รายงานการวิจัย

เรื่อง

The impact of ownership structure on a firm's investment behavior

ผลกระทบของโครงสร้างผู้ถือหุ้นที่มีต่อพฤติกรรมการลงทุนของบริษัท

ฐิติมา สิทธิพงษ์พานิช

ภาควิชาการเงิน คณะบริหารธุรกิจ

มหาวิทยาลัยธุรกิจบัณฑิตย์

รายงานการวิจัยนี้ได้รับทุนอุดหนุนการวิจัยจากมหาวิทยาลัยธุรกิจบัณฑิตย์ พ.ศ. 2555

ชื่อโครงการวิจัย: ผลกระทบของโครงสร้างผู้ถือหุ้นที่มีต่อพฤติกรรมการลงทุนของบริษัท

ผู้วิจัย: ฐิติมา สิทธิพงษ์พานิช

สถาบัน: มหาวิทยาลัยธุรกิจบัณฑิตย์

ปีที่ได้รับการตีพิมพ์: 2556

สถานที่พิมพ์: มหาวิทยาลัยธุรกิจบัณฑิตย์

ลิขสิทธิ์: สงวนลิขสิทธิ์

จำนวนหน้างานวิจัย: 43 หน้า

บทคัดย่อ

ผู้วิจัยได้ทำการศึกษาโครงสร้างผู้ถือหุ้นและการพึ่งพาเงินทุนภายในเพื่อการลงทุนของบริษัทจดทะเบียนในประเทศไทยช่วงปี 2544 ถึง 2551 ผลวิจัยสนับสนุนประเด็นเรื่องต้นทุนตัวแทนอันเนื่องมาจากกระแสเงินสดอิสระของบริษัท (Agency costs of free cash flow) พบว่าธุรกิจที่มีกลุ่มครอบครัวเป็นผู้ถือหุ้นรายใหญ่จะส่งผลให้การพึ่งพาเงินทุนภายในเพื่อการลงทุนลดลง สัดส่วนความเป็นเจ้าของของผู้ถือหุ้นกลุ่มครอบครัวนั้นส่งผลต่อการพึ่งพาเงินทุนภายในเพื่อการลงทุนในลักษณะความสัมพันธ์แบบเส้นโค้งรูปตัวเอส ซึ่งสนับสนุนทั้งเรื่องผลประโยชน์ที่สอดคล้องกัน (Interest alignment) และการสร้างความมั่นคงเพื่อผลประโยชน์ส่วนตน (Entrenchment) นอกจากนี้ การลงทุนของบริษัทที่มีผู้ถือหุ้นรายใหญ่เป็นสถาบันการเงินในประเทศจะมีการพึ่งพาเงินทุนภายในต่ำกว่าบริษัทอื่น เนื่องจากสถาบันการเงินสามารถลดความไม่เท่าเทียมกันของข้อมูลระหว่างบริษัทและตลาดทุนได้ ในขณะที่ถ้าผู้ถือหุ้นรายใหญ่เป็นรัฐบาล นักลงทุนต่างชาติ และสถาบันต่างชาติ จะมีผลทำให้การพึ่งพาเงินทุนภายในเพื่อการลงทุนเพิ่มมากขึ้น อีกทั้ง งานวิจัยนี้ไม่พบหลักฐานปัญหาจากการลงทุนเกินตัวในประเทศไทยในช่วงเวลาหลังวิกฤติการณ์ทางการเงินในปี 2540

คำสำคัญ: การพึ่งพาเงินทุนภายในเพื่อการลงทุน โครงสร้างผู้ถือหุ้น ประเทศไทย

Title of Research: The impact of ownership structure on a firm's investment behavior

Authors: Thitima Sitthipongpanich
Institution: Dhurakij Pundit University
Year of Publication: 2013
Publisher: Dhurakij Pundit University

Number of Pages: 43 pages

Abstract

I investigate the ownership structure and investment-cash flow sensitivity of Thai listed firms over a period of 2001-2008. The results are strongly supported by the agency costs of free cash flow. The presence of family owners as the largest shareholder reduces the sensitivity of investment and cash flow. The ownership levels of family shareholders affect the investment-cash flow sensitivity in an S-shaped relation, supporting the interest alignment and entrenchment effects. In addition, the investment of domestic financial institution-owned firms is less sensitive to internal cash flow, implying that domestic financial institution could alleviate asymmetric information problems between firms and capital markets. The government-owned, foreign investor-owned and foreign institution-owned firms have higher investment-cash flow sensitivity. Moreover, there is no evidence showing the potential overinvestment problems of firms in Thailand after the 1997 financial crisis.

Keywords: Investment-cash flow sensitivity, Ownership structure, Thailand

Table of Contents

List of Tables

Chapter 1
Introduction

Previous studies document that ownership structure varies across countries. In the USA, the UK and other common law countries, the ownership structure of large firms are widely held (La Porta, Lopez de Silanes, & Shleifer, 1999). The agency theory suggests that managers act on behalf of shareholders to make firms' decisions and to maximize firm value (Jensen & Meckling, 1976). However, managers may exploit their own interests at the expense of shareholders, leading to conflicts of interest between managers and shareholders. Thus, shareholders might have to restrain managerial entrenchment by providing incentives or using controlling and monitoring mechanisms. The agency theory argues that an equity ownership helps align a manager's interest with shareholders' interest. As the proportion of managerial ownership increases, the conflicts of interest between managers and shareholders could decline. In addition, Shleifer & Vishny (1986) suggest shareholders may have little incentive to play a monitoring role in a firm with dispersed ownership structure; therefore the presence of large shareholders is a solution to reduce free-rider problems, to monitor firm management and/or to remove incumbent managers.

According to Claessens, Djankov & Lang (2000) and Faccio & Lang (2002), the ownership structure of firms in East Asian and Continental European countries is highly concentrated. In this institutional context, major shareholders seem to influence management through their voting rights and it is common to find their participation in the management team. La Porta, Lopez de Silanes & Shleifer (1999) find that, outside the USA, most firms are family-owned. Firms that are owned by the government and institutional investors are also commonly found in Asia and Europe (Dinc, 2005; Fan, Wei, & Xu, 2011; Pawlina & Renneboog, 2005). The benefit of ownership concentration is to reduce conflicts of interest between managers and shareholders; however, such highly concentrated structure may lead to expropriation of minority shareholders.

The effect of ownership structure is examined not only on firm performance (Anderson & Reeb, 2003; Claessens, Djankov, Fan, & Lang, 2002; Lemmon & Lins, 2003; McConnell & Servaes, 1990; Villalonga & Amit, 2006), but also on other financial aspects, such as dividend policy

(DeAngelo & DeAngelo, 2000; Faccio, Lang, & Young, 2001) and financing policy (Anderson, Mansi, & Reeb, 2003; Faccio, Lang, & Young, 2003; Wiwattanakantang, 1999). Although several studies about the relationship between ownership structure and corporate investment policy are found, they are investigated in developed countries (Andres, 2011; Crespi & Scellato, 2007; Goergen & Renneboog, 2001; Gugler, 2003; Hadlock, 1998; Pawlina et al., 2005; Pindado, Requejo, & de la Torre, 2011). Evidence about the effect of ownership structure on a firm's investment behavior is scarce in emerging markets, particularly East Asia (Wei & Zhang, 2008).

Literature about investment policies has been of scholarly interest. The role of internal cash flow on firms' investment has been investigated based on the irrelevance of financial structure to investment decisions in the condition of perfect markets (Modigliani & Miller, 1958). According to the concept of market imperfections and asymmetric information problems, firms' investments are dependent on an availability of internal funds and access to external funds (Leland & Pyle, 1977). The pecking order or financial hierarchy theory also predicts that firms prefer internal financing to external financing because of a lower cost of capital (Myers & Majluf, 1984). A large body of previous empirical studies has documented that the impact of internal funds on firms' investment is positively significant (Fazzari, Hubbard, & Petersen, 1988; Kuh & Meyer, 1959).

According to the agency costs of free cash flow, when interests of managers are not aligned with those of the shareholders, managers may spend generated cash flow to exploit their own benefits, causing the overinvestment problem (Jensen, 1986). Thus, the investment of firms will be highly dependent on internal fund, reflecting the free cash flow problem. However, the agency costs could be alleviated if managerial ownership is increased to provide incentives for managers to maximize shareholder wealth, thus resulting in a negative relationship between managerial ownership and investment-cash flow sensitivity (Pawlina et al., 2005). These arguments are also applied to the setting of concentrated ownership in emerging markets. In such context, large shareholders are often involved in management or could influence on firms' policies through their voting rights. Because large shareholders have high incentives to maximize the value of their own stocks, it is likely that they play a monitoring role to reduce agency problems. Thus, the investment of firms with a large shareholder is expected to be less sensitive to internal cash flow.

However, when another type of agency costs i.e. entrenchment problems arises, the relationship between ownership levels and investment-cash flow sensitivity becomes non-linear. The increase in ownership levels may induce large shareholders to pursue their interests, leading to overinvestment problems and aggravating the investment-cash flow sensitivity. Until the ownership levels appear to be sufficiently high, the interest alignment effects could be reflected by the lower investment-cash flow sensitivity. Therefore, an S-shaped relation between the ownership levels of large shareholders and investment-cash flow sensitivity could be expected.

In addition, the asymmetric information hypothesis argues that the investment of firms is dependent on internal cash flow as a result of higher costs of external financing, indicating underinvestment problems. It is possible that large shareholders influence firms' investment policies by choosing to underinvest or pass over some productive investment projects because of having less information in capital markets and no access to external financing. Hence, an increase in ownership levels of large shareholders would lead to a higher investment and cash flow sensitivity according to the asymmetric information hypothesis. Nevertheless, the positive relation between investment and cash flow could possibly be reduced if large shareholders could mitigate the imperfections of capital markets. For example, family owners, institutional shareholders and financial institutions can facilitate firms in accessing to external fund, which yields a lower sensitivity of investment and internal cash flow (Andres, 2011; Goergen et al., 2001; Pawlina et al., 2005).

The significant role of shareholders is widely pronounced. I will use non-financial listed firms on the Stock Exchange of Thailand to investigate their ownership structure from 2001 to 2008. Financial characteristics of firms will be compared by type of the largest shareholder. I will examine whether investment of Thai firms is related to their internal cash flow and whether ownership structure will affect firms' investment-cash flow sensitivity. In the wake of the crisis, overinvestment behaviors of Thai listed firms will also be addressed.

