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<http://transylvanianreviewjournal.org/> Interdependency of Investment and Financing with Financial Constrains: Evidence from Emerging Market Economies Riskin Hidayat Business and Economics Faculty, Diponegoro University, Semarang, Indonesia Sekolah Tinggi Ilmu Ekonomi 'YPPi' Rembang, Indonesia * Udin, Sugeng Wahyudi and Harjum Muharam Business and Economics Faculty, Diponegoro University, Semarang, Indonesia

Abstract
 Aim: This study [aims to](#) investigate [the sensitivity level of liquidity and leverage to investment decision between non- financially and financially constrained firms](#) at low and high investment firm. Materials and Methods: The sample includes sharia [firms listed in Indonesia Stock Exchange in the period of 2011](#) to 2015 and 96 firms are selected as sample with 480 observations for data collection. Results: The results reveal that liquidity and leverage have a positive influence to investment decision of all sampled firms, and also firms with low and high investment value. [Liquidity is more sensitive to investment decision for financially constrained firms](#) and for firms with low investment value. Leverage [is more sensitive to investment decision for non -financially constrained firms](#) with high investment value. Conclusion: This study concludes that there is a close interdependency between investment decision and financing decision. Keywords: Interdependency, investment decision, liquidity, leverage, financially constrained, non-financially constrained. * Corresponding author: Business and Economics Faculty, Diponegoro University, Semarang, Indonesia 6669

Introduction
 The purpose of the firm is to increase the value of the firm. Firm value could be achieved if the firm invests. Investment is an important factor in the firm's financial function. Kim (2018) stated that firm value is solely determined by investment decisions. The opinion could be interpreted that the investment decision is very important, because to achieve the firm's goal is to maximize shareholder wealth will only be generated through firm investment activities. Investment decision in this research is capital expenditure. It is the investment in fixed assets such as land or property, building, and equipment. According to Brigham and Ehrhardt (2013), capital budgeting is the overall planning and decision-making process of spending on funds with a refund period exceeding one year. The basic motive for capital expenditure is for the expansion, replacement, or renewal of fixed assets or for benefits that may be less tangible in the long-term. Shibata and Nishihara (2018) stated that under [perfect market conditions there is no relationship between investment decisions and financing decisions](#). According to Brigham and Houston (2012), despite the perfect market assumption eliminated, separation of investment and financing decisions still occur despite slight modifications that is managers should use the weighted average capital cost as a discount rate. Even when capital structure has become relevant, whether due to tax factors or due to other factors, [there is still no direct relationship between investment and financing. The existing is that the investment program is decided first and then](#) decided to financing. In order for investment decisions are really aimed at maximizing firm value, so investment decisions should be independent of financing decisions. Financing decisions can be an indicator by the market to predict future prospects. Firms with good prospects will address the need for funds by borrowing any investment opportunity. However, if the prospect of a firm is unfavorable it will make the need for funds continuously, so the firm will overcome the problem of financing needs with new investment opportunity. The financing source of the firm can basically come from internal and external sources. Funds collected from

accumulation of unearned profit shares are said to be internal funds. Of course, with the development of the firm, internal funds are insufficient, so that funds from external sources are required. Funds originating from external sources can be in the form of debt to other parties or in the form of capital collected from the owner (through the issuance of stock to the public or private placement). Modigliani and Miller's statement is different from the results of empirical research. Empirical research indicates a linkage between investment decisions and financing decisions, in this case there is a link between the level of liquidity and the level of investment in many firms. The empirical evidence of Ogawa (2015), Guariglia and Yang (2016), Quader (2016) indicate that there is a relationship between liquidity and debt with investment decisions. The results of empirical research in Indonesia are shown by Agung (2000) and Prasetyantoko (2007). Similar research findings are also recommended by Hoshi, Kashyap, and Scharfstein (1991) in Japan. From the above empirical findings, it shows that there is a distinction between the theory that investment decisions and financing decisions are independent of the practices of firms. In addition, the results of the research indicate a discrepancy in the findings of the sensitivity of firm investment decisions with liquidity when moderated by financial constraints. Bayraktar (2014), Ameer (2014), Črnigoj and Verbič (2014), Ogawa (2015), Guariglia and Yang (2016), Quader (2016), George, Kabir, and Qian (2011) and Kim (2014) found evidence that firm investment decisions are more sensitive to liquidity in financially constrained firms hereafter abbreviated FC, compared to non-financially constrained firms hereinafter abbreviated as NFC. In contrast, Bassetto and Kalatzis (2011), Chen and Chen (2012) and Cull, Li, Sunc, and Xu (2014) found that firm investment decisions are more sensitive to liquidity in NFC firms than FC firms. Similarly, the results of debt sensitivity research on investment decisions of FC and NFC firms show different findings. The results of Ameer (2014), Guariglia and Yang (2016) that investment decisions are more sensitive to debt to FC firms than NFC firms. In contrast, Ogawa (2015) found that the firm's investment decision was more sensitive to debts to NFC firms. Research of Agung (2000) shows that the investment of NFC and FC firms differs in response to debt levels. Investments issued by FC firms respond negatively to debt levels, whereas NFC firms have no effect on investment. Given the contrast of empirical evidence above, this study will further examine the factors that distinguish the two opposing evidence, namely by using the FC and NFC variables as moderators. Financial constraints are the limitations of the firms in obtaining capital from available financing sources to invest. According to Kaplan and Zingales (1997), financial constraints occur when firms face a difference between the cost of capital from internal financing sources and the cost of capital from external financing sources. Based on the above description and the results of empirical research, this research aims at examining the level of influence of liquidity and debt to the investment decisions of the firm both the firm as a whole in the sample and firm with low and high investment in FC and NFC firm. FC firms refer firms that have financial constraints in making investments, while NFC firms refer to firms that have no financial constraints in investing. FC firms tend to use liquidity to fund investments. This is because FC firms have limited access to capital markets and are relatively smaller, showing financial constraints that will make it difficult for firms to take advantage of investment opportunity for investment. In other words, FC firms have low firm value. Fazzari, Hubbard, and Petersen (1988) noted that the existence of information asymmetry on external financing would incur external financing costs more than internal financing, which resulted in less FC firms having access to external financing. With these limitations, the investment decisions of FC firms tend to be more sensitive to liquidity. Based on the difference of research result, this research intends to reconcile the level of influence of

