THE RELATION BETWEEN INVESTOR OWNERSHIP AND CORPORATES INVESTMENT, PAYOUTS, AND PROFITABILITY

by

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Abstract

How corporate using their cash holding of public firms has been a more and more

important factor for investors to observe investment opportunity in companies. Institutional

investors have been a major role of corporate investing, and the institutional investors can

benefit the firms' performance and improve the efficiency by providing monitoring to the

corporations' governance (Boone and White, 2015). So, I hypothesize that the investors will

affect the use of cash holdings, investment, payouts, and profitability by monitoring the

managers, and the long-term investors may have more influence. In this article, I tried to

examine the hypothesis through empirical study.

Key Words: Investor Ownership; Investor Horizon; Use of Cash

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1: Introduction

The researches of institutional investor have been done more and more in recent years. The participants of market have also paid attention on the tendency of institutional investors. By providing monitoring to the corporations' governance, the institutional investors can benefit the firms' performance and improve the efficiency (Boone and White, 2015). However, institutional investors may have the negative effect to the firms. Investors may influence the managers to take the short-term goals of performance, ignoring the profit that can be made by other projects which cannot show difference immediately. Therefore, how institutional investors affects corporate finance, corporate strategies, and profitability was examined in different ways. In the research, the relation of investors ownership and control in public firms cause agency problems between investors and managers (Jensen and Meckling (1976)). And in some researches about agency problems have showed that the agency problems are mainly caused by the usage of cash holdings. The optimal cash holdings are controlled by the managers using cash holdings to execute profitable financial projects, but to benefit the themselves and the investors, managers may waste cash on less or not profitable projects (Stulz (1990)). With the above mentioned, investors influence on corporates may be negative or positive, and we may take the usage cash holdings to assess the extent of how investors influence the firms and further profits.

To start examining the link between the institutional investors and corporates, I start by determining the variable that can represent institutional investors of the firms. I use institutional investors ownership to present the strength of influencing firms' management directions, based on the reason that the more the shares holding you, the more you can affect the companies. However, among numerous institutional investors that invest in the same corporate, those institutional investors may have different investment strategies and investment horizon for various purposes. Therefore, in the study, I filter out the investors that

can represent the ones causing most effect on the firms. Following the study of Chen, Harford, and Li (2007), Admati and Pfleiderer (2009), and Edmans (2009), the long-term investors would be the more effective ones through monitoring the companies or persuading the managers. Therefore, I determine the long-term investor ownership as the representative of the variable that affect the firms.

As mentioned before, usage of cash holdings is one of the factors that would be concerned by both investors and managers. The amount of the cash holdings changes not only because of the expense on the projects but also the agency cost. Through the cash holdings, we can see the effect that investors bring to the firms, so the whole empirical study will be centered with the usage of cash holdings. The structure of the whole empirical study will be started with examining the relation between the cash holdings and the long-term investor ownership. In the first examination, I will use natural logarithm of cash over net asset as the variables of cash holdings, based on the study of Opler, Pinkowitz, Stulz, and Williamson (1999), and Foley, C. Fritz, Jay Hartzell, Sheridan Titman, and Garry J. Twite (2007). Using the natural logarithm is to decrease the effect of the outliers toward the regression, however, the logarithm makes some of the outcomes coefficient smaller than expected.

After measuring the relationship between cash holdings and the investor ownership, I begin the study of the expense on investment, examining the hypothesis I set based on the literatures of Bushee (1998) and Chen, Harford, and Li (2007). Through the study, the outcomes only partially reject the hypothesis. The relation between capital expenditure and long-term investor ownership is negative, and, as expected, the R&D expense and acquisition expense' relationship with the long-term investor ownership is positive. Then I do the examination of the share payouts. Based on the study of Gaspar, José-Miguel, Massimo Massa, Pedro Matos, Rajdeep Patgiri, and Zahid Rehman (2011), corporates payouts policies

will be affected by the investment horizon. The payouts I use dividend payouts and share repurchase as the variables to represent the usage of excess cash after using on investment. The outcome of regression turns out to match the hypothesis, showing that dividends payout has positive relation with the long-term investor ownership and share repurchase has negative relation. In the end of the empirical study, I measure the profitability of the corporations. After all, the reason that these investors try to influence the corporates is to stimulate the profits and increase the share value. The results show that the profits are boosted, however, the value of the firms does not increase accordingly.