The results show that a majority of Thai listed firms (61% of total firm-year observations) are owned by families with an average shareholding of 44%. The second dominant group of shareholders is foreign investors, accounting for 17% of total firm-year observations. On average, foreign investors hold 46% ownership. About 9% of total observations are owned by

groups of unrelated families. The government-owned companies represent about 4% of total observations. The proportion of firms owned by a foreign institution equals 2% and that of firms owned by a domestic financial institution accounts for almost 2%.

Using panel data to estimate an investment model, I find that the investment of Thai listed firms is dependent on internal cash flow. The results of Ordinary Least Square (OLS), Fixed Effects (FE) and Generalised Method of Moments (GMM) estimators are consistent. The findings show the significant relationship between ownership structure and investment-cash flow sensitivity in all regressions. I find that the investment of firms owned by families is less sensitive to internal cash flow. The results of GMM estimator show the S-shaped relation between the investment-cash flow sensitivity and family ownership levels, which is consistent with both interest alignment and entrenchment effects (McConnell et al., 1990; Morck, Shleifer, & Vishny, 1988). The cash flow sensitivity of investment is mainly caused by the agency costs of free cash flow because families might be unwilling to raise capital through equity financing as a result of stock dilution effects. They may also prefer to use less debt to reduce financial risks (Shleifer & Vishny, 1986).

In addition to family shareholders, outside blockholders have an effect on investment behavior of firms. The investment of firms owned by domestic financial institutions is less sensitive to internal cash flow. This result indicates that, on the one hand, the domestic financial institutions play an important role in monitoring managers and alleviate the free cash flow problem. On the other hand, they mitigate information asymmetries in capital markets, thus providing firms an easy access to external finance. However, this finding seems to be supported by informational asymmetries because firms in emerging markets where asymmetric information problems are highly pronounced usually find it difficult to obtain external financing (Espenlaub, Khurshed, & Sitthipongpanich, 2012; Paulson & Townsend, 2004; Shen & Wang, 2005).

However, I find that the investment-cash flow sensitivity becomes higher in firms that are owned by the government, foreign investors and foreign institutions. This evidence could be attributed to either free cash flow problems or underinvestment problems. The results should be interpreted in the context of emerging markets where political connections are tremendously important (Dinc, 2005). It is most likely that the government-owned firms do not have problems in getting access to external fund (Chan, Dang, & Yan, 2012; Leuz & Oberholzer Gee, 2006).

The positive relationship between investment-cash flow sensitivity and the presence of the government as the largest shareholder seems to be consistent with the free cash flow hypothesis. The government might play a passive role in monitoring management because the government ownership is ultimately of public interest. It is also possible that politicians who participate in the government get control of the government-owned firm's cash flow and have opportunities to exploit private benefits (Jensen & Meckling, 1978).

For firms owned by foreign investors and foreign institutions, the increase in investment and cash flow sensitivity is likely to be related to the underinvestment problems. Foreign investors and foreign institutions are found to have high commitment (Douma, George, & Kabir, 2006) and play an active monitoring role (Filatotchev & Wright, 2011). Also, previous research shows that firms owned by foreign institutions have higher performance but lower investment (Ferreira & Matos, 2008). Informational asymmetries are the key burden for foreign investors to make an investment decision or to find strategic alliances (Siegel, 2005). It is more likely that foreign investors are less informed in the markets they invest into (Kang & Kim, 2010), firms owned by foreign investors and foreign institutions, therefore, face underinvestment problems.

In addition, I find the positive relationship between investment and internal cash flow both in firms with low investment opportunities and in those with high investment opportunities. However, I do not find the difference in the sensitivity of investment and cash flow between these two groups of firms, indicating that potential overinvestment problems do not exist in Thai firms with low investment opportunities after the financial crisis in 1997.

The findings of this research provide a better understanding about the role of shareholders and firms' investment behaviors in an emerging market and complement previous studies in various aspects. First, the study of Espenlaub, Khurshed & Sitthipongpanich (2012) examine the impact of bank connections on investment-cash flow sensitivity of Thai firms between 1996 and 2000. They document that bank connections alleviate information asymmetry between firms and external finance providers in an emerging market. This article will look at the impact of ownership structure on firm investment policy in Thailand from 2001 to 2008. The ownership structure of Thai firms is highly concentrated and dominated by families (Khanthavit, Polsiri, & Wiwattanakantang, 2003; Wiwattanakantang, 2001), therefore, it is interesting to see whether the ownership structure will have an effect on the investment policies of Thai firms. In

particular, how family owners could affect firms' investment policies will be emphasized (Andres, 2011; Pindado et al., 2011).

Second, it has been argued that the Asian financial crisis was caused by firms' overinvestment behaviors in the pre-crisis period (Sitthipongpanich, 2012). I will examine investment behaviors of Thai firms after the Asian crisis to shed light on whether the firms are highly concerned about such problems and have paid attention to their investment policies. To the best of my knowledge, this paper is the first to answer how Thai firms invest their capital and whether they overinvest after the 1997 Asian financial crisis. In addition, the sample period of 2001-2008 will reflect the behaviors of Thai listed firms in response to public attention of good governance practices.

Third, Wei et al. (2008) investigate the effect of control and cash flow right of the largest shareholder of firms on investment policies in East Asian countries. Their findings show that the investment-cash flow sensitivity decreases if the cash flow rights of the largest shareholder increases. However, if the divergence degree between the control rights and cash flow rights increases, the investment become more sensitive to cash flow. This research will extend Wei et al. (2008) by focusing on the role of each type of shareholders and a non-monotonic relationship between ownership concentration and investment-cash flow sensitivity of firms. It will be interesting to examine the role of family shareholders and of institutional shareholders in monitoring management and mitigating market imperfections in an emerging market (Andres, 2011; Goergen et al., 2001; Pindado et al., 2011).

Fourth, in this paper, a panel data set over an 8 year period will allow me to investigate the impact of ownership structure on investment-cash flow sensitivity. I will use three different estimators for investment equations, including OLS, FE and GMM. The results of three estimators could confirm the role of internal cash flow and firms' investment. Therefore, this research will complement the findings of previous literature, for example, the OLS results of Hadlock (1998) and Wei et al. (2008), and the FE results of Pawlina et al. (2005).

Finally, it has been argued that the 1997 Asian financial crisis was triggered by poor corporate governance and management expropriation (Backman, 1999; Joh, 2003; Johnson, Boone, Breach, & Friedman, 2000; Pomerleano, 1998). It casts some doubts about the monitoring role

of shareholders. I aim to present whether corporate governance measures could explain a firm's investment behavior. In particular, this study attempts to show whether shareholders are effective corporate governance mechanisms. It will also provide additional evidence for relevant authorities to strengthen good governance practices and to prevent firms' overinvestment problems, which may lead to a financial crisis in the future.

The research is structured into five chapters as follows. The next chapter reviews existing literature about ownership structure and investment-cash flow sensitivity. Specifically, concentrated ownership in emerging markets and the impact of cash flow on firms' investment are discussed. Chapter 3 describes the data and methodology. Chapter 4 examines the ownership structure in Thailand and the differences in firm characteristics among each type of shareholders. This chapter also examines whether the ownership structure has an impact on investment-cash flow sensitivity. Whether the overinvestment behavior could be observed in Thailand after the crisis is also investigated. Chapter 5 concludes the research and provides recommendations.

Chapter 2
Literature Review

Literature on the importance of ownership structure is reviewed in this chapter. The concentrated ownership, especially family-owned firms, in emerging markets is described. According to the agency theory, the benefits and costs of concentrated shareholding is discussed. In addition, the concept of market imperfections confirms that the investment of firms is dependent on internal cash flow. The impact of ownership structure on firms' investment-cash flow sensitivity is explained by the agency costs of free cash flow and information asymmetric problems.

This chapter is structured as follows. Section 2.1 reviews the literature on concentrated ownership structure and benefits and costs of concentrated shareholdings. Section 2.2 gives an overview of the effect of internal cash flow on investment policy. Section 2.3 discusses the impact of ownership structure on firms' investment-cash flow sensitivity, and introduces hypotheses.

2.1 Concentrated shareholdings

Ownership structure in the Anglo-Saxon financial system is relatively dispersed. In such diffuse ownership framework, conflicts of interest between managers and shareholders and free-rider problems are major concerns of corporate governance. The agency theory of Jensen and Meckling (1976) predicts that an equity ownership helps align a manager's interest with shareholders' interest. As the proportion of managerial ownership increases, the conflicts of interest between managers and shareholders are reduced. In addition, Shleifer and Vishny (1986) suggest that the presence of large shareholders is a solution to reduce the free-rider problems. Shareholders may have little incentive to play a monitoring role in a firm with diffuse ownership. A large shareholder, who owns sufficient shares, possibly has an incentive to effectively monitor the firm's management and/or to remove incumbent managers because he/she would benefit from better firm performance.

In contrast to dispersed ownership, the ownership structure and control are apparently found to be concentrated in many countries. In particular, the concentrated ownership and family-owned

firms are commonly found in the East Asian and Continental European countries (Claessens et al., 2000; Faccio et al., 2002). Concentrated ownership is a substitute for weak investor protection. If the legal protection of investors is weak, a large shareholding will overcome potential agency problems as a result of an interest alignment between managers and shareholders (Shleifer & Vishny, 1997). The concentrated ownership and family ownership are important features of network structures and firms in East Asia (Hamilton, Zeile, & Kim, 1990). Family relationships help strengthen trust in the networks (Hamilton & Biggart, 1988), and it is through family relationships that the nature of firms in East Asia is mostly developed (Backman, 1999). A firm's establishment is usually carried out by fund raising through families and friends (Biggart, 1997; Paulson et al., 2004).

Before the onset of the 1997 Asian financial crisis, a high level of ownership of firms in a large number of emerging markets was positively related to firms' value, measured by Tobin's Q ratio (Lins, 2003). In addition, the relationship between the concentrated ownership and the quality of governance practices is positively significant, especially in countries with lower investor protection. As a result, good governance practices contribute to an increase in firms' value, measured by Tobin's Q ratio, in 27 countries during 2000-2001 (Durnev & Kim, 2005).

However, in the context of concentrated ownership, the agency theory predicts that agency problems are due to conflicts of interest between major shareholders and minority shareholders. Although large shareholders have ownership incentives to maximize the firm's value, they may pursue their own interests if private benefits are higher than shared benefits that would be allocated to all shareholders. Private benefits refer to benefits that major shareholders obtain at the expense of minority shareholders. As a result of having sufficient voting rights to control the firm's management, large shareholders may be entrenched in director positions. In Italy, Volpin (2002) finds that executive turnover is lower in firms where family owners hold executive positions. The presence of family shareholders on the firm's board leads to lower firm value. Large shareholders may take control over the firm's management and pursue private benefits at the expense of minority shareholders.