liquidity and debt to investment decision by entering variable of FC and NFC as moderator in firm as a whole and firm having low and high investment. In addition, this study also uses the classification of financial constrains firms that are different from the previous research. Fazzari et al. (1988) classified financial constrains into three categories, that is dividend payout ratio of low (<10%) or grade 1 to high (20%) or class 3. Kaplan and Zingales (1997) classified samples into five groups from financial low to high constrains with an objective multivariate classification approach. Bassetto and Kalatzis (2011) measured financial constrains using dummy variables of financial indicators, namely cash holding (high and low), profitability (high and low), cash flow (high and low), debt (high and low), and sales (high and low). Bayraktar (2014) measures financial constrains using dummy variables, namely size of capital stock (high and low), number of laborers (few and many), dividend payout ratios (high and low), dividend to capital ratios (high and low), bond rating (no bond rating and bond rating), total debt to capital ratio (high and low), KZ Index. This study classified NFC and FC firms using four stages, namely dividend policy, cash flow, debt, and investment opportunity.

Literature Review In theory, investment decisions are separated from financing decisions. This is in line with the statement of Modigliani and Miller (1958) that under perfect market conditions there is no relationship between investment decisions and financing decisions. However, the results of empirical research indicate that investment decision is influenced by financing decision, which includes liquidity and debt and its sensitivity to financial constrains firm. Financial constraints are the limitations of firm in obtaining capital from available financing sources to invest. According to Kaplan and Zingales (2000), financial constraints occur when firms face a difference between the cost of capital from internal financing sources and the cost of capital from external financing sources. By that definition all firms can be classified as financial constraints. Having external financing that incurs a small transaction fee is suitable to put the firm in the category of financial constraints. The definition is also useful to distinguish the firm according to the financial constraints category. Fazzari et al. (1988) state that financial constraints show the sensitivity of investment and liquidity caused by information asymmetry in the capital market resulting in external financing such as debt is more expensive than internal financing so it is not risky for managers to use internal financing sources to invest. According to Myers and Majluf (1984), information asymmetry occurs because managers are more aware of the firm's current earnings and investment opportunity compared to outside investors. The manager also acts in accordance with the interests of the firm's existing shareholders. Financial constraints are also caused by agency problems. According to Jensen and Meckling (1976), managers prefer to use internal capital to finance investment because internal capital can reduce the involvement of oversight from shareholders or external part that is to investment decisions made by managers. Owners control management to keep the utilization of internal capital for investment in line with the interests of the owner. Investment decisions made by the firm are influenced by the ability of the firm to generate cash that can meet long-term or short-term needs or the so-called liquidity of the firm. Liquidity is the firm's ability to fulfill its liabilities, especially short-term liabilities (Brigham & Ehrhardt, 2013). According to Brigham and Houston (2012), a liquid firm is a firm that has such great strength that it is able to fulfill all its financial liabilities that must be met immediately, the ability to pay is related to the implementation of the production process. Liquidity is the firm's ability to generate cash to meet both long-term and short-term firm needs (Kaplan & Zingales, 1997). The definition explicitly indicates whether with the available cash the firm has difficulty to fund its investment or not. The firm is said to have no difficulty in financing its investment if the firm is able to generate cash in financing the

investment. In this research, liquidity is proxied by cash flow. Cash flow consists of cash inflows and outflow cash flow. Outflow cash is usually used to make new investments, while cash inflows are the result of the investment. According to Brigham and Ehrhardt (2013), the cash flow statement is a report explaining the impact of the firm's operating, investing and financing activities on cash flows during one accounting period. The cash flows of firms with high volatility levels have expenditures, research and development costs, as well as lower advertising costs (Géczy, Minton, & Schrand, 1997). This means that different levels of investment will create different volatility, depending on the firm's investment objectives. Usually firms do not use debt or equity markets so that cash flow volatility is not sharp, because the cost of entry into the capital market is also associated with the volatility of firm cash flow. Research of Črnigoj and Verbič (2014), Ogawa (2015), Guariglia and Yang (2016), Quader (2016), George et al. (2011), and Kim (2014) shows that there is a link between liquidity with investment decisions. Empirical evidence in Indonesia is shown by Agung (2000), who found that liquidity is positively associated with investment decisions. Based on the description, the hypothesis proposed in this study is: H1: Liquidity has a positive effect on investment decisions both in the firm as a whole and in the firms with low and high investment. One of the mechanisms that can be used to increase firm value is by increasing the proportion of debt. According to agency theory, one of the bonding mechanisms to limit manager opportunist behavior is to increase debt. Adding debt can reduce agency costs that can increase firm value (Jensen & Meckling, 1976). The thing that needs to get the firm's management attention in carrying out its duty to maximize the value of the firm is the capital structure, which is a combination of debt and equity used to finance the firm's long-term investment. It is very important to be noticed by the management firm because: 1) the composition between debt and equity will affect the average cost of capital, 2) the increase in debt will increase the risk because the firm must bear the fixed costs (interest) to be paid even though the firm is experiencing a loss. Capital structure is defined as the long-term capital structure (both from internal and external sources) available to finance the firm's activities. According to Brigham and Houston (2012), long-term capital, meaning capital that can be used by firm for more than one year. Therefore, the firm's capital structure can be described by the ratio of debt to equity as well as total assets. Thus, when the firm needs funds to make investments in capital expenditure, the firm also needs resources, and one of them is from debt. Modigliani and Miller (1959) suggest that as far as interest payments can be used to reduce the tax burden, debt reduction will benefit the owner of the firm. However, such benefits will be recognized by the cost of bankruptcy and possible personal tax differences between income from equity and from debt. Theoretically the firm should use the debt that will minimize the cost of the firm's capital. Debt provides benefits and expenses simultaneously. Debt benefits are obtained in the form of relatively low capital costs due to tax savings (Modigliani & Miller, 1959). Expenses incurred due to indebtedness create the cost of bankruptcy as a result of a fixed expense to be borne. Therefore, the firms need to find the optimal composition between debt and equity, which brings benefits to the cost for investment that the firm can do to succeed and provide benefits for the firm in the future. Research results of Ameer (2014) and Guariglia and Yang (2016) show that debt has a positive effect on investment decisions. Based on the above description, the hypothesis proposed in this study is the debt has a positive effect on investment decisions both on the firm as a whole and in the firm with low and high investment. Managers prefer to use internal capital to finance investments because internal capital can reduce the involvement of oversight from shareholders or external parties to investment decisions made by manager's manager (Jensen & Meckling, 1976). According