The following paper will be constructed by four parts. First, I will demonstrate the data and methodology. It contains the variable measurements and the empirical study using the regression. The next part is the result of the regression. The last part will be the conclusion and discussion of the whole study.

2: Data and Methodology

2.1 Main Research Content and Hypotheses Development

First of all, to increase the shares value, the institutional investors are well known that they can affect the corporates by monitoring the managers using the cash. Not all the institutional investors induce the same investing horizon on the corporates due to their different investing strategies. Some of the investors trading the assets often, focusing on short-term invest horizon, and others do the opposite. With different style of investors, there would be different effect on the monitoring managers usage of cash holdings on the profitable projects. When it comes to monitoring the corporates, investors cost less when they are with longer horizons (Chen, Harford, and Li (2007)). As the cost is less, the investors may have greater intention to do so. Also, compared with short-term investors, long-term investors have better influence toward the managers, because if long-term investors sell their shares the company may be affected more. (Admati and Pfleiderer (2009) and Edmans (2009)). However, there is still ambiguous outcome about the cash holdings if being monitored better. The good monitoring will give pressure to self-interested managers to spend the cash resulting in low cash holdings (La Porta, Lopez-de-Silanes, Shleifer, and Vishny(2000)). Another theory based on internal governance suggests that good monitoring suppress the cost from agency problem, in turn, there will be more cash holdings.

Following these above theories, I am going to test is that the relationship between long investment horizon investors and the cash holdings. From my point of view, the cash holdings reserve would be higher if the firms held more by long-term investors. The logic of the view is based on the theory that manager will be monitored by the investors to save the cash for more profitable projects and promote the value of shares and benefit the investors who have long investing horizon.

H1: The cash holdings of the firm have positive relation with the investor horizon.

With all those cash holdings for the managers to distribute different projects and expenses, managers would choose the ones that can bring up the share value and benefit the investors. For the all the institutional investors, how managers using the cash holdings is important, and investors with different invest horizon will have different impact on corporate managers. Short-term investors may make managers to conduct short-term investment strategies. Short-term investor horizon companies decrease R&D expenditures to achieve short-term profit. (Bushee (1998)). In terms of acquisitions, short-term investors will give a negative effect on corporates takeovers. (Chen, Harford, and Li (2007)). Capital expenditures are mostly for the long-term benefits for the companies, so I think that if the investors make managers pursuing the projects for the long-term profit the capital expenditures will increase. By following these theories, I hypothesize H2.

H2: Long investment horizon investors will have positive relationship with R&D expenditures, acquisitions expenditures, and capital expenditures

Except for the expense on the investment, like R&D, capital expenditure, or takeovers, managers may also distribute the cash holdings to payouts on shares. The corporate decisions on shares repurchase or dividends payment affect the firm value, and the investment incentives and investor horizons also influence the decisions of the managers. With the shares repurchase, the firm's stock prices may increase shortly, and the investors can do the trade to get the short-term earnings. Therefore, I assume that short-term investors may urge managers to do the shares repurchases more or do the dividend payouts less, and the long-term horizon investors will have opposite effect on managers. Here, I pose the hypothesis:

H3: In terms of corporate cash payouts, there is negative relationship between shares repurchases and long-term investor ownership. The dividend payouts has

positive relationship with long-term investor ownership

After setting up the prior hypothesis, similarly to H3, I expect that the profitability and firm valuation will be influenced. Therefore, to find out the outcomes that the firm with longer horizon put their cash holdings in profitable projects and then increasing the value and profitability of firms. I examine the relationship between long-term investor ownership and operating income plus market-book ratio.