Large shareholders may pursue private benefits through internal transactions such as price transfer and debt guarantee. (Johnson, La Porta, Lopez de Silanes, & Shleifer, 2000; Khanna, 2000). They may also use resources of a well-performing firm to rescue another poorly-

performing firm in the same group through mergers. Minority shareholders of the affiliated firm that acquires the poorly-performing firm in the group would bear the cost of inefficient mergers as indicated by negative abnormal returns of the acquiring firm (Bae, Kang, & Kim, 2002). In addition, Faccio et al. (2001) provide evidence that large shareholders pursue their private benefits by limiting dividend payments in the structure of group affiliation. Fan & Wong (2002) also find that large shareholders are detrimental to firms' credibility of accounting earnings.

In emerging markets, the concentrated ownership is a key institutional characteristic that result in both benefits and costs. The concentrated ownership is associated with firm performance and financial behaviors, but may also result in the possibility of expropriation of minority shareholders. However, a better understanding of family-owned institutions in emerging markets is needed. There is little knowledge about the role of family shareholders and other blockholders, such as the government and institutional investors, in monitoring management and obtaining external resources for firms. In this paper, the impact of ownership structure on firms' investment behavior is examined.

2.2 Effect of internal cash flow on investment policy

In perfect capital markets, the financial structure is irrelevant to investment decisions (Modigliani et al., 1958). However, previous studies have documented that the relation between internal funds and investment of firms is positively significant (Devereux & Schiantarelli, 1990; Fazzari et al., 1988; Kuh et al., 1959). As a result of asymmetric information problems in imperfect markets, the cost of internal funds is lower than that of external finance (Leland et al., 1977; Myers et al., 1984). Firms' investments are dependent on an availability of internal funds and access to external funds because of information asymmetry between firms and external finance providers (Leland et al., 1977).

The impact of internal cash flow on firms' investment has been investigated using a neo-classical model or the Tobin's Q investment model. In the Tobin's Q investment model, the proxy of Tobin's Q ratio should be the only factor determining a firm's investment under the concept of market perfections. Internal cash flow should not affect the firm's investment. Thus, if the proxy of Tobin's Q ratio is deterministic and incorporates all forward-looking expectations that are relevant for the firm's investment, internal cash flow will be a proxy for

financial constraints on investment after controlling for all investment opportunities. In empirical specifications, the proxy of Tobin's Q ratio at the beginning of the period is used as a forward-looking measure of future profitability or investment opportunities.

In addition, empirical investment specifications may include a variable of lagged sales for accelerator effects. The level of sales reflects future expectations and capacity utilization. Thus, it should indicate the need for investment spending. Abel and Blanchard (1986) demonstrate that distributed lags of sales, affect investment when firms face delivery lags and adjustment costs of capital. Therefore, the lagged value of sales is a determinant of investment. Furthermore, sales may be correlated with internal cash flow which is possibly a proxy for accelerator effects. A variable of lagged sales should be added to reduce the omitted variable bias and to reflect the accelerator effects on investment that may be captured by the coefficient of internal funds. After controlling for accelerator effects, the coefficient of internal cash flow, as a proxy for financial constraints on investments, should indicate the impact of internal liquidity on investment.

2.3 Ownership structure and investment-cash flow sensitivity

The impact of ownership structure on a firm's investment-cash flow sensitivity is explained by either agency costs of free cash flow or asymmetric information problems. According to agency costs of free cash flow, managers of levered firms are likely to choose risky investment projects and overinvest because they have limited liability (Jensen, 1986; Jensen et al., 1976). Managers may also extract private benefits by spending high free cash flow to engage in an empire building strategy. These arguments are also applied to the context of concentrated shareholdings. Because a large shareholder may be involved in management, he/she could influence on a firm's investment policy and pursue their own interests by an empire building strategy. As a result, a positive relationship between cash flow and investment could be expected to reveal the agency costs of free cash flow problem.

Nevertheless, an increase in ownership of large shareholders would raise interest alignment and provide incentives for them to prevent managers in spending internal cash flow on unproductive investment projects, hence reducing agency costs. In consequence, the increase in ownership levels of large shareholders could decrease the investment-cash flow sensitivity. The

relationship between the investment-cash flow sensitivity and ownership levels is however not monotonic (Andres, 2011; Crespi et al., 2007; Pawlina et al., 2005). At moderate to high levels of ownership, large shareholders may become entrenched and exploit private benefits through aggressive investment decisions. Therefore, the relationship between ownership levels and the sensitivity of investment and cash flow could be reversed at these levels. Until the ownership levels become sufficiently high, the investment-cash flow sensitivity could be lower, thus showing an S-shaped relationship between the investment-cash flow sensitivity and ownership levels.

In addition, the agency costs of free cash flow could also be reduced when large shareholders or blockholders, such as the government, financial institution and foreign investor, play an active monitoring role. The agency costs could be decreased because large shareholders efficiently perform their roles in monitoring, controlling and disciplining managers to prevent overinvestment problems. Hence, the investment-cash flow sensitivity is expected to be lower when large shareholders play a monitoring role in reducing agency costs of free cash flow.

Findings of previous research in East Asia also support agency costs of free cash flow and overinvestment argument (Wei et al., 2008). The authors show the positive relationship between investment-cash flow sensitivity and the divergence between control rights and cash flow rights of the largest shareholders. However, previous studies support the argument of interest alignment and monitoring role of shareholders (Andres, 2011; Crespi et al., 2007; Pawlina et al., 2005). The presence of large shareholders alleviates agency problems and helps monitor managers (Shleifer et al., 1986). Pawlina et al. (2005) show that outside blockholders, including financial intuitions, the government and industrial firms, play a monitoring role, leading to a decline in the sensitivity of investment and cash flow.

Based on asymmetric information problems, an underinvestment problem could arise when a firm faces a shortage of internal funds and managers have less information about productive investment projects (Myers et al., 1984). As interests of managers are aligned with those of shareholders, managers would have incentives to maximize shareholder wealth and would be more reluctant to accept a risk premium on external funds from capital markets. In this situation, when managerial ownership increases, a firm's investment would be more dependent on internal cash flow. However, the presence of large shareholders, which could help firms obtain an easy

access to external funds, could alleviate asymmetric information problems between firms and capital markets and underinvestment problems. Thus, a negative relationship between large influential shareholders in the capital markets and investment-cash flow sensitivity is expected.

In the U.S., results of Hadlock (1998) support the asymmetric information hypothesis and underinvestment behaviors of managers. As a consequence of asymmetric information, managers may pass over some positive NPV investment projects when firms face financial constraints. The authors find that investment-cash flow sensitivity is positively related to inside ownership; however, the relationship decreases at higher levels of shareholdings. The findings suggest that the managers seem to pay attention to shareholder value. Similarly, Goergen & Renneboog (2001) suggest that a low level of managerial ownership create the underinvestment problem in UK firms. However, Andres (2011) find the benefits of family founders in obtaining external funds and reduce liquidity constraints. The author documents that family firms are less financially constrained because family shareholders use their reputation to overcome imperfect markets and asymmetric information problems. Pawlina et al. (2005) also document that financial institutions mitigate information asymmetry between firms and external finance providers and they could possibly provide an easy access to external funds, thus reducing the cash flow sensitivity of investment.

Hypotheses of this research are described as follows. As a result of asymmetric information problems and imperfect capital markets, a cost of internal funds is different from that of external funds. Supported by the pecking order or financial hierarchy theory, firms may undertake investment projects, depending on the availability of internal funds to avoid a high cost of external funds. Therefore, I expect that the availability of internal cash flow is a determinant of investment.

H1: The internal cash flow is associated with firms' investment.

I explore the impact of the presence and ownership of large shareholders on firms' corporate investment. The large shareholders will be categorized into 6 types, including family, a group of unrelated families, the government, domestic financial institution, foreign investor and foreign institution. On the one hand, a large shareholder can control and influence firms' policies to maximize shareholder wealth. The presence of a large shareholder potentially provides the

discipline for management to invest in productive projects and to mitigate managerial incentives to engage in myopic investment decision, thus the investment of firms is expected to be less sensitive to cash flow. On the other hand, they can exert their power to extract private benefits from firms, thus increasing agency costs and the investment-cash flow sensitivity. In order to examine the role of large shareholders in reducing agency costs and playing an active monitoring role, I expect the following hypothesis.

H2: The presence of the largest shareholder is negatively associated with the investment-cash flow sensitivity.

According to the agency costs of free cash flow, large shareholders may be tempted to spend internal cash flow in empire building and engage in overinvestment behaviors. However, an increase in shareholdings appears to alleviate conflicts of interest between major shareholders and minority shareholders. The interest alignment could prevent the large shareholders from spending free cash flow on unproductive investments, thus leading to lower investment-cash flow sensitivity (H3). However, at higher levels of ownership, the large shareholders may become entrenched and expropriate minority shareholders. They may overinvest and engage in aggressive investment strategies; therefore the investment-cash flow sensitivity is likely to increase (H4). Finally, at a sufficiently high ownership level, the large shareholders may be more concerned about total shareholder wealth and their investment decisions, which could reduce free cash flow problems. The investment-cash flow sensitivity could then be reserved at the extremely high ownership levels (H5). Therefore, I expect a non-monotonic relationship between the ownership levels and investment-cash flow sensitivity.

H3: The ownership percentage held by the largest shareholder is negatively associated with the investment-cash flow sensitivity.

H4: At moderate to high levels of shareholdings, the ownership percentage held by the largest shareholder is positively associated with the investment-cash flow sensitivity.

H5: At a sufficiently high level of shareholdings, the ownership percentage held by the largest shareholder is negatively associated with the investment-cash flow sensitivity.

In order to examine overinvestment problems, I will classify firms into two groups; firms with low investment opportunities (low Q) vs. firms with high investment opportunities (high Q).

Overinvestment problems are more serious in firms with low growth opportunities (Jensen, 1986). At low Q firms, there might be a shortage of positive NPV projects and generated internal cash flow may be spent by managers on value destroying projects. Thus, I expect that the investment-cash flow sensitivity of low Q firms should be higher than that of high Q firms, indicating the overinvestment problems.

H6: The investment-cash flow sensitivity of low Q firms is higher than that of high Q firms.