to Fazzari et al. (1988) that FC firms tend to be more sensitive to internal financing (liquidity) in making investments. This tendency is due to the information asymmetry of external financing, so [that external financing](#) (debt) [is more](#) expensive [than internal financing](#) resulting in less FC firm having access to external financing sources. Result research of Carpenter and Guariglia (2008), Chen, Cao, Zhang, and Dickinson (2013), Bayraktar (2014), Ameer (2014), Črnigoj and Verbič (2014), Ogawa (2015), Guariglia and Yang (2016), Quader (2016), George et al. (2011), and Kim (2014) shows that investment decision of FC firm is more sensitive to liquidity than NFC firm. In contrast, research by Bassetto and Kalatzis (2011), Chen and Chen (2012), and Cull et al. (2014) shows that investment from NFC firms is more sensitive to liquidity than investment from FC firms. Based on the description, the hypothesis proposed in this research is: H2: Liquidity is more influential on investment decisions in FC firm than NFC firm both in the firm as a whole and in firm with low and high investment. The firms with good prospects will address the need for funds by borrowing for investment opportunity. However, if the prospect of a firm is unfavorable it will make the need for funds continuously, so the firm will overcome the problem of financing needs with new investment opportunity. Issuance of new equity causes the firm's value reflected in the losing stock price. Information asymmetry will in addition hamper the firm's ability to raise funds through the issuance of new shares, will also create an imperfect demand elasticity of equity funds by limiting access to retain earning (Myers, 1984). Transaction costs are generally smaller than debt to equity to reduce the various costs arising from the choice between debt and equity. Brigham and Houston (2012) argue that the use of interest-bearing debt has advantages and disadvantages for the firm. The advantages of using debt are: The interest cost reduces the taxable income, so the cost of effective debt becomes lower, and Debt holder has no voting rights so the owner can control the firm with less funds. While the loss of debt usage is if the firm's business is not in good condition, the operating income becomes low and not enough to cover the interest expense so that the owner's property is reduced. Guariglia and Yang (2016) suggest that firms with FC are less able to invest more when there is a good opportunity by using internal cash or external funds. Firm investments are not only related to cash operations but also related to external sources such as debt. The firms with high debt typically allocate their debts for investment, if the higher the debt the more assets the firm has. Mayer (1990) found: there is ownership of the dominant financial resources in all firm, the average firm of most that firm does not take into account the financial substance arising from the capital market in the form of share, bonds, or short-term equity, and the majority of external financing comes from bank debt in all country. In their research, Ameer (2014), and Guariglia and Yang (2016) found that investment decisions are more sensitive to debt on FC firms than NFC firms. Instead Ogawa (2015) found that firm investment decisions are more sensitive to debt to NFC firms than FC firms. Research of Agung (2000) show that the investment of NFC and FC firms differs in response to debt levels. Investments issued by FC firm respond negatively to debt levels, whereas NFC firm have no effect on investment. Hence the hypothesis in this study is: H3: The debt is more influential on investment decisions in NFC firm than FC firm either overall or in firm with low and high investment. Materials and Methods [The population in this study is](#) public firm [listed on the Indonesia Stock Exchange](#), with samples of sharia firms. Data required in this study is the firm's financial statements from 2011 to 2015. Data obtained from IDX and ICMD (Indonesia Capital Market Directory). The criteria of sampling method are only to include sharia firms listed on the BEI and publish its financial statements from 2011 to 2015 consistently. The independent variables in this research are liquidity which is proxy by cash flow and debt

