It shows that net working capital is not a cash substitute.

Rights issue has a significant positive effect on cash holdings of financially constrained firms with p value 0.0237 < 5%. Rights issue aims to seek additional funds for a company's use including additional investments or to pay debts that fall due. It increases the shares of shareholder ownership and the number of shares outstanding so that there is more liquid trading. While companies are not doing a rights issue because they are not troubled by their financial position and they have good financial performance. So they do not require additional funds to overcome financial difficulties. A rights issue will be an important source of finance if the decision to raise capital from the issuance of shares brings positive information about the prospects to the company's performance in the future (Eckbo & Masulis, 1992).

The purpose of rights issue as mentioned above is of a wide range. If the funds gained from the rights issue are directly used for various purposes, the rights issue will have a negative effect on the level of liquidity. On the contrary, if the funds gained from the rights issue are not fully used, but are stored in the form of cash and marketable securities, the rights issue will have a positive influence on the level of liquidity. In financially constrained firms with limited internal funding and difficulties in accessing external funding, the funds gained from rights issue are partly accumulated as cash and marketable securities to anticipate investing in the future (precautionary motive). The coefficient is 0.17, meaning that Rp 1 of fund generated from rights issue will be accumulated as cash holdings of Rp 0.175. The above results indicate that the fifth hypothesis is proven : rights issue has a positive effect on cash holdings of financially constrained firms.

4.5.Panel Data Results of Financially Constrained Firms with High Investment Opportunities

Table 10 shows that the average market-to-book value of companies that experience financial constraints on food and beverage is 2.5. The companies under the average market-to-book value are categorized as low investment opportunities' companies, and above the average market-to-book value are considered high investment opportunities' companies. These results indicate that two companies have high, and eight companies have low investment opportunities. The test of panel data for financially constrained firms both of high and low investment opportunities categories can be done by three methods, namely ordinary least square, fixed effect and random effect methods. But random effect method can not be done for high investment opportunities category because the number of individuals (2 companies) is smaller than the coefficients including intercept (8 coefficients). The selection of the best method for financially constrained firms that have high or low investment opportunities categories are shown in Table 11 and 12.

Panel data results of financially constrained firms with high investment opportunities category can be seen in table 9. The results show that cash flow from investing activities has a significant negative effect on cash holdings with p value 0.0153 < 5%. Short term debt has a significant negative effect on cash holdings with p value 0.0915 < 10%, and net working capital has a significant positive effect on cash holdings with p value 0.0909 < 10%. Cash flow from investing activities has a significant negative effect on cash holdings that the accumulation of cash holdingss of financially constrained companies with high investment opportunities do not come from this type of cash flow.

Short-term debt has a significant negative effect on cash holdings. This indicates the addition of short-term debt is not accumulated as cash holdings. The result supports the research conducted by Arslan et al (2006), Lee and Song (2007) that proved that there is a negative effect on the short term debt to the level of liquidity in financially constrained firms. Financially constrained firms are experiencing underinvestment if they have high investment opportunities. Then the addition of short-term debt is used to fund capital expenditures rather than to accumulate cash holdings. This supports the research by Kristianti (2013) that proved that the short-term debt has a significant positive effect on capital expenditures of financially constrained firms.

The next result proves that net working capital has a significant positive effect on cash holdings. The higher the net working capital, the higher the cash holdings. Financially constrained firms with high investment opportunities need more fund to finance their growth. If the company's fund is embedded in accounts receivable and inventory, the company requires a lot of cash as a motive to guard future company's activities (precautionary motive).

4.6.Panel Data Results of Financially Constrained Firms with Low Investment Opportunities

Panel data results of financially constrained firms with low investment opportunities category can be seen in table 9. The results show that cash flow from operating activities has a significant positive effect on cash holdings with p value 0.0251 < 5%. Cash flow from financing activities has a significant negative effect on cash holdings with p value 0.0477 < 5%. Capital expenditures have a significant negative effect on cash holdings with p value 0.0237 < 5%. Rights issue has a significant positive effect on cash holdings with p value 0.0467 < 5%. This result is almost the same as that of financially constrained firms in general because most samples are companies with low investment opportunities.

5. SUMMARY AND CONCLUSIONS

Cash flow from operating activities proved to have a positive impact on cash holdings of financially constrained firms. This result also proves the existence of cash-cash flow sensitivity that supports the theory argued by Almaeda (2004), and Chang et al (2007). It indicates that the company should be able to manage its operations to produce sufficient cash flow to fund daily activities, capital expenditures and cash accumulation. Funds generated by cash flow from financing activities should be managed so that not all are used to fund capital expenditures and operational activities of the company, but they are also put aside for cash holdings. Rights issue can be used as an alternative source of funding to add cash holdings.