Chapter 3
Data and Methodology

This chapter describes the sample of this research and sources of data in Section 3.1. Definitions of each type of shareholders are explained in Section 3.2. Finally, Section 3.3 of the chapter discusses variables used in investment models and research methodology. In this research, three estimators i.e., OLS, FE and GMM, are used to investigate the impact of ownership structure on investment-cash flow sensitivity.

3.1 Sample

Sample firms are non-financial firms listed on the Stock Exchange of Thailand (SET). The sample period is from 2001 to 2008, covering an 8-year period. This sample period will reflect the post-crisis ownership structure and its impact on a firm's investment behavior. It should reflect the investment behaviors of firms during a normal economic situation in Thailand to a great extent. In response to the financial crisis in 1997, shareholders might increase their awareness to monitor firms' investment policies. I exclude firms in the banking and financial sector because of the difference in financial statements between corporations and financial institutions.

I collect lists of shareholdings and financial statements of Thai listed firms from the SETSMART database. Firms' financial statements include statements of financial position, statements of comprehensive income and statements of cash flow. To begin with, lists of major shareholders, who own at least 0.5% in a listed firm, are collected to define ownership structure. However, it does not report a firm's ultimate shareholders. An ultimate shareholder is a large shareholder who holds shares through related families, private companies or firms of related families. Therefore, tracing ultimate shareholders via cross-shareholding and pyramidal control structure is required.[1] I define an ultimate shareholder as in studies by Khanthavit et al. (2003) and Polsiri and Wiwattanakantang (2006). Additional sources of information are used to

[1] The databases of ownership structure used in this thesis define the patterns of pyramidal shareholding and cross-shareholding as provided by La Porta et al. (1999). A firm C is controlled by Family A via a pyramid if it is controlled by a listed firm B that is controlled by Family A. In addition, there is cross-shareholding by the firm C in its control chain if the firm C holds shares in its controlling shareholder or in other companies along that chain of control. For example, there is a cross shareholding by the firm C if it owns any shares in the firm B.

trace ultimate shareholders. Those information sources include the database of Department of Business Development, Ministry of Commerce, company files (Form 56-1), lists of family business groups, lists of affiliated firms, and several books about wealthy families in Thailand.

3.2 Ownership structure

Types of ultimate shareholders are categorized as follows.

i. Family
ii. A group of unrelated families
iii. The government
iv. Domestic financial institution
v. Foreign investor
vi. Foreign institution

Family is defined as members of a family and a group of related families, including their relatives. *A group of unrelated families* is defined as members of a group of families that are not related or that jointly own a private company. *The government* is defined as the Thai government. *Domestic financial institution* is defined as a financial institution that is owned by domestic investors. *Foreign investor* is defined as a foreign individual, family, and corporation. *Foreign institution* is defined as a financial institution that is owned by foreign investors.

I define a large shareholder of firms as one with a shareholding of more than 10%. The cut-off point of ownership at 10% is used to define a large shareholder as in prior literature, which suggests that such a stake lends sufficient power.[2] If there is more than one shareholder with 10% or more, all of them are assumed to have similar interest. In the context of family-owned institutions, a firm is established by shared capital between families. I assume that conflicts of interest between large shareholders are not existent because they are in alliance. Hostile takeovers are not a common strategy in obtaining a large shareholding to control the firm. The large shareholding of the firm is held and retained by the family. A large percentage of company shares is not actively traded in the stock market in order prevent a hostile takeover, therefore I

[2] A major/large shareholder is defined as a shareholder with more than 10% shareholding, following La Porta et al. (1999) and Claessens et al. (2000).

assume that there is no possibility of having two conflicting large shareholders or more in the firm.

For each sample year, I have cross-section data. For each cross-section data, a firm is defined as a firm owned by a large shareholder according to the data on ownership in that year. The final observations after defining the presence of a large shareholder and collecting financial data, include 2,558 firm-year observations.[3] The number of sample firms in each year is shown in Table 3.1.

Table 3.1: Number of firms with a large shareholder during 2001-2008

This table shows the distribution of sample firms between 2001 and 2008. The number of firm-year observations and the proportion (%) of total firm-year observations are shown. A large shareholder is defined as one with more than 10% ownership. Widely-held firms are defined as firms without a large shareholder.

Year	2001	2002	2003	2004	2005	2006	2007	2008	Total
Firms owned by a large shareholder	240	251	265	282	310	346	360	357	2,411
(%)	94.86	93.66	93.31	92.46	93.09	95.84	96.26	93.95	94.25
Widely-held firms	13	17	19	23	23	15	14	23	147
(%)	5.14	6.34	6.69	7.54	6.91	4.16	3.74	6.05	5.75
Total observations	253	268	284	305	333	361	374	380	2,558

3.3 Methodology

I will provide the descriptive statistics of ownership structure and financial characteristics of sample firms. Analysis of variance (ANOVA) is used to investigate the differences in financial characteristics between each group of shareholders. ANOVA provides a statistical test of whether mean values of several groups are all equal. Financial variables used in the descriptive statistics are as follows. Natural logarithm of total assets, total assets, total sales and a ratio of fixed assets to total assets are indicators for firm size. The measures of capital structure or sources of financing include leverage ratios are defined by a ratio of long-term debt to total assets and a ratio of total liabilities to total assets. Furthermore, proxies of profitability include

[3] The total number of firm-year observations (excluding financial firms listed in the SET) is 3,007. Observations are excluded from the sample if the firm data are in the year of rehabilitation (262 observations) and if financial and ownership data of observations is missing (187 observations). The final sample includes 2,558 firm-year observations.

net profit margin and return on assets. The net profit margin is calculated by a ratio of income after tax to total sales. The return on assets is a ratio of income after tax to total assets.

In addition, financial variables used to investigate the investment and cash flow sensitivity are a ratio of investment spending to capital at the beginning of the year, a ratio of cash flow to capital at the beginning of the year, a ratio of lagged sales to capital at the beginning of the year and a proxy of lagged Tobin's Q ratio. All financial data are winsorized at 5% and 95%. To test hypotheses H1 to H6 as described in Chapter 2, investment models are shown in the following specifications (1) to (4).

(1) Impact of internal cash flow on a firm's investment

$$\frac{I_{i,t}}{K_{i,t-1}} = \alpha_{i,t} + \beta_1 \frac{CF_{i,t}}{K_{i,t-1}} + \beta_2 Q_{i,t-1} + \beta_3 \frac{Sales_{i,t-1}}{K_{i,t-1}} + \varepsilon_{i,t}$$

(2) Impact of the presence of the largest shareholder on the investment-cash flow sensitivity

$$\frac{I_{i,t}}{K_{i,t-1}} = \alpha_{i,t} + \beta_1 \frac{CF_{i,t}}{K_{i,t-1}} + \beta_2 Q_{i,t-1} + \beta_3 \frac{Sales_{i,t-1}}{K_{i,t-1}} + \beta_4 Type_{i,t} + \beta_5 Type_{i,t} * \frac{CF_{i,t}}{K_{i,t-1}} + \varepsilon_{i,t}$$

(3) Impact of ownership levels on the investment-cash flow sensitivity

$$\frac{I_{i,t}}{K_{i,t-1}} = \alpha_{i,t} + \beta_1 \frac{CF_{i,t}}{K_{i,t-1}} + \beta_2 Q_{i,t-1} + \beta_3 \frac{Sales_{i,t-1}}{K_{i,t-1}} + \beta_4 Own_{i,t} * \frac{CF_{i,t}}{K_{i,t-1}} + \beta_5 Own_{i,t}^2 * \frac{CF_{i,t}}{K_{i,t-1}} + \beta_5 Own_{i,t}^3 * \frac{CF_{i,t}}{K_{i,t-1}} + \varepsilon_{i,t}$$

(4) The difference in investment-cash flow sensitivity between low Q and high Q firms

$$\frac{I_{i,t}}{K_{i,t-1}} = \alpha_{i,t} + \beta_1 \frac{CF_{i,t}}{K_{i,t-1}} + \beta_2 Q_{i,t-1} + \beta_3 \frac{Sales_{i,t-1}}{K_{i,t-1}} + \beta_4 LowQ_{i,t} + \beta_5 LowQ_{i,t} * \frac{CF_{i,t}}{K_{i,t-1}} + \beta_6 LowQ_{i,t} * Q_{i,t-1} + \beta_7 LowQ_{i,t} * \frac{Sales_{i,t-1}}{K_{i,t-1}} + \varepsilon_{i,t}$$

where $I_{i,t}$ is investment spending or capital expenditure during the year, $K_{i,t-1}$ is the capital stock (i.e., fixed assets) at the beginning of the year, $CF_{i,t}$ is cash flow or net income plus depreciation and depletion during the year, $Q_{i,t-1}$ is a proxy of lagged Tobin's Q ratio (measured by the ratio of market value of total assets to book value of total assets) at the

beginning of the year, $Sales_{i,t-1}$ is sales in the previous year, $Type_{i,t}$ is a dummy variable indicating type of the largest shareholder, and $Own_{i,t}$ is an ownership percentage of the largest shareholder. $LowQ_{i,t}$ is defined as a dummy variable that is equal to 1 if a value of lagged Tobin's Q ratio is lower than the sample average value of Tobin's Q ratio (by industry and year), and zero otherwise.

Under the alternative hypothesis, the cash flow coefficient is related to investment if internal cash flow is the determinant of firms' investment. In specification (1), I expect a positive sign for the coefficient β_1 supporting the impact of internal funds on firms' investment spending, a positive sign of β_2 as an indicator of the impact of investment opportunities on firms' investment spending, and a positive coefficient of β_3 as the impact of sales accelerator on firms' investment spending.

Cash flow scaled by capital at the beginning of the period, is the main variable of interest to examine the impact of internal cash flow on investment. I expect a positive relationship between investment spending and internal cash flow. The positive sensitivity of investment to cash flow will indicate the dependence of investment on the availability of internal funds or financial constraints on internal funds for investments. A higher internal cash flow during the year may increase the investment spending of firms in that period.

The proxy of lagged Tobin's Q ratio is included to capture investment opportunities or profitability of investments. Without the proxy of lagged Tobin's Q ratio, the cash flow variable may capture expected future profitability. The relationship between the proxy of lagged Tobin's Q ratio and the investment ratio is expected to be positive. The significantly positive coefficient of lagged Tobin's Q ratio will show that firms' investment is determined by investment opportunities at the beginning of the period. Higher investment opportunities at the beginning of the period may lead to an increased investment spending during the year.