which is proxy with debt to assets ratio (DAR). Cash flow is measured by net income plus depreciation and/or amortization divided by fixed assets. DAR is measured by total debt divided by total assets. Dependent variable in this research is investment. Investment in this research is net capital expenditure and calculated during period t . Investments are measured by fixed assets t minus fixed assets $t-1$ divided by fixed assets. Fixed assets refer to land, buildings and equipment. Cash flow and investment are divided by fixed assets to control the effects of the firm's scale differences. The moderating variables in this study are financial constraints classify into two, that is [non-financially constrained](#) (NFC) [and financially constrained](#) (FC). [In this research](#) to classify NFC and FC firm using four stages by looking at dividend policy, cash flow, leverage, and investment opportunity. The initial classification is built on dividend policy. Several research use dividend payout ratios (Almeida, Campello, & Weisbach, 2011, Baños Caballero, García Teruel, & Martínez Solano, 2014, Bayraktar, 2014, Fazzari et al., 1988, Kaplan & Zingales, 1997). The firms that do not dividends are in FC category, while firm that pay dividends are NFC category. Fazzari et al. (1988) suggest that there are two possible explanations for why firms pay low dividends. First, firms face the cost of expensive external financing sources because of the information asymmetry that uses most of the profits to finance their investments rather than paying high dividends. Second, the company does not earn enough profit to pay dividends. The firms paying dividends are included in the NFC category, while Pay = NFC the firms that do not pay dividends are included in the FC category. The firms included in the FC category may not be able to pay dividends for not being able to pay, but the possibility of funds owned is used for other purposes such as for investment, it is necessary to do the second classification by looking at cash flow. In the second classification as used by Rousseau and Kim (2008), Bassetto and Kalatzis (2011), Chen and Chen (2012) firms with larger cash flows [than the average cash flow of](#) all samples [are categorized as](#) NFC firm, which has a [cash flow](#) smaller [than the average cash flow of](#) all samples categorized as FC. The firms with large cash flows tend not to experience constraints in financing and conversely firm with small cash flows tend to experience constraints in financing. The third classification is looking at investment opportunity of the firm. The firm's investment opportunity in this case is proxy by market to book ratio as used by Hovakimian and Hovakimian (2009) and Hovakimian and Titman (2003) in classifying NFC and FC firms. The firms are in the NFC category if the market to book ratio is higher than the average book to market ratio of all samples and the firm is in the FC category if the market to book ratio is lower than the average book to market ratio of all samples. The firms that have a high to market to book ratio mean the firm has a market value that is higher than its book value that reflects the NFC firm. Thus the NFC firm will easily obtain external sources of financing because it has a high value of the value of the book, so investors will be interested to buy the stock of the firm. Furthermore, to obtain more accurate results in classifying NFC and FC firms, the financially constrained firms in the third classification are followed by the fourth classification as done by Bassetto and Kalatzis (2011), Bayraktar (2014) by looking at firm debt. The firms that have high debt levels tend to be difficult to access external financing sources and conversely firms with low debt levels tend to find it easy to access external financing sources. Therefore, in this study the firms that have debt ratio than the average ratio of debt would become the samples of the study, and they are categorized as NFC firm, while the firm that has debt ratio is higher than the average ratio of debt of all samples then categorized as FC firm. Of the four stages of the classification, then for more clearly can be seen in Figure 1. Div High = NFC Un-pay High = NFC Low Low = NFC CF Low MB High = FC Debt Figure 1: Classification of the firm

financially constrained and non-financially constrained In this case, Div. is dividend, CF is cash flow, MB is the ratio of market to book proxy of investment opportunity, Debt is debt, NFC is non-financially constrained, and FC is financially constrained. So firm are categorized as NFC firms when they pay dividends, have high cash flow, high market to book, and low debt. While the firm is categorized as FC firms if the firm does not pay dividends, has a low cash flow, low market to book, and high debt. The control variables in this study are investment opportunity proxy by market to book (MB) and firm SIZE measured by Ln total assets. The test model in this study used three moderation regression equations as follows: $INVAT_{it} = \beta_0 + \beta_1 CFAT_{it} + \beta_2 DAR_{it} + \beta_3 D_{it} + \beta_4 CF_{it} * D_{it} + \beta_5 DAR_{it} * D_{it} + MB_{it} \beta_6 + SIZE_{it} \beta_6 + uit$

(1) $INVLOW_{it} = \beta_0 + \beta_1 CFAT_{it} + \beta_2 DAR_{it} + \beta_3 D_{it} + \beta_4 CF_{it} * D_{it} + \beta_5 DAR_{it} * D_{it} + MB_{it} \beta_6 + SIZE_{it} \beta_6 + uit$

(2) $INVHIGH_{it} = \beta_0 + \beta_1 CFAT_{it} + \beta_2 DAR_{it} + \beta_3 D_{it} + \beta_4 CF_{it} * D_{it} + \beta_5 DAR_{it} * D_{it} + MB_{it} \beta_6 + SIZE_{it} \beta_6 + uit$

(3) In this case, INVAT is an investment in capital expenditures divided by fixed assets in the firm as a whole (total sample), INVLOW is an investment in a firm with low investment that has an investment value below the average value of the sample, INVHIGH is an investment in a firm with high investment that has an investment value above the average value of the sample, as a dependent variable, CFAT is a cash flow divided by fixed assets which is a proxy for liquidity and DAR (debt to assets ratio) as an Table 1: Descriptive statistics among variables

Variable	Minimum	Maximum
INVAT	0,110	0,249
CFAT	0,140	3,456
DAR	0,060	1,800
MB	0,950	2,629
SIZE	7,774	18,132

N 480 independent variable, D is the dummy variable of FC and NFC firms, 1 is FC and 0 is an NFC firm, CF*D is the interaction between CF and dummy variables and DAR*D is the interaction between DAR and dummy variables, as moderating variables, and MB (market to book) are the proxy of investment opportunity and SIZE is the size of the firm as a control variable. Cash flows and investments are divided by fixed assets to control the effect of firm scale differences. Results and Discussion Based on the sample selection criteria of sharia firms listed on the BEI and publish their financial statements from 2011 to 2015 consistently, it is obtained a sample of 165 sharia firms for five years with the number of observations of 825. From 165 firms, there are 69 firms whose data outliers because have a value of cash flow, market to book, debt to assets and investments is negative, so it is excluded from the sample. So the final sample of this study amounted to 96 sharia firms for five years with a number of 480 observations. The descriptive statistics of variables in this study can be seen in Table 1 below.