Financially constrained firms have high investment opportunities, they also need to manage their operations, considering the companies are experiencing internal financial constraints and difficulty in accessing external funding. But, they still have high investment opportunities. With sufficient internal funding, the companies are expected to utilize their investment opportunities. The companies also need to manage receivables and inventory policies, so that the funds that are embedded in this account can be immediately disbursed in cash.

Endnotes :

Sample selection is taken from manufacturing companies, particularly food and beverages companies. Financial ratios are used to categorize companies into financially and non financially constrained firms because they are more suitable to be applied to manufacturing companies rather than banks or other financial institutions. And financial firms' cash holdings may be subject to other influences, such as government regulation.

This study uses panel data test to prove the hypothesis because the data being analyzed is a combination of cross section and time series. Panel data test has three methods: ordinary least square, fixed effect, and random effect methods. Selection is done as to which method gives the best result instead of using regression test, that only produces one output.

This research has tried to use proxy for cash holdings variable with cash holdings divided by total assets, but the result is too bad. R-square and Adjusted R-square are very low.

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APPENDIX

Table 7
Statistic Summary

Variables	Financially Constrained Firms	The Whole Company
Average CH	0,407351212	0,831376755
Average CFO	0,206364046	0,350123808
Average CFI	-0,076740793	-0,122809574
Average CFF	0,133808127	0,081272618
Average CX	0,069929815	0,105478943
Average STD	0,209005055	0,205123757
Average NWC	0,031815659	0,070184532
RGI	6 times of rights issue during 2002 – 2011	8 times of rights issue during 2002 – 2011

Table 8
Comparison of Panel Data Test Results
Using Ordinary Least Square, Fixed, and Random
Effect Methods of Financially Constrained Firms

Coefficient	Ordinary Least Square Method	Fixed Effect Method	Random Effect Method	The best Criteria
R-squared	0.17468	0.490861	0.211884	FEM
Adjusted R-squared	0.121433	0.392714	0.151918	FEM
Durbin-Watson stat	1,363243	2.135141	1,628578	FEM, DW>2
Sum of Square Residual	20,68640	12,76141	16,50239	FEM
Significant Variables	CFI, NWC, RGI	CFO, CFI, CFF, CX, RGI	CFO, CFI, CFF, STD, RGI	FEM & REM

Table 10
Market-to-Book Value
of Financially Constrained Firms

Companies	Average MTBV	Categories
1	4.605	High investment opportunities
2	0.815	Low investment opportunities
3	2,092	High investment opportunities
4	1,703	Low investment opportunities
5	9,437	High investment opportunities
6	0,886	Low investment opportunities
7	2,159	Low investment opportunities
8	0,985	Low investment opportunities
9	1,105	Low investment opportunities
10	1,216	Low investment opportunities
Average	2,500	

Table 11
Comparison of Panel Data Test Results
Using Ordinary Least Square and Fixed Effect Methods
of Financially Constrained Firms
with High Investment Opportunities

Coefficient	Ordinary Least Square Method	Fixed Effect Method	The best Criteria
R-squared	0.676304	0.844510	Fixed effect method
Adjusted R-squared	0.526906	0.731426	Fixed effect method
Durbin-Watson stat	2.086179	1.746293	Durbin watson > 2 (Ordinary least square method)
Sum of Square Residual	2.688774	18.44935	Ordinary least square method
Significant Variables	CFI, STD, NWC	CFI, RGI	Ordinary least square method

Table 12
Comparison of Panel Data Test Results
Using Ordinary Least Square, Fixed, and Random
Effect Methods of Financially Constrained Firms
with Low Investment Opportunities

Coefficient	Ordinary Least Square Method	Fixed Effect Method	Random Effect Method	The best Criteria
R-squared	0.168677	0.354557	0.218270	Fixed effect method
Adjusted R-squared	0.100349	0.215539	0.142269	Fixed effect method
Durbin-Watson stat	1.818762	2.366908	1.941365	Durbin watson > 2 (Fixed effect method)
Sum of Square Residual	13.49299	10.47602	12.68807	Fixed effect method
Significant Variables	NWC, RGI	CFO, CFF, CX, RGI	CFO, CFF, CX, RGI	Fixed and random effect method