The ratio of lagged sales to capital at the beginning of the year is used as a proxy of product demand or sales accelerator. The production level at the end of the previous year indicates the future expectation on investment and profitability. The coefficient of the ratio of lagged sales to capital is expected to be positively related to the investment ratio. A higher sales level at the

beginning of the period may determine the desire for investments during the year. Therefore, the significant coefficient of the cash flow variable after controlling for investment opportunities and sales accelerator will confirm the role of internal cash flow in firms' investment.

All specifications are controlled by year effects between 2006 and 2008 when the military coup and the US financial crisis took place and affected the Thai economy. To investigate the effect of ownership structure on investment-cash flow sensitivity, I will use three econometric estimators. First, I will apply the OLS on pooled cross-section and time-series data, controlling for year effects. Second, I will control for firm-specific effects by using the within-estimator approach (fixed effects regressions). It is important to note that the Hausman test is used to examine the differences in estimators between the random effects and fixed effects. In this research, the Hausman test rejects the null hypothesis that there is zero correlation between the individual effects and other regressors. The hypothesis is rejected to support the inconsistency of the random effect estimators. Thus, the fixed effect estimators are appropriate and are used in all regressions. Finally, I allow for the dynamic nature of the investment equation by including the lagged dependent variable. To account for the endogeneity of the lagged dependent variable, I estimate the investment equation using the GMM, following Arellano & Bond (1991).

In addition, I use a pairwise correlation analysis between variables in the specification of investment-cash flow sensitivity to assess the multicollinearity problem. Table 3.2 shows pairwise correlation coefficients between variables in the specification (1) for the full sample (2,558 firm-year observations) between 2001 and 2008.

Table 3.2: Pairwise correlations

This table reports pairwise correlation coefficients between variables for 2,558 firm-year observations between 2001 and 2008. The asterisk (***) indicates significance at levels of 1%. The figures in parentheses report p-value of each correlation coefficient.

	Investment/ Capital	Cash flow/ Capital	Lagged Tobin's Q	Lagged Sales/ Capital
Investment/Capital	1.000			
Cash flow/Capital	0.394*** (0.000)	1.000		
Lagged Tobin's Q	0.248*** (0.000)	0.244*** (0.000)	1.000	
Lagged Sales/Capital	0.338*** (0.000)	0.549*** (0.000)	0.095*** (0.000)	1.000

In contrast to the concept of irrelevance of financial factors on firms' investment spending, I find significant correlations between the ratio of investment to capital at the beginning of the year (as the dependent variable) and other independent variables, indicating the impact of financial factors on firms' investment behavior. All independent variables are positively related to the ratio of investment and the beginning period capital stock at the 1% significance level. As shown in Table 3.2, none of the correlations exceeds 0.55; therefore multicollinearity is not a problem in this specification.

Chapter 4
Empirical Analyses

This chapter will present the ownership structure of Thai listed firms over a period of 2001 - 2008. The agency theory suggests that large (ultimate) shareholders have incentives to play a monitoring role over management in order to ensure that generated free cash flow will be spent on productive investment projects. Based on the asymmetric information hypothesis, large shareholders could mitigate market imperfections and help firms obtain useful information for investments and an access to external funds. In this chapter, the descriptive statistics of ownership structure and financial characteristics will be presented. I, then, compare financial characteristics of firms based on type of the largest shareholder. The results of empirical investigation will be provided to show the impact of internal cash flow on investment and the impact of ownership structure on the investment-cash flow sensitivity. Whether types of shareholders and ownership levels have an impact on a firm's investment-cash flow sensitivity will be examined. Finally, I will investigate the investment behavior between firms with low investment opportunities and those with high investment opportunities.

4.1 Descriptive statistics of ownership structure

Table 4.1 shows the shareholding of the largest shareholders of Thai listed firms. A majority of firms are family-owned, accounting for 61% of total observations. Foreign investor-owned firms are the second largest group, compared to all sample firms. The proportion of foreign investor-owned firms is 17%. Firms owned by a group of unrelated families are the third largest group with a fraction of almost 9%. About 4% of total observations are owned by the government. The last two groups are foreign institution-owned and domestic financial institution-owned firms, representing 2.23% and 1.64% respectively.

The mean values of the largest shareholders' ownership are in a range of 32% and 48%. The top four groups of the largest shareholders, including family, foreign investor, a group of unrelated families and the government, on average, hold a high ownership percentage, i.e., 44%, 46%, 48% and 46% respectively. Overall, the results in Table 4.1 confirm that concentrated ownership is commonly found in Thailand.

Table 4.1: Ownership percentage of the largest shareholders of Thai listed firms

Types of the largest shareholders	Number of observations	%of total observations	Mean	Median	Standard deviation	Minimum	Maximum
Family	1,552	60.67%	44%	44%	19%	10%	93%
A group of unrelated families	221	8.64%	48%	46%	20%	13%	96%
The government	103	4.03%	46%	49%	19%	17%	93%
Domestic financial institution	42	1.64%	32%	30%	14%	12%	58%
Foreign investor	436	17.04%	46%	44%	18%	10%	99%
Foreign institution	57	2.23%	39%	35%	21%	11%	84%

4.2 Descriptive statistics of firm characteristics

The descriptive statistics of the data is shown in Table 4.2. In this sample, the mean value of investment relative to capital is 0.19 and the average cash flow amounts to 0.42 of capital. On average, the lagged Tobin's Q is 1.14 and the ratio of lagged sales to capital is 4.42. The total assets and sales are 7,654 and 5,768 million baht, respectively. The ratio of property, plant and equipment to total assets is 0.39. The long-term debt and total liabilities account for 0.31 and 0.44 of total assets. The ratios of net profit margin and return on assets are 6% and 8% respectively.

Table 4.2: Financial characteristics of Thai listed firms

This table reports summary statistics of the financial characteristics of the firm-year observations. The unit of measurement of variables other than ratios is million baht.

	Mean	Median	Standard deviation	Minimum	Maximum
Investment model variables					
Investment/capital	0.19	0.13	0.19	0.01	0.73
Cash flow/capital	0.42	0.27	0.53	-0.24	2.10
Lagged Tobin's Q	1.14	1.00	0.49	0.53	2.40
Lagged sales/capital	4.42	2.37	5.13	0.33	20.26
Other variables					
Ln(total assets)	8.08	7.85	1.27	6.26	10.74
Total assets	7,654	2,559	11,781	522	46,156
Sales	5,768	2,333	8,597	239	34,243
Total property, plant and equipment/total assets	0.39	0.39	0.23	0.04	0.80
Long-term debt/total assets	0.31	0.29	0.18	0.06	0.69
Total liabilities/total assets	0.44	0.45	0.22	0.09	0.86
Net profit margin	0.06	0.06	0.13	-0.27	0.32
Return on assets	0.08	0.08	0.08	-0.09	0.22

4.3 Firm characteristics by type of shareholder

Table 4.3 reports mean values of financial characteristics in different groups of the largest shareholders. Investment model variables are shown in Panel A. In Panel B and C, proxies of firm size, capital structure and profitability are presented. The ANOVA analysis shows that all financial characteristics of firms owned by six groups of shareholders are significantly different.

In term of investment spending and availability of internal cash flow, foreign institution-owned firms have the highest investment relative to capital and cash flow relative to capital, followed by firms owned by family and foreign investor. The government-owned firms have the highest investment opportunity, measured by a ratio of Tobin's Q, followed by domestic financial institution-owned firms. Foreign institution-owned firms have the highest ratio of lagged sales to capital. Family-owned and domestic financial institution-owned firms are the second and third group with the highest lagged sales relative to capital, while the government-owned firms have the lowest ratio of lagged sales to capital.

The results in Panel B show that the government-owned firms are the largest group by all measures of firm size. Using the log of total assets and values of total assets and sales, firms owned by foreign institution are the second largest group and firms owned by domestic financial institution are the smallest group in the sample. However, the foreign institution-owned firms have the lowest ratio of total property, plant and equipment to total assets.

Panel 3 also shows that the government-owned firms are highly leveraged as indicated by the highest ratios of long-term debt to total assets and total liabilities to total assets. The second highest levered group is firms owned by domestic financial institution, followed by foreign institution-owned and family-owned firms. In addition, the government-owned firms generate high profits and show the highest net profit margin and return on assets, followed by firms owned by a group of unrelated families and by domestic financial institution. The foreign institution-owned firms have the lowest profitability.

Table 4.3: Differences in financial characteristics by type of the largest shareholder

This table reports mean values of financial characteristics by the largest shareholder's types. It also presents ANOVA analysis, which is used to compare financial characteristics in different types of the largest shareholders. The unit of measurement of variables other than ratios is million baht.

Panel A: Investment model variables

Types of the largest shareholders	No. of observations	Investment/ capital	Cash flow/capital	Lagged Tobin's Q	Lagged sales/capital
Family	1,552	0.20	0.44	1.14	4.63
A group of unrelated families	221	0.16	0.36	1.11	3.89
The government	103	0.17	0.26	1.31	1.56
Domestic financial institution	42	0.17	0.37	1.18	4.61
Foreign investor	436	0.20	0.38	1.15	4.18
Foreign institution	57	0.24	0.57	1.17	6.38
p value		0.03	0.00	0.00	0.00

Panel B: Firm size

Types of the largest shareholders	No. of observations	Ln(total assets)	Total assets	Sales	Total property, plant and equipment /total assets
Family	1,552	7.92	6,525	4,765	0.37
A group of unrelated families	221	8.07	6,355	5,016	0.47
The government	103	9.75	30,457	19,781	0.56
Domestic financial institution	42	7.50	2,952	2,751	0.42
Foreign investor	436	8.21	6,762	6,325	0.40
Foreign institution	57	8.79	12,662	10,022	0.29
p value		0.00	0.00	0.00	0.00

Panel C: Capital structure and profitability

Types of the largest shareholders	No. of observations	Long-term debt/total assets	Total liabilities /total assets	Net profit margin	Return on assets
Family	1,552	0.30	0.44	0.06	0.08
A group of unrelated families	221	0.30	0.42	0.09	0.09
The government	103	0.41	0.48	0.15	0.11
Domestic financial institution	42	0.38	0.47	0.09	0.08
Foreign investor	436	0.30	0.42	0.06	0.08
Foreign institution	57	0.36	0.44	0.05	0.07
p value		0.00	0.00	0.00	0.00

4.4 Investment-cash flow sensitivity

Whether or not the cash flow is a determinant of a firm's investment is shown in Table 4.4. Using three econometrics estimators, the results of OLS, FE and GMM are consistent and confirm that the investment of Thai listed firms is significantly sensitive to internal cash flow. The investment decision of firms is dependent on the availability of internal cash flow. The coefficients of cash flow, lagged Tobin's Q and lagged sales to capital are significantly positive, indicating the association between investment and financial factors. Apart from the significant relationship between lagged Tobin's Q and investment in the GMM regression at 10%, all other coefficients are positively related to investment at 1% significance level using three estimators. I can conclude that the results in Table 4.4 support hypothesis H1.