Mean	Standard Deviation
0,1647	0,0294
1,6401	0,6641
0,7014	0,3797
1,6253	0,3206
12,7728	0,8772

Note: INVAT (investment divided by fixed assets) as the dependent variable, CFAT (cash flow divided by fixed assets) and DAR (total debt divided by total assets) as independent variable, MB (equity market value divided by book value of equity) and SIZE (Ln total assets) as control variable Moderate variables in this study used dummy, 1 for FC firms and 0 for NFC firms. Firm classification is categorized as FC and NFC seen from dividend, cash flow, market to book, and debt. The firms categorized as FC firm if the firm does not pay dividends, have cash flow and market to book that are lower than the sample average, Pay and have debt higher than the sample average. While the firms are categorized as NFC firm when firm pay dividends, have cash flow and market to book higher than the average sample, and have debt lower than the average sample. The results of the classification of firm categorized as FC and NFC can be seen in Figure 2.

Classification	Count
D (275) High Un-pay CF	175+48=223
High (305) Low MB	223+59=282
Low (305-48=257) Low Debt	282+64=346
(257-59=198) High	198-64=134

Figure 2: Result of classification of the firm financially constrained and non-financially constrained Figure 2 shows that the initial classification is seen from the dividend, an observer firm paying a dividend of 275 and not paying a

dividend of 305. In the second classification, firms are observed not paying any dividends any more cash flow, at this stage indicating that has a cash flow higher than the average sample increased 48 to 223 and which is smaller than the average sample decreased 48 to 257 observations. In the third classification, the observed firm that are still low cash flow is seen again market to book it, the classification results show the number of firm that have market to book higher than the average sample increased 59 to 282 observations, while firm that have market to book lower than the sample mean reduced by 59 to 198 observations. In the last classification of the firm that still high market to book it is seen again its debt, the classification results indicate that firm that have debt lower than the average sample increased 64 to 346 and Table 2: Descriptive statistics of FC and NFC firms observed firm have debt above the average sample is reduced 64 to 134 observations. Thus, firms categorized as FC were observed 134 times, while firms categorized as NFC got 346 observations. The descriptive statistics of research variables in the firm FC and NFC can be seen in the following Table 2.

Variable	Min	Max	FC Mean	SD	Min NFC	Max	NFC Mean	SD	Dividend	CFAT	DAR	MB	SIZE	INVAT	N
Pay	134	1,463	0,599	1,543	12,772	0,161	0,535	0,306	0,283	1,393	0,029	0,144	0,110	0,950	7,774
Un-pay	346	1,708	0,741	1,657	12,773	0,165	0,696	0,397	0,329	2,035	0,029	0,144	0,110	0,950	7,774

Note: Dividend (pay and un-pay), CFAT (cash flow divided by fixed assets), DAR (total debt divided by total assets) in percent, MB (equity market value divided by book value of equity) in time, is a classification of FC and NFC, whereas SIZE (Ln total assets) as control variable and INVAT (investment divided by fixed assets) are dependent variable and not classification of FC and NFC In this study, testing was conducted to the entire investment of the sampled firms with low and high investment. The firms include into the high investment category if the value of investment is higher than the average sample (0,215) and into the category of firm with low investment if the investment value is lower than the average value of the sample. Descriptive statistics of the firms with low and high investment can be seen in Table 3.

Table 3: Descriptive statistics of low and high firm investment

Variable	Min Low Investment	Max	Mean	SD	Min High Investment	Max	Mean	SD	INVAT	CFAT	DAR	MB	SIZE	N
INVAT	0,110	0,142	0,060	0,950	7,774	0,210	3,456	1,790	2,629	18,132	0,157	1,670	0,704	1,631
CFAT	0,009	0,009	0,009	0,009	0,009	0,009	0,009	0,009	0,009	0,009	0,009	0,009	0,009	0,009
DAR	0,009	0,009	0,009	0,009	0,009	0,009	0,009	0,009	0,009	0,009	0,009	0,009	0,009	0,009
MB	0,009	0,009	0,009	0,009	0,009	0,009	0,009	0,009	0,009	0,009	0,009	0,009	0,009	0,009
SIZE	0,009	0,009	0,009	0,009	0,009	0,009	0,009	0,009	0,009	0,009	0,009	0,009	0,009	0,009
INVAT	0,009	0,009	0,009	0,009	0,009	0,009	0,009	0,009	0,009	0,009	0,009	0,009	0,009	0,009
CFAT	0,009	0,009	0,009	0,009	0,009	0,009	0,009	0,009	0,009	0,009	0,009	0,009	0,009	0,009
DAR	0,009	0,009	0,009	0,009	0,009	0,009	0,009	0,009	0,009	0,009	0,009	0,009	0,009	0,009
MB	0,009	0,009	0,009	0,009	0,009	0,009	0,009	0,009	0,009	0,009	0,009	0,009	0,009	0,009
SIZE	0,009	0,009	0,009	0,009	0,009	0,009	0,009	0,009	0,009	0,009	0,009	0,009	0,009	0,009

Note: INVAT (investment divided by fixed assets) as the dependent variable, CFAT (cash flow divided by fixed assets) and DAR (total debt divided by total assets) as independent variable, MB (equity market value divided by book value of equity) and SIZE (Ln total assets) as control variable The [results of testing hypothesis can be seen in Table 4](#) below. [Table 4](#): The [result of testing hypothesis](#)