H4: Longer investor horizon has positive influence on the value and profitability of firms

2.2 Data and Sample Selection

Data of this thesis comes from the database CRSP, Compustat, and Thomson Reuters. CRSP database is the comprehensive database for the securities among NYSE, AMEX and NASDAQ, containing the price return and the volume. Compustat is a huge dataset that provides with fundamental and market information on publicly held companies. The data from balance sheet, income statement, and cash flow are all collected from Compustat. Thomson Reuters data contains 13F institutional holdings database. 13F institutional holdings database provides institutional common stock holdings and transactions that are reported on form 13F filed with SEC, and it also provides the institutional ownership data of stocks. In the thesis.

From the database, I extract all publicly traded securities in the United States. In this case, the data samples start from 2006 to 2018. I believe that the time intervals provide adequate observations for the empirical study.

Considering that some corporates may be too small or their data may be not be legitimate, some companies are dropped out. I drop out the companies with market value less than \$10 million dollars and the companies with zero assets. Also, the companies with

institutional ownership over 100% are dropped. Then I filtered the companies by industry format, leaving the companies under format INDL. After the filtering process, it leaves us the sample of 8475 firms and 44,162 firm years.

2.3 Variable Measurement

As mentioned before, investors cost less when they are with longer horizons (Chen, Harford, and Li (2007)), then the investors may monitor more on managers, meaning that managers would follow closer to the directions of the investors with longer-horizon.

Moreover, with less agency cost, the investors could have more benefits on the firms. In this study, the long-term investment horizon ownership becomes the main variable.

To measure the investment horizons of the investors, I follow Derrien, Kecskes, and Thesmar (2013). First, I select the institutional investors from the 13F institutional holdings that holding the firms I filtered from the CRSP and Compustat representing as the investors. Then I divided the investors into the ones with long-term investment horizon or short-term investment horizon through their holding periods and the portfolio turnover. Among the institutional investors I select from the database, I sort out the firms they hold and compute the ownership percentage through the years. The stocks that were not held over time periods of three years will be taken out. The remain stocks of each institutional investors are set that turnover equals zero. Then I calculate the weight of stocks with turnover zero in each institutional investors' portfolios and set the results as their portfolio turnover. The institutional investors with portfolio turnover no more than 35% are defined as long-term investors (cf. Froot, Perold, and Stein (1992)).

Other dependent variables for the empirical study are as follows. I use the ratio of cash to net asset to represent as the cash holdings and add the logarithm for doing linear model regression. For the cash holdings used for investment expenses, I take ratio of capital expenditures to total assets, R&D expenditures to total assets, and acquisitions expenditures.

The variables for representing payout after the investments are ratio of dividends to total asset and share repurchase to total assets. Lastly for profitability and stock valuation, I use ratio of operating income to total assets and market to book ratio.

2.4 Statistical Methods

To test the Hypothesis 1, I use the general linear model.

$$CH_{i,t} = \alpha_i + \beta_1 LO_{i,t-1} + \beta_2 LNA_{i,t} + \beta_3 \Delta CN_{i,t} + \beta_4 \Delta RN_{i,t} + \beta_5 \Delta OP_{i,t} + \beta_6 WN_{i,t} + \beta_7 MB_{i,t} + DP_{i,t} + \varepsilon_{it}$$

 $CH_{i,t}$ is the ratio of logarithm of cash over net asset, representing cash holdings (Opler, Pinkowitz, Stulz, and Williamson (1999)). α_i is an indicator that captures the effect of fixed effect, $LO_{i,t-1}$ is the long-term investor ownership, representing investor horizon. $LnA_{i,t}$ is ln(net assets), $\Delta CN_{i,t}$ represents Δ capital expenditure over net asset, $\Delta RN_{i,t}$ represents ΔR expenditure over net asset, $\Delta AN_{i,t}$ represents acquisitions expenditure over net asset, $OP_{i,t}$ represents operating income over net asset, $WN_{i,t}$ represents net working capital over net asset $MB_{i,t}$ represents market to book ratio. $DP_{i,t}$ is the dummy variable that the firms pay the dividends or not. ε_{it} is error term. In the H1 hypothesis, β_1 should be positive, meaning that the firms will have more cash holdings when the long-term investors ownership is higher.