Table 4.4: The impact of cash flow on a firm's investment

This table reports the results of the pooled OLS, FE and GMM regressions. The dependent variable is the investment scaled by capital at the beginning of the year. Cash flow is net income plus depreciation and depletion during the year. Capital is property, plant and equipment at the beginning of the period. Proxy of lagged Tobin's Q is the ratio of market value of assets to book value of assets at the beginning of the period. Lagged sales is total sales at the beginning of the period. The regression controls for year effects. The statistical significance at levels of 1% (***), 5% (**) and 10% (*) is reported. The figures in parentheses report p-value for two-tailed tests.

	OLS		FE		GMM	
constant	0.053	***	0.066	***	-0.021	
	(0.000)		(0.000)		(0.360)	
Cash flow/capital	0.089	***	0.082	***	0.093	***
	(0.000)		(0.000)		(0.000)	
Lagged Tobin's Q	0.067	***	0.036	***	0.029	*
	(0.000)		(0.000)		(0.055)	
Lagged sales/capital	0.007	***	0.014	***	0.023	***
	(0.000)		(0.000)		(0.000)	
Lagged (investment/capital)					0.256	***
					(0.000)	
No. of observations	2,558		2,558		1,727	
Adjusted R^2	0.205	R^2 within	0.121	Wald (χ^2)	308.27	
		R^2 between	0.304			
		R^2 overall	0.187			

4.5 Impact of ownership structure on investment-cash flow sensitivity

Table 4.5 shows the impact of the largest shareholders on investment and cash flow sensitivity. The six groups of the largest shareholders are family (Panel A), a group of unrelated families (Panel B), the government (Panel C), domestic financial institution (Panel D), foreign investor (Panel E), and foreign institution (Panel F).

Table 4.5: The impact of the presence of the largest shareholder on investment-cash flow sensitivity

This table reports the results of the pooled OLS, FE and GMM regressions. The dependent variable is the investment scaled by capital at the beginning of the year. Cash flow is net income plus depreciation and depletion during the year. Capital is property, plant and equipment at the beginning of the period. Proxy of lagged Tobin's Q is the ratio of market value of assets to book value of assets at the beginning of the period. Lagged sales is total sales at the beginning of the period. The largest shareholder is categorized into six groups, including family, a group of unrelated families, the government, domestic financial institution, foreign investor, and foreign institution. The presence of the largest shareholder is defined as a dummy variable that equal 1 if a firm is owned by one of the six types of shareholders, and zero otherwise. The regression controls for year effects. Total observations of the pooled OLS and FE regression are 2,558 and those of the GMM regression are 1,726. The statistical significance at levels of 1% (***), 5% (**) and 10% (*) is reported. The figures in parentheses report p-value for two-tailed tests.

Panel A: Family

	OLS		FE		GMM	
constant	0.045	***	0.033	**	-0.025	
	(0.000)		(0.039)		(0.357)	
Cash flow/capital	0.106	***	0.116	***	0.142	***
	(0.000)		(0.000)		(0.000)	
Lagged Tobin's Q	0.068	***	0.033	***	0.029	*
	(0.000)		(0.001)		(0.055)	
Lagged sales/capital	0.007	***	0.015	***	0.023	***
	(0.000)		(0.000)		(0.000)	
Family	0.013		0.060	***	0.013	
	(0.149)		(0.000)		(0.616)	
Family x (cash flow/capital)	-0.027	**	-0.054	***	-0.079	***
	(0.049)		(0.003)		(0.004)	
Lagged (investment/capital)					0.256	***
					(0.000)	
Adjusted R^2	0.206	R^2 within	0.128	Wald (χ^2)	315.98	
		R^2 between	0.285			
		R^2 overall	0.181			

Panel B: A group of unrelated families

	OLS		FE		GMM	
constant	0.055	***	0.067	***	-0.020	
	(0.000)		(0.000)		(0.406)	
Cash flow/capital	0.088	***	0.078	***	0.087	***
	(0.000)		(0.000)		(0.000)	
Lagged Tobin's Q	0.067	***	0.036	***	0.030	**
	(0.000)		(0.000)		(0.047)	
Lagged sales/capital	0.007	***	0.014	***	0.023	***
	(0.000)		(0.000)		(0.000)	
A group of unrelated families	-0.024		-0.007		-0.008	
	(0.106)		(0.848)		(0.900)	
A group of unrelated families x (cash flow/capital)	0.019		0.050		0.058	
	(0.444)		(0.135)		(0.276)	
Lagged (investment/capital)					0.255	***
					(0.000)	
Adjusted R^2	0.205	R^2 within	0.122	Wald (χ^2)	309.88	
		R^2 between	0.301			
		R^2 overall	0.186			

Panel C: The government

	OLS		FE		GMM	
constant	0.054	***	0.070	***	-0.024	
	(0.000)		(0.000)		(0.295)	
Cash flow/capital	0.088	***	0.080	***	0.093	***
	(0.000)		(0.000)		(0.000)	
Lagged Tobin's Q	0.066	***	0.035	***	0.029	*
	(0.000)		(0.000)		(0.054)	
Lagged sales/capital	0.007	***	0.015	***	0.023	***
	(0.000)		(0.000)		(0.000)	
The government	-0.040		-0.089		0.073	
	(0.122)		(0.132)		(0.473)	
The government x (cash flow/capital)	0.149	**	0.145	*	-0.004	
	(0.039)		(0.097)		(0.972)	
Lagged (investment/capital)					0.257	***
					(0.000)	
Adjusted R^2	0.206	R^2 within	0.123	Wald (χ^2)	308.02	
		R^2 between	0.297			
		R^2 overall	0.185			

Panel D: Domestic financial institution

	OLS		FE		GMM	
constant	0.052	***	0.067	***	-0.019	
	(0.000)		(0.000)		(0.408)	
Cash flow/capital	0.091	***	0.084	***	0.092	***
	(0.000)		(0.000)		(0.000)	
Lagged Tobin's Q	0.068	***	0.037	***	0.029	*
	(0.000)		(0.000)		(0.058)	
Lagged sales/capital	0.007	***	0.014	***	0.023	***
	(0.000)		(0.000)		(0.000)	
Domestic financial institution	0.022		-0.041		-0.057	
	(0.496)		(0.395)		(0.510)	
Domestic financial institution x (cash flow/capital)	-0.138	***	-0.124	**	0.020	
	(0.010)		(0.036)		(0.829)	
Lagged (investment/capital)					0.255	***
					(0.000)	
Adjusted R^2	0.207	R^2 within	0.125	Wald (χ^2)	308.57	
		R^2 between	0.306			
		R^2 overall	0.189			

Panel E: Foreign investor

	OLS		FE		GMM	
constant	0.053	***	0.071	***	-0.021	
	(0.000)		(0.000)		(0.378)	
Cash flow/capital	0.084	***	0.077	***	0.080	***
	(0.000)		(0.000)		(0.000)	
Lagged Tobin's Q	0.067	***	0.035	***	0.030	**
	(0.000)		(0.000)		(0.045)	
Lagged sales/capital	0.007	***	0.014	***	0.023	***
	(0.000)		(0.000)		(0.000)	
Foreign investor	-0.003		-0.024		-0.029	
	(0.785)		(0.313)		(0.424)	
Foreign investor x (cash flow/capital)	0.043	**	0.045		0.133	***
	(0.022)		(0.121)		(0.003)	
Lagged (investment/capital)					0.260	***
					(0.000)	
Adjusted R^2	0.207	R^2 within	0.122	Wald (χ^2)	318.00	
		R^2 between	0.302			
		R^2 overall	0.187			

Panel F: Foreign institution

	OLS		FE		GMM	
constant	0.053	***	0.068	***	-0.017	
	(0.000)		(0.000)		(0.463)	
Cash flow/capital	0.087	***	0.079	***	0.087	***
	(0.000)		(0.000)		(0.000)	
Lagged Tobin's Q	0.067	***	0.036	***	0.028	*
	(0.000)		(0.000)		(0.059)	
Lagged sales/capital	0.007	***	0.015	***	0.023	***
	(0.000)		(0.000)		(0.000)	
Foreign institution	-0.001		-0.085	**	0.041	
	(0.966)		(0.012)		(0.415)	
Foreign institution x (cash flow/capital)	0.043		0.088	**	0.088	*
	(0.224)		(0.015)		(0.072)	
Lagged (investment/capital)					0.260	***
					(0.000)	
Adjusted R^2	0.205	R^2 within	0.125	Wald (χ^2)	313.06	
		R^2 between	0.299			
		R^2 overall	0.186			

The results in Panel A – F confirm the positive relationship between investment and internal cash flow at 1% significance level using all three estimators. In Panel A, the results show that family shareholders have an impact on a firm's investment policy. The presence of family owners is negatively related to investment-cash flow sensitivity in OLS, FE and GMM regressions. The coefficients of the interactive term between family dummy and cash flow variable are negatively significant at 5% (OLS) and 1% levels (FE and GMM). These findings support hypothesis H2 and are consistent with Andres (2011) and Pindado et al. (2011).

Panel B shows that a group of unrelated families does not have an influence on firms' investment policy. The results reject hypothesis H2. In Panel C, I find that the investment of firms owned by the government is positively related to internal cash flow. The coefficients of the interactive term between the government dummy and cash flow variable are positively significant at 5% and 10% levels in OLS and FE regressions respectively. Therefore, the findings in Panel C reject hypothesis H2 and is inconsistent with the results of Pawlina et al. (2005).

In addition, Panel D shows that the coefficients of the interactive term between domestic financial institution dummy and cash flow variable are negatively significant at 1% and 5% levels in OLS and FE regressions respectively. The investment of domestic financial institution-owned firms is less sensitive to internal cash flow. This supports hypothesis H2 and is in line with the results of Pawlina et al. (2005).