Variable	Total	Sample	coefficients	t value	Low Investment	coefficients	t value	High Investment	coefficients	t value
CF	0,005	0,005	0,005	0,005	0,005	0,005	0,005	0,005	0,005	0,005
DAR	0,10	0,10	0,10	0,10	0,10	0,10	0,10	0,10	0,10	0,10
D	-0,018	-0,018	-0,018	-0,018	-0,018	-0,018	-0,018	-0,018	-0,018	-0,018
CFAT*D	0,007	0,007	0,007	0,007	0,007	0,007	0,007	0,007	0,007	0,007
DAR*D	0,010	0,010	0,010	0,010	0,010	0,010	0,010	0,010	0,010	0,010
MB	-0,001	-0,001	-0,001	-0,001	-0,001	-0,001	-0,001	-0,001	-0,001	-0,001
SIZE	0,001	0,001	0,001	0,001	0,001	0,001	0,001	0,001	0,001	0,001
Constanta	0,144	0,144	0,144	0,144	0,144	0,144	0,144	0,144	0,144	0,144
CFAT	2,094**	2,094**	2,094**	2,094**	2,094**	2,094**	2,094**	2,094**	2,094**	2,094**
DAR	2,511***	2,511***	2,511***	2,511***	2,511***	2,511***	2,511***	2,511***	2,511***	2,511***
D	0,006	0,006	0,006	0,006	0,006	0,006	0,006	0,006	0,006	0,006
CFAT*D	-1,702**	-1,702**	-1,702**	-1,702**	-1,702**	-1,702**	-1,702**	-1,702**	-1,702**	-1,702**
DAR*D	-0,004	-0,004	-0,004	-0,004	-0,004	-0,004	-0,004	-0,004	-0,004	-0,004
MB	2,101**	2,101**	2,101**	2,101**	2,101**	2,101**	2,101**	2,101**	2,101**	2,101**
SIZE	0,004	0,004	0,004	0,004	0,004	0,004	0,004	0,004	0,004	0,004
Constanta	1,138	1,138	1,138	1,138	1,138	1,138	1,138	1,138	1,138	1,138
CFAT	0,007	0,007	0,007	0,007	0,007	0,007	0,007	0,007	0,007	0,007
DAR	-0,338	-0,338	-0,338	-0,338	-0,338	-0,338	-0,338	-0,338	-0,338	-0,338
D	-0,007	-0,007	-0,007	-0,007	-0,007	-0,007	-0,007	-0,007	-0,007	-0,007
CFAT*D	0,962	0,962	0,962	0,962	0,962	0,962	0,962	0,962	0,962	0,962
DAR*D	0,001	0,001	0,001	0,001	0,001	0,001	0,001	0,001	0,001	0,001
MB	2,400***	2,400***	2,400***	2,400***	2,400***	2,400***	2,400***	2,400***	2,400***	2,400***
SIZE	0,009	0,009	0,009	0,009	0,009	0,009	0,009	0,009	0,009	0,009
Constanta	1,689**	1,689**	1,689**	1,689**	1,689**	1,689**	1,689**	1,689**	1,689**	1,689**
CFAT	0,008	0,008	0,008	0,008	0,008	0,008	0,008	0,008	0,008	0,008
DAR	-0,422	-0,422	-0,422	-0,422	-0,422	-0,422	-0,422	-0,422	-0,422	-0,422
D	0,006	0,006	0,006	0,006	0,006	0,006	0,006	0,006	0,006	0,006
CFAT*D	2,043**	2,043**	2,043**	2,043**	2,043**	2,043**	2,043**	2,043**	2,043**	2,043**
DAR*D	-0,003	-0,003	-0,003	-0,003	-0,003	-0,003	-0,003	-0,003	-0,003	-0,003
MB	-0,361	-0,361	-0,361	-0,361	-0,361	-0,361	-0,361	-0,361	-0,361	-0,361
SIZE	-0,007	-0,007	-0,007	-0,007	-0,007	-0,007	-0,007	-0,007	-0,007	-0,007
Constanta	-2,039**	-2,039**	-2,039**	-2,039**	-2,039**	-2,039**	-2,039**	-2,039**	-2,039**	-2,039**
CFAT	0,001	0,001	0,001	0,001	0,001	0,001	0,001	0,001	0,001	0,001
DAR	0,392	0,392	0,392	0,392	0,392	0,392	0,392	0,392	0,392	0,392
D	-0,001	-0,001	-0,001	-0,001	-0,001	-0,001	-0,001	-0,001	-0,001	-0,001
CFAT*D	0,214	0,214	0,214	0,214	0,214	0,214	0,214	0,214	0,214	0,214
DAR*D	3,897***	3,897***	3,897***	3,897***	3,897***	3,897***	3,897***	3,897***	3,897***	3,897***
MB	1,809**	1,809**	1,809**	1,809**	1,809**	1,809**	1,809**	1,809**	1,809**	1,809**
SIZE	0,535	0,535	0,535	0,535	0,535	0,535	0,535	0,535	0,535	0,535
Constanta	0,464	0,464	0,464	0,464	0,464	0,464	0,464	0,464	0,464	0,464
CFAT	-2,055**	-2,055**	-2,055**	-2,055**	-2,055**	-2,055**	-2,055**	-2,055**	-2,055**	-2,055**
DAR	0,187	0,187	0,187	0,187	0,187	0,187	0,187	0,187	0,187	0,187
D	-0,945	-0,945	-0,945	-0,945	-0,945	-0,945	-0,945	-0,945	-0,945	-0,945