For H2, the models are

$$\Delta CN_{i,t} = \alpha_i + \beta_1 LO_{i,t-1} + \beta_2 LEC_{i,t-1} + \beta_3 SG_{i,t-1} + \beta_4 LnA_{i,t-1} + \beta_5 OP_{i,t-1} + \beta_6 WN_{i,t-1} + \beta_7 MB_{i,t-1} + \varepsilon_{it}$$

$$\begin{split} \Delta RN_{i,t} \; &= \alpha_i + \beta_1 LO_{i,t-1} + \beta_2 LEC_{i,t-1} + \beta_3 SG_{i,t-1} + \beta_4 LnA_{i,t-1} + \beta_5 OP_{i,t-1} + \beta_6 WN_{i,t-1} \\ &\quad + \beta_7 MB_{i,t-1} \; + \varepsilon_{it} \end{split}$$

$$\Delta A N_{i,t} = \alpha_i + \beta_1 L O_{i,t-1} + \beta_2 L E C_{i,t-1} + \beta_3 S G_{i,t-1} + \beta_4 L n A_{i,t-1} + \beta_5 O P_{i,t-1} + \beta_6 W N_{i,t-1} + \beta_7 M B_{i,t-1} + \varepsilon_{it}$$

In this hypothesis, I put the new variable, lagged excess cash ($LEC_{i,t-1}$), into estimation. In these models, I try to find out the relationship between investment expense and the investor horizons. The excess cash is taken into consider because the investors may monitor managers cash usage. Based on Bushee (1998) research, short-term investor decreases R&D expenditure, so here I predict that, under lon-term, β_1 should be positive and the coefficient of excess cash will be negative because the managers use it on the project for long-term profits.

For H3,

$$\begin{split} \Delta DN_{i,t} \; &= \, \alpha_i \, + \, \beta_1 LO_{i,t-1} \, + \, \beta_2 LEC_{i,t-1} \, + \, \beta_3 SG_{i,t-1} \, + \, \beta_4 LnA_{i,t-1} \, + \, \beta_5 OP_{i,t-1} \, + \, \beta_6 WN_{i,t-1} \\ &\quad + \, \beta_7 MB_{i,t-1} \, + \, \beta_8 LL_{i,t-1} \, + \, \varepsilon_{it} \end{split}$$

$$\Delta RN_{i,t} \; &= \, \alpha_i \, + \, \beta_1 LO_{i,t-1} \, + \, \beta_2 LEC_{i,t-1} \, + \, \beta_3 SG_{i,t-1} \, + \, \beta_4 LnA_{i,t-1} \, + \, \beta_5 OP_{i,t-1} \, + \, \beta_6 WN_{i,t-1} \\ &\quad + \, \beta_7 MB_{i,t-1} \, + \, \beta_8 LL_{i,t-1} \, + \, \varepsilon_{it} \end{split}$$

 $\Delta DN_{i,t}$, representing dividend payouts, and $\Delta RN_{i,t}$, representing share repurchase, are to measure the payouts to the shares after the investment expense. Based on the hypothesis, the long-term investment horizon will have share repurchase less and dividend payout more. I predict that β_1 should be positive in the first estimation and negative in the second equation.

For H4,

$$\begin{split} OP_{i,t} &= \alpha_i + \beta_1 LO_{i,t-1} + \beta_2 LEC_{i,t-1} + \beta_3 SG_{i,t-1} + \beta_4 LnA_{i,t-1} + \beta_5 WN_{i,t-1} + \beta_6 LL_{i,t-1} + \varepsilon_{it} \\ MB_{i,t} &= \alpha_i + \beta_1 LO_{i,t-1} + \beta_2 LEC_{i,t-1} + \beta_3 SG_{i,t-1} + \beta_4 LnA_{i,t-1} + \beta_5 WN_{i,t-1} + \beta_6 LL_{i,t-1} + \varepsilon_{it} \end{split}$$

Similar to the prior hypothesis, this time I test if the long-term investors' monitoring has influence on the valuation and profitability of the firms. I assume that

the firm manager may be pursuing for profitable projects in the long run and give firm better income and value, in turn, the β_1 should be positive.