In Panel E, I find that the presence of foreign investor increases the investment-cash flow sensitivity. The impact of foreign investor on firms' investment-cash flow sensitivity is significantly positive at 5% and 1% levels in OLS and GMM regressions respectively. However, these results reject hypothesis H2. Similarly, the findings in Panel F demonstrate that the investment of firms owned by foreign institution is positively associated with internal cash flow at the significance levels of 5% and 10% in FE and GMM regressions respectively. This, therefore, rejects hypothesis H2.

4.6 Impact of ownership levels on investment-cash flow sensitivity

Table 4.6 reports the impact of family ownership levels on investment-cash flow sensitivity. I find that the investment-cash flow sensitivity remains consistent with previous findings in Table 4.4 and 4.5. The results of GMM regression show that the relationship between family ownership and investment-cash flow sensitivity is non-monotonic (S-shaped), supporting the interest alignment between managers and shareholders and managerial entrenchment. The investment-cash flow sensitivity reduces at low levels of family ownership as indicated by the negative coefficient of the interactive term between family ownership levels and cash flow variable. The sensitivity of investment and cash flow becomes higher when family ownership levels increase as shown by the quadratic form of the model for family ownership. The positive coefficient of quadratic term indicates the potential expropriation effects at the moderate to high levels of family ownership. Interacting the cash flow variable with the cubic term of family ownership generates a significant effect on investment. The investment-cash flow sensitivity starts to decrease when family ownership becomes considerably high. All interactive terms between family ownership levels and cash flow variable are significantly related to investment at 1% significance levels. The findings supports hypothesis H3, H4 and H5, and are in line with (McConnell et al., 1990; Morck et al., 1988; Pawlina et al., 2005).

I do not report the tables, showing the impact of ownership levels by other types of owners on investment-cash flow sensitivity, because I find insignificant results of all interactive terms between ownership levels and cash flow variable.

Table 4.6: The impact of ownership levels on investment-cash flow sensitivity

This table reports the results of the pooled OLS, FE and GMM regressions. The dependent variable is the investment scaled by capital at the beginning of the year. Cash flow is net income plus depreciation and depletion during the year. Capital is property, plant and equipment at the beginning of the period. Proxy of lagged Tobin's Q is the ratio of market value of assets to book value of assets at the beginning of the period. Lagged sales is total sales at the beginning of the period. Family ownership is a percentage of shareholding held by family. The regression controls for year effects. Total observations of the pooled OLS and FE regression are 2,558 and those of the GMM regression are 1,726. The statistical significance at levels of 1% (***), 5% (**) and 10% (*) is reported. The figures in parentheses report p-value for two-tailed tests.

	OLS		FE		GMM	
constant	0.053	***	0.067	***	-0.022	
	(0.000)		(0.000)		(0.327)	
Cash flow/capital	0.096	***	0.093	***	0.128	***
	(0.000)		(0.000)		(0.000)	
Lagged Tobin's Q	0.067	***	0.035	***	0.029	*
	(0.000)		(0.000)		(0.052)	
Lagged sales/capital	0.007	***	0.014	***	0.024	***
	(0.000)		(0.000)		(0.000)	
Family ownership x (Cash flow/capital)	-0.129		-0.153		-1.067	***
	(0.339)		(0.455)		(0.001)	
Family ownership^2 x (Cash flow/capital)	0.258		0.300		3.451	***
	(0.589)		(0.680)		(0.002)	
Family ownership^3 x (Cash flow/capital)	-0.066		-0.134		-2.741	***
	(0.878)		(0.835)		(0.006)	
Lagged (investment/capital)					0.258	***
					(0.000)	
Adjusted R^2	0.205	R^2 within	0.122	Wald (χ^2)	317.64	
		R^2 between	0.302			
		R^2 overall	0.187			

4.7 Overinvestment behavior

The results in Table 4.7 show the investment-cash flow sensitivity of low Q firms (Panel A) and of high Q firms (Panel B). I investigate whether the investment-cash flow sensitivity of low Q firms is higher than that of high Q firms as an indicator of potential overinvestment problems.

Table 4.7: The investment-cash flow sensitivity between low Q and high Q firms

This table reports the results of the pooled OLS, FE and GMM regressions. The dependent variable is the investment scaled by capital at the beginning of the year. Cash flow is net income plus depreciation and depletion during the year. Capital is property, plant and equipment at the beginning of the period. Proxy of lagged Tobin's Q is the ratio of market value of assets to book value of assets at the beginning of the period. Lagged sales is total sales at the beginning of the period. The statistical significance at levels of 1% (***), 5% (**) and 10% (*) is reported. The figures in parentheses report p-value for two-tailed tests.

Panel A: Low Q firms

	OLS		FE		GMM	
constant	0.030	*	0.021		0.038	
	(0.088)		(0.354)		(0.156)	
Cash flow/capital	0.091	***	0.076	***	0.057	***
	(0.000)		(0.000)		(0.005)	
Lagged Tobin's Q	0.090	***	0.074	***	-0.004	
	(0.000)		(0.002)		(0.869)	
Lagged sales/capital	0.009	***	0.016	***	0.021	***
	(0.000)		(0.000)		(0.000)	
Lagged (investment/capital)					0.200	***
					(0.000)	
No. of observations	1,524		1,524		1,074	
Adjusted R^2	0.207	R^2 within	0.122	Wald (χ^2)	128.82	
		R^2 between	0.338			
		R^2 overall	0.201			

Panel B: High Q firms

	OLS		FE		GMM	
constant	0.051	**	0.044		-0.102	**
	(0.011)		(0.140)		(0.024)	
Cash flow/capital	0.090	***	0.103	***	0.134	***
	(0.000)		(0.000)		(0.000)	
Lagged Tobin's Q	0.072	***	0.053	***	0.049	**
	(0.000)		(0.002)		(0.013)	
Lagged sales/capital	0.004	***	0.013	***	0.031	***
	(0.001)		(0.000)		(0.000)	
Lagged (investment/capital)					0.271	***
					(0.000)	
No. of observations	1,034		1,034		653	
Adjusted R^2	0.165	R^2 within	0.124	Wald (χ^2)	135.17	
		R^2 between	0.125			
		R^2 overall	0.151			

I find that the investment of low Q firms is positively related to cash flow at 1% significance levels for all three estimators. The investment and cash flow sensitivity of high Q firms shows

similar results. I compare the coefficients of cash flow variable between low Q and high Q firms and find that the results support the null hypothesis that there is no difference in cash flow coefficients between low Q and high Q firms. Therefore, the findings reject hypothesis H6 and confirm that there is no evidence of potential overinvestment problems of Thai listed firms over a period of 2001 - 2008.

Chapter 5
Conclusions and Suggestions

Using the data of non-financial listed firms in Thailand, we investigate the ownership structure, the impact of ownership structure on the investment-cash flow sensitivity and the overinvestment behavior from 2001 to 2008. This chapter concludes the empirical findings and provides implications and suggestions for future research.

5.1 Conclusions

The results show that Thai listed firms are mostly family-owned firms. For non-family firms, foreign investor and a group of unrelated families are dominant groups of owners. The percentage of shareholdings of Thai listed firms is highly concentrated and the average ownership of the largest shareholders varies between 32% and 48%. Financial characteristics by the largest shareholder's type are significantly different. The ratios of investment to capital, cash flow to capital and lagged sales to capital of foreign institution-owned firms are the highest values. The government-owned firms have the highest lagged Tobin's Q ratio and the largest firm size. They also have the highest leverage ratios, net profit margin and return on assets.

I find that the investment of Thai listed firms is sensitive to internal cash flow in all regressions. The ownership structure has an impact on firm's investment-cash flow sensitivity. The existence of family and domestic financial institution as the largest shareholder reduces the investment-cash flow sensitivity. In addition, the results show that the investment of the government-owned firms is more sensitive to internal cash flow. The investment-cash flow sensitivity is also higher in firms owned by foreign investor and foreign institution. Using the GMM estimator, I find the S-shaped relation between family ownership levels and the investment-cash flow sensitivity, confirming the interest alignment and entrenchment hypotheses of large shareholders. Furthermore, the findings show that the investment and cash flow sensitivity of low Q firms is not different than that of high Q firms. The results support that Thai listed firms do not overinvest after the 1997 financial crisis.

5.2 Suggestions

The findings could be explained by the free cash flow and asymmetric information hypotheses. The agency costs of free cash flow problems are more evident in family-owned and the government-owned firms. Although family owners could reduce the investment-cash flow sensitivity, entrenchment problems could possibly be found when ownership levels increase. Therefore, long-term commitment and sufficiently high shareholding of family owners could bring about increased interest alignment and generate lower agency costs of free cash flow. Relevant regulators should encourage minority shareholders to actively monitor management or to participate in shareholders' meetings to prevent entrenchment and potential overinvestment problems of family-owned firms.

In emerging countries, political connections are documented to help mitigate asymmetric information problems in capital markets. The government-owned firms are considered as politically connected firms. Also, the findings show that the government-owned firms have the highest values of leverage ratios. It is most likely that they have low asymmetric information problems in the capital markets. The positive association between investment and internal cash flow in the government-owned firms, therefore, reflects higher agency costs of free cash flow. Because the government-owned firms also have high investment opportunities, indicated by the highest Tobin's Q ratio, compared to all sample firms, active monitoring by the public and by independent board of directors and increased transparency will be essential to reduce agency costs. As a result of stakeholder activism, the investment of government-owned firms could bring about higher benefits to the society.

The asymmetric information problems are more pronounced in firms owned by domestic financial institution, foreign investor and foreign institution. The findings show that domestic financial institution-owned firms are ranked as the second highest leveraged firms, compared to all sample firms. The presence of domestic financial institution generates lower investment-cash flow sensitivity. Therefore, the role of domestic financial institution in alleviating information asymmetries and helping firms access to external funds is emphasized in this research. It is important for firms to be connected or to have close relationships with financial institutions in emerging markets (Espenlaub et al., 2012; Shen et al., 2005).

Foreign investor-owned and foreign institution-owned firms are likely to have less information and face higher information asymmetric problems, compared to domestic firms. It is possible that underinvestment problems are more pronounced as indicated by the higher investment and cash flow sensitivity. However, foreign investor and institution are found to have effective monitoring capabilities, high commitment and long term involvement (Douma et al., 2006; Filatotchev et al., 2011). Thai authorities should stimulate the participation of foreign investor and institution and provide them useful information for their investment decisions.