Note: ** Significant at [level 5% \(1,645\)](#). *** Significant at [level 1% \(2,326\)](#) CFAT (cash flow divided by fixed assets) is the proxy of liquidity and DAR (total debt divided by total assets) is the proxy of debt policy is an independent variable, D ([dummy variable, 1 for financially constrained firm, 0 for non-financially constrained firm](#)), CFAT*D (interaction between CFAT and firm dummy financially constrained) and DAR*D (interaction between DAR and dummy of non-financially constrained firm) are moderating variables, MB

(equity market value divided by book value of equity) and SIZE (Ln total assets) are control variables. Based on the result of testing hypothesis in Table 4, the total samples show that liquidity and debt [have a significant positive effect on investment](#) decision. In addition Table 4 above also shows that the liquidity moderation variable with financial constraints is the interaction between CFAT and dummy (CFAT*D) has a significant positive effect on the investment decision or it can be interpreted that liquidity is more sensitive to investment decision on FC firm than NFC firm. However, the reverse result shows that the moderation variable of debt policy with financial constraints that is DAR interaction with dummy (DAR*D) has an insignificant positive effect on investment decision, in other words that debt is not sensitive to investment decision at NFC firm. When the sample is divided into two that is firm that have low investment and firm that have high investment, the results showed that liquidity and debt have a significant positive effect on investment decisions firm. However, different results occur when moderated by financial constraints. In low-investment firms, liquidity is more sensitive to investment decisions of FC firms than NFC firms, while debt is not sensitive to investment decisions of NFC firm. In contrast to high-investment firm, debt is more sensitive to investment decisions of NFC than FC firms, while liquidity is not sensitive to investment decisions of FC firms. Table 4 also shows that liquidity positively affects to investment decisions both in the total sample firm and in the firm with low and high investment. This influence shows that with high liquidity, firms have the opportunity to invest more in capital expenditure, such as investment in fixed assets such as land or property, buildings, and equipment. However, with high firm liquidity it is sensitive to agency conflicts. According to the agency theory that managers prefer to use internal capital to finance investments because internal capital can reduce the involvement of oversight from shareholders or external parties to investment decisions made by managers. Managers tend to choose projects that outsiders find difficult to monitor, thereby allowing managers to make decisions that benefit them. Managers also prefer to keep free cash flows instead of distributing them to shareholders. The higher the free cash flows the greater the freedom of managers in controlling the firm's resources (Jensen & Meckling, 1976). In addition, Myers and Majluf (1984) assert that with the asymmetry information, internal financing sources are cheaper than external financing such as debt, so the firm tend to choose internal financing rather than external financing. The results of this study are in accordance with research of Almeida and Campello (2007), Carpenter and Guariglia (2008), Chen et al. (2013), Bayraktar (2014), Ameer (2014), Črnigoj and Verbič (2014), Ogawa (2015), Guariglia and Yang (2016), Quader (2016), George et al. (2011), Kim (2014), Bassetto and Kalatzis (2011), Chen and Chen (2012), and Cull et al. (2014). The results of the research in Table 4 above also shows that the debt [has a significant positive effect on investment](#) decisions both on [the](#) total sample firm and in the firm with low and high investment. As explained in agency theory, one of the mechanisms that can be used to increase the value of a firm is by increasing the proportion of debt as one of the bonding mechanisms to limit the manager's opportunistic behavior. Adding debt can reduce agency costs that can increase firm value (Jensen & Meckling, 1976). From these statements can also be interpreted that the debt can be used by firms to invest [in order to increase the value of the](#) firm. The finding of this study show that the sources of debt funds are used by firm to make investments have been right on target. So it can be said that with the source of financing from the debt, the firm can make investments as expected, which can increase the [value of the](#) firm. [The results of this study](#) are in accordance with research of Ameer (2014), Guariglia and Yang (2016). [The results of this study](#) also [indicate that there is](#) interdependency [between](#) investment decision [and](#) financing decision. This means that when the firm

has a goal to increase its value, then one that must be done is to make investments, and to make investments then the firm needs financing sources, in this case is the source of financing from the internal cash form (proxy of liquidity) and external financing that is debt. The results of this study differ from statement of [Modigliani and Miller \(1958\)](#) which states that [in perfect market conditions there is no relationship between investment decisions and financing decisions. The](#) influence of liquidity and debt on investment decisions differs when moderated by FC and NFC firm, both investment stirrings in the total sample of the firm as well as investment decisions in firm with low or high investment. This is indicated by the result that liquidity has more influence on investment decision on FC firm than NFC firm. According to Fazzari et al. (1988) is attributed to information asymmetry on external financing, so that external financing such as debt is more expensive than internal financing which results in less FC firm having access to external financing sources. In addition the FC firm is relatively smaller, indicating financial limitations so it will be difficult for firm to take advantageous investment opportunity for investment. In other words, FC firm have low firm value. Thus, FC firms tend to be more sensitive to liquidity in investing in total sample of the firm and firm with low investment. The results of this study are in accordance with research of Chen et al. (2013), Bayraktar (2014), Ameer (2014), Črnigoj and Verbič (2014), Ogawa (2015), Guariglia and Yang (2016), Quader (2016), George et al. (2011), and Kim (2014). In the sample of the firm as a whole found the result that the debt is not sensitive to the investment decision on the NFC firm. In contrast to the firm with low investment, debt is more sensitive to investment decisions in NFC firms than FC firms. The results of this study in accordance with research Lang, Ofek, and Stulz (1996) and Ogawa (2015). The firms with good prospects will address the need for funds by borrowing to invest. Refer to Guariglia and Yang (2016) the firm that FC is less able to invest more when there is a good opportunity by using internal cash or external funds. Firm investments are not only related to cash operations but also related to external sources such as debt. The firms with high debt typically allocate their debts for investment, if the higher the debt the more assets the firm has. In other words, the firm with no financial constraints (NFC) will easily access the debt to invest. This means that NFC firms are more sensitive to debt in investing. [Conclusion From the results of testing hypothesis, the conclusions](#) of this study are: first, liquidity and debt [have a positive effect on investment decisions. This](#) influence shows that [with](#) high liquidity and debt, the firm has the opportunity to invest more in capital expenditure that is investment in fixed assets such as land or property, buildings, and equipment. So the firm will be able to alert the value of the firm. This indicates the existence of interdependency between financing decisions in this case liquidity and debt with investment decisions on the firm in Indonesia, especially the firm on the samples. Second, liquidity is more influential on investment decision on FC firm than NFC firm or in other words liquidity is more sensitive to investment decision on FC firm than NFC on total sample of firm and on the firm with low investment. This is due to the asymmetry of information on external financing, so that external financing such as debt is more expensive than internal financing which results in less FC firm having access to external financing sources. This shows that investment decision of FC firm is more sensitive to liquidity. Third, debt sensitivity to investment decisions is different in NFC firm. In the total sample of the firm, the debt does not significantly affect the investment decision on the NFC firm. However, in the sample of firm with high investment value, debt has more influence on investment decision on NFC firm than FC firm. In other words, debt is more sensitive to investment decisions on NFC firms than FC firms. This is because NFC firms tend to have easier access to external sources of funds, in this case