3: Results

Table 1 Descriptive Statistics

Variables	Observations	Mean	Standard Deviation	25th percentile	Median	75th percentile
Long-term investor ownership (%)	44162	13.80	8.36	5.92	15.16	21.33
ln(Cash / Net assets)	51551	-1.06	0.86	-1.56	-1.02	-0.56
Capital expenditures / Total assets (%)	51551	2.84	6.47	0.26	1.12	3.06
R&D expenditures / Total assets (%)	51551	8.29	1925	0.00	0.00	1.37
Acquisitions expenditures / Total assets (%)	51551	1.19	5.90	0.00	0.00	0.00
Dividends / Total assets (%)	51551	1.33	72.67	0.00	0.00	0.65
Share repurchases / Total assets (%)	51551	0.51	181.83	0.00	0.00	0.0004
Operating income / Total assets (%)	51551	-15.71	2035.93	-0.13	1.87	3.66
Market / Book Ratio	51551	-53.40	7178.26	0.79	1.69	3.50

3.1 Regression Results

Table 2

	ln(Cash / Net assets)
Lagged long-term investor ownership	0.4986***(34.31)
ln(net assets)	-0.2707*** (-142.867)
Capital expenditures / Net assets	0.50501*** (-4.107)
R&D expenditures / Net assets	0.00159*** (4.393)
Acquisitions expenditures / Net assets	0.08632*** (6.775)
Operating income / Net assets	0.0004*** (2.114)
Net working capital / Net assets	0.0002*** (3.351)
Market / Book Ratio	1.53E-06(0.539)
Lagged Leverage	-5.04E-06(-0.991)
R-squared	0.805009

This table presents the results of regressions of cash holdings and investor horizons. Cash holdings is represented by ln(Cash / Net assets). The investor horizon I use Lagged long-term investor ownership to represent. *** indicates significance at the 1% levels.

The table above shows the regression result for H1. In this regression I include the fixed effect based on periods and industries. The positive coefficient of the lag long-term investor ownership shows consistency with my assumption and the t-stats gives an 0.01 significance. I also tested the effect of cash holdings to company expenditures. Based on the coefficients in the table, higher cash holdings influence the firm to expend more on R&D or the takeovers acquisitions, and the firm would spend less on the capital

expenditure.

Table 3

	Δ Capital expenditures / Total assets	Δ R&D expenditures / Total assets	Δ Acquisitions expenditures / Total assets
Lagged long-term investor ownership	-0.524967***(-2.2667)	14.069***(-2.338)	2.445***(11.151)
Lagged excess cash	0.12306***(3.28176)	-2.52E-07(-0.026)	-3.72E-07(-1.0492)
Lagged ln(total assets)	0.001647***(3.00314)	0.007279(0.523)	-0.001119***(-2.15499)
Lagged sales growth	-2.48E-06(-0.80221)	-0.0041(-0.058)	1.31E-06(0.44816)
Lagged Operating income / Net assets	0.00287(0.54398)	0.016016 (1.1962)	-0.000158(-0.31601)
Lagged Working capital / Net assets	-0.000867***(-6.30181)	-0.008935*** (-2.562)	3.78E-05(0.290561)
Lagged Market / Book Ratio	-2.77E-06*(-1.86598)	3.76E-05(0.0559)	-7.16E-07(-0.50992)
Lagged Leverage	1.65E-06(1.15952)	-7.51E-07(-0.021)	-2.57E-07(-0.19085)
R-squared	0.228652	0.357607	0.127750

This table shows the results of regressions of investment on the use of cash on investment and investor horizons. Investment expenditure is measured as capital expenditures, research and development expenditures, and acquisitions expenditures. *** indicates significance at the 1% levels.

The above tables contain three outcomes of the regressions for H2. Each part shows the link between investment horizon and each investment expenditures.

The coefficient of capital expenditures is negative and significant, in contrast, the coefficient of R&D expenditure and acquisition expenditure is positive and significant.

The outcomes of the R&D expenditure and acquisition expenditure matches the hypothesis, however, capital expenditure is not. The part of H2 is rejected.

For the hypothesis 2, I think that the reason is that the firms will have more capital expenditures on the investment when the excess cash is sufficient enough. In the table, only the excess cash of capital expenditures' regression is positive related. If the excess cash is not sufficient enough, capital expenditures are mostly used for maintenance or productivity, having relatively less effect on long-term investment horizon.