debt, so as to easily adjust financing sources for investments that show greater financial flexibility. This means that NFC firms in investing are more sensitive to debt. Limitation The limitations in this study include: firstly, the sample only [on the sharia firms listed on the Indonesia Stock Exchange](#) with a research period of only five years, for further research can increase the sample by comparing sharia firms in some countries and longer periods, secondly, the numbers of sample are too limited because there is any outlier data that have value of cash flow, market to book, debt to assets, and investment is negative, thirdly, this study uses only two independent variables of liquidity and debt, future research may need to add another relevant independent variable such as size or growth, and finally, samples is pooling so that one firm that entered the category of FC firm this year could be included in the category of NFC firm in the next year. Robustness test should be made, by holding-out sample. The only sample tested that is five years or three years in a row is in the same category. Acknowledgement The authors would like to thank Indonesian Endowment Finance of Education (LPDP) because the study is fully sponsored by LPDP. References Agung, J. 2000. Financial Constraint, Firms' Investments and The Channels of Monetary policy in Indonesia. *Applied Economics*, 32: 1637-1646. Almeida, H., & Campello, M. 2007. Financial Constraints, Asset Tangibility, and Corporate Investment. *Review of Financial Studies*, 20 (5): 1429-1460. Almeida, H., Campello, M., & Weisbach, M.S. 2011. Corporate financial and investment policies when future financing is not frictionless. *Journal of Corporate Finance*, 17 (3): 675-693. Ameer, R. 2014. Financial constraints and corporate investment in Asian countries. *Journal of Asian Economics*, 33: 44-55. Baños-Caballero, S., García Teruel, P.J., & Martínez Solano, P. 2014. Working capital management, corporate performance, and financial constraints. *Journal of Business Research*, 67 (3): 332-338. Bassetto, C.F., & Kalatzis, A.E.G. 2011. Financial distress, financial constraint and investment decision: Evidence from Brazil. *Economic Modelling*, 28: 264- 271. Bayraktar, N. 2014. Fixed investment/fundamental sensitivities under financial constraints. *Journal of Economics and Business*, 75: 25-59. Brigham, E.F., & Ehrhardt, M.C. 2013. *Financial management: Theory & practice*: Cengage Learning. Brigham, E.F., & Houston, J.F. 2012. *Fundamentals of financial management*: Cengage Learning. Carpenter, R.E., & Guariglia, A. 2008. Cash flow, investment, and investment opportunities: New tests using UK panel data. *Journal of Banking & Finance*, 32 (9): 1894-1906. Chen, A.A., Cao, H., Zhang, D., & Dickinson, D.G. 2013. The impact of shareholding structure on firm investment: Evidence from Chinese listed companies. *Pacific- Basin Finance Journal*, 25: 85-100. Chen, H., & Chen, S. 2012. Investment-cash flow sensitivity cannot be a good measure of financial constraints: Evidence from the time series. *Journal of Financial Economics*, 103 (2): 393-410. Črnigoj, M., & Verbič, M. 2014. Financial constraints and corporate investments during the current financial and economic crisis: The credit crunch and investment decisions of Slovenian firms. *Economic Systems*, 38 (4): 502-517. Cull, R., Li, W., Sunc, B., & Xu, L.C. 2014. Government connections and financial constraints: Evidence from a large representative sample of Chinese firms. *Journal of Corporate Finance*, 32: 271-294. Fazzari, S.M., Hubbard, R.G., & Petersen, B.C. 1988. Financing Constraints and Corporate Investment. *Brookings Papers on Economic Activity*, 1: 141-206. Géczy, C., Minton, B.A., & Schrand, C. 1997. Why firms use currency derivatives. *The Journal of Finance*, 52 (4): 1323-1354. George, R., Kabir, R., & Qian, J. 2011. Investment-cash flow sensitivity and financing constraints: New evidence from Indian business group firms. *Journal of Multinational Financial Management*, 21 (2): 69-88. Guariglia, A., & Yang, J. 2016. A balancing act: Managing financial constraints and agency costs to minimize investment inefficiency in the Chinese market. *Journal of Corporate Finance*, 36: 111-130. Hoshi, T., Kashyap, A., &

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