Table 4

	Δ Dividends /Total assets	Δ Share repurchases /Total assets
Lagged long-term investor ownership	0.346906***(2.743404)	-0.016385(-0.069399)
Lagged excess cash	3.20E-08(0.263395)	-7.49E-07***(-1.960534)
Lagged In(total assets)	0.000591***(3.255265)	-0.003031***(-5.421153)
Lagged Operating income / Net assets	0.000144(0.904384)	-0.002151***(-3.996085)
Lagged Working capital / Net assets	0.0019 (1.357169)	2.75E-05 (0.231403)
Lagged Market / Book Ratio	-7.84E-06***(-16.21346)	9.02E-07(0.596202)
Lagged Leverage	4.96E-06***(10.77207)	-5.72E-07(-0.394062)
R-squared	0.15419	0.14947

This table shows the results of regressions between the use of cash for payout on shares and investment horizons.

Payout on shares is measured as dividends payout, and shares repurchase.

The table above shows the regression result for H3. Two dependent variables are used. Each regression examine the payouts of shares with the long-term investor ownership. The coefficient of the long-term investor ownership is positive in the regression of dividends payouts and negative in shares repurchase, indicating that the firms will pay more on the dividends payouts and do less share repurchases when there is more long-term investors in the firm. Although the relationship between share repurchase and the investment horizon is consistent with the theory, but the coefficient is not significant. The result is consistent with H3.

^{***} indicates significance at the 1% levels.

Table 5

	Operating income/Total assets	Market / Book Ratio
Lagged long-term investor ownership	5.651388 ***(2.976994)	-11.2085(-0.126582)
Lagged excess cash	2.24E-06 (0.774922)	0.00201(1.427226)
Lagged In(total assets)	0.033633 ***(11.74034)	-2.185735(-1.062701)
Lagged sales growth	-1.18E-06 ***(7.499645)	0.003175(0.273292)
Lagged Working capital / Net assets	0.098930***(9.404629)	2.984849***(6.1869)
Lagged Leverage	-4.49E-09 (-0.000517)	0.671087 ***(16.85215)
R-squared	0.189275	0.402918

This table shows the results of regressions for the profitability of firms and investment horizons. Profitability is measured as operating income over total asset, and market book ratio.

*** indicates significance at the 1% levels.

Above table contains our main regression results for H4. Two dependent variables, market to book ratio and operation income over total asset, are used for demonstrating the profitability. The coefficient of long-term investor ownership with operating income regressions is positive, indicating that long-term investment ownership helps the firms increase profitability. However, the share value is not increased with the investment horizon. It suggests that long-term investment horizon doesn't help increase the share value. The results of the regression are not completely consistent with the hypothesis H4.

4: Discussion and Conclusion

The purpose of the study is to show that the effect of investors using their ownership to monitor the firms for their investment goal. As other literature stated, evidence has showed that the long-term investment owner has more power on monitoring the firms and have less agency problems between managers and investors, so that the more long-term owner the more the firms will focus on long-term profit projects, instead of having short term projects for quick profits, also gain more because of less agency cost. In my study, the core hypotheses are to examine whether the long-term investment horizon do have the influence as I predicted on the firms. The hypotheses are formed in the order of holding the cash of firms, using it on investment, then the payouts, and then the effect eventually on the firm value and profitability. The data I collect from the database contains the major public companies in the US industry from 2006 to 2018. Using the panel data, firm and period fixed effect model, the results of the regressions appear are not completely matched the assumption I made.

As the results stated, the long-term investors monitoring has significant effect on the firm and appears to help increase the profit. With the sufficient excess cash for investment or payouts, the managers would choose to pursue the profitable projects, however, the study also shows that the value of the firms may not correspondingly increase. The long-term investment horizons may give shareholders more dividends payouts, but not the better shares valuation when the firms have more money to distribute.

In sum, the study proves most of the relationship between investment horizon with firms payouts, profitability, and investment I assumed previously, giving the evidence that long-term investment horizon of the investors has effective monitoring on

the firms. From this study, I learn more about investors monitoring contribution to affect the firms, in turn, acquiring the profits for firms and gain for own interest.

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