Suggestions for future research are as follows. In this research, I use a cut-off point of 10% shareholding to define a large shareholder. Defining a controlling shareholder as one with more than 25% shareholding is possible for future research; however the number of observations by type of owner will decrease and may have an effect on investment-cash flow sensitivity. Furthermore, additional research questions could be asked by discussing about which conditions the investment-cash flow sensitivity is strengthened or weakened, possibly leading to a series of moderating hypotheses to support either the agency costs of free cash flow or information asymmetry. In addition, other corporate governance mechanisms could be related to investment-cash flow sensitivity. For example, possible research questions are what kind of boards of directors could effectively monitor managers in order to reduce firms' investment-cash flow sensitivity in firms owned by the government and what characteristics of CEOs could decrease agency costs and lead to lower investment-cash flow sensitivity. Whether the second largest shareholders in family-owned firms affect the investment-cash flow sensitivity could also be examined to show their role in investment decision making. They could play either the monitoring role or colluding role with the family owners.

References

Anderson, R. C., Mansi, S. A., & Reeb, D. M. 2003. Founding family ownership and the agency cost of debt. ***Journal of Financial Economics***, 68(2): 263-285.

Anderson, R. C., & Reeb, D. M. 2003. Founding-family ownership and firm performance: Evidence from the S&P 500. ***Journal of Finance***, 58(3): 1301-1328.

Andres, C. 2011. Family ownership, financing constraints and investment decisions. ***Applied Financial Economics***, 21(22): 1641-1659.

Arellano, M., & Bond, S. 1991. Some tests of specification for panel data: Monte Carlo evidence and an application to employment equations. ***Review of Economic Studies***, 58(2): 277-297.

Backman, M. 1999. ***Asian eclipse: Exposing the dark side of business in Asia***. New York: John Wiley & Sons.

Bae, K. H., Kang, J. K., & Kim, J. M. 2002. Tunneling or value added? Evidence from mergers by Korean business groups. ***Journal of Finance***, 57(6): 2695-2740.

Biggart, N. 1997. Explaining Asian Economic Organization. In M. Orru, N. W. Biggart, & G. Hamilton (Eds.), ***The Economic Organization of East Asian Capitalism***. California: Sage.

Chan, K. S., Dang, V. Q. T., & Yan, I. K. M. 2012. Chinese firms' political connection, ownership, and financing constraints. ***Economics Letters***, 115(2): 164-167.

Claessens, S., Djankov, S., Fan, J. P. H., & Lang, L. H. P. 2002. Disentangling the Incentive and Entrenchment Effects of Large Shareholdings. ***Journal of Finance***, 57(6): 2741-2771.

Claessens, S., Djankov, S., & Lang, L. H. P. 2000. The separation of ownership and control in East Asian corporations. ***Journal of Financial Economics***, 58(1-2): 81-112.

Crespi, F., & Scellato, G. 2007. Ownership structure, financial constraints and investment decisions: Evidence from a panel of Italian firms. ***Working paper, SSRN: http://ssrn.com/abstract=987996 or http://dx.doi.org/10.2139/ssrn.987996***.

DeAngelo, H., & DeAngelo, L. 2000. Controlling stockholders and the disciplinary role of corporate payout policy: a study of the Times Mirror Company. ***Journal of Financial Economics***, 56: 153-207.

Devereux, M., & Schiantarelli, F. 1990. Investment, financial factors, and cash flow: Evidence from UK panel data. In R. G. Hubbard (Ed.), ***Asymmetric information, corporate finance, and investment***: University of Chicago Press.

Dinc, I. S. 2005. Politicians and banks: Political influences on government-owned banks in emerging markets. ***Journal of Financial Economics***, 77(2): 453-479.

Douma, S., George, R., & Kabir, R. 2006. Foreign and domestic ownership, business groups, and firm performance: evidence from a large emerging market. ***Strategic Management Journal***, 27(7): 637-657.

Durnev, A., & Kim, E. H. 2005. To steal or not to steal: Firm attributes, legal environment, and valuation. ***Journal of Finance***, 60(3): 1461-1493.

Espenlaub, S., Khurshed, A., & Sitthipongpanich, T. 2012. Bank connections, corporate investment and crisis. ***Journal of Banking and Finance***, 36(5): 1336-1353.

Faccio, M., & Lang, L. 2002. The ultimate ownership of Western European corporations. ***Journal of Financial Economics***, 65(3): 365-395.

Faccio, M., Lang, L. H. P., & Young, L. 2001. Dividends and expropriation. ***American Economic Review***, 91(1): 54-78.

Faccio, M., Lang, L. H. P., & Young, L. 2003. Debt and Expropriation. ***Working Paper, SSRN***.

Fan, J. P. H., Wei, K. C. J., & Xu, X. 2011. Corporate finance and governance in emerging markets: A selective review and an agenda for future research. ***Journal of Corporate Finance***, 17(2): 207-214.

Fan, J. P. H., & Wong, T. J. 2002. Corporate ownership structure and the informativeness of accounting earnings in East Asia. ***Journal of Accounting and Economics***, 33: 401-425.

Fazzari, S. M., Hubbard, R. G., & Petersen, B. C. 1988. Financing Constraints and Corporate Investment. ***Brookings Papers on Economic Activity***, 1(1): 141– 195.

Ferreira, M. A., & Matos, P. 2008. The colors of investors' money: The role of institutional investors around the world. ***Journal of Financial Economics***, 88(3): 499-533.

Filatotchev, I., & Wright, M. 2011. Agency perspectives on corporate governance of multinational enterprises. ***Journal of Management Studies***, 48(2): 471-486.

Goergen, M., & Renneboog, L. 2001. Investment policy, internal financing and ownership concentration in the UK. ***Journal of Corporate Finance***, 7(3): 257-284.

Gugler, K. 2003. Corporate governance and investment. ***International Journal of the Economics of Business***, 10(3): 261-289.

Hadlock, C. J. 1998. Ownership, liquidity, and investment. ***The Rand Journal of Economics***, 29(3): 487-508.

Hamilton, G. G., & Biggart, N. W. 1988. Market, Culture, and Authority: A Comparative Analysis of Management and Organization in the Far East. ***American Journal of Sociology***, 94,(Supplement: Organizations and Institutions: Sociological and Economic Approaches to the Analysis of Social Structure): 52-94.

Hamilton, G. G., Zeile, W., & Kim, W. J. 1990. The Network Structures of East Asian Economies. In S. Clegg, S. G. Redding, & M. Cartner (Eds.), ***Capitalism in Contrasting Cultures***. Berlin: Walter de Gruyter.

Jensen, M. C. 1986. Agency costs of free cash flow, corporate finance, and takeovers. ***American Economic Review***, 76(2): 323-329.

Jensen, M. C., & Meckling, W. H. 1976. Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure. ***Journal of Financial Economics***, 3(4): 305-360.

Jensen, M. C., & Meckling, W. H. 1978. Can the corporation survive? ***Financial Analysts Journal***, 31(1): 31-37.

Joh, S. W. 2003. Corporate governance and firm profitability: evidence from Korea before the economic crisis. ***Journal of Financial Economics***, 68(2): 287-322.

Johnson, S., Boone, P., Breach, A., & Friedman, E. 2000. Corporate governance in the Asian financial crisis. ***Journal of Financial Economics***, 58: 141-186.

Johnson, S., La Porta, R., Lopez de Silanes, F., & Shleifer, A. 2000. Tunneling. ***American Economic Review***, 90(2): 22-27.

Kang, J., & Kim, J. 2010. Do foreign investors exhibit a corporate governance disadvantage? An information asymmetry perspective. ***Journal of International Business Studies***, 41: 1415-1438.

Khanna, T. 2000. Business groups and social welfare in emerging markets: Existing evidence and unanswered questions. ***European Economic Review***, 44(4-6): 748-761.

Khanthavit, A., Polsiri, P., & Wiwattanakantang, Y. 2003. Did families lose or gain control? Thai firms after the East Asian financial crisis. In J. P. H. Fan, H. Masaharu, & T. Juro (Eds.), ***Designing Financial Systems in East Asia and Japan: Toward a Twenty-First Century Paradigm***: 247-272. New York: Routledge.

Kuh, E., & Meyer, J. R. 1959. ***The Investment Decision: An Empirical Study***. Cambridge, Massachusetts: Harvard University Press.

La Porta, R., Lopez de Silanes, F., & Shleifer, A. 1999. Corporate ownership around the world. ***Journal of Finance***, 54(2): 471-517.

Leland, H. E., & Pyle, D. H. 1977. Informational asymmetries, financial structure, and financial intermediation. ***Journal of Finance***, 32(2): 371-387.

Lemmon, M. L., & Lins, K. V. 2003. Ownership structure, crporate governance, and firm value: Evidence from the East Asian financial crisis. ***Journal of Finance***, 58(4): 1445-1468.

Leuz, C., & Oberholzer Gee, F. 2006. Political relationships, global financing, and corporate transparency: Evidence from Indonesia. ***Journal of Financial Economics***, 81(2): 411-439.

Lins, K. V. 2003. Equity ownership and firm value in emerging markets. ***Journal of Financial and Quantitative Analysis***, 38(1): 159-184.

McConnell, J. J., & Servaes, H. 1990. Additional evidence on equity ownership and corporate value. ***Journal of Financial Economics***, 27(2): 595.

Modigliani, F., & Miller, M. H. 1958. The Cost of capital, corporation finance and the theory of investment. ***American Economic Review***, 48(3): 261-297.

Morck, R., Shleifer, A., & Vishny, R. W. 1988. Management ownership and market valuation: An empirical analysis. ***Journal of Financial Economics***, 20: 293-315.

Myers, S. C., & Majluf, N. S. 1984. Corporate financing and investment decisions when firms have information that investors do not have. ***Journal of Financial Economics***, 13(2): 187-221.

Paulson, A. L., & Townsend, R. 2004. Entrepreneurship and financial constraints in Thailand. ***Journal of Corporate Finance***, 10(2): 229-262.

Pawlina, G., & Renneboog, L. 2005. Is investment-cash flow sensitivity caused by agency costs or asymmetric information? Evidence from the UK. ***European Financial Management***, 11(4): 483-513.

Pindado, J., Requejo, I., & de la Torre, C. 2011. Family control and investment-cash flow sensitivity: Empirical evidence from the Euro zone. ***Journal of Corporate Finance***, 17(5): 1389-1409.

Polsiri, P., & Wiwattanakantang, Y. 2006. Thai Business Groups: Crisis and Restructuring. In C. S-J (Ed.), ***Business Groups in East Asia: Financial Crisis, Restructuring, and New Growth***. Oxford: Oxford University Press.

Pomerleano, M. 1998. The East Asia crisis and corporate finances: The untold microeconomic story. ***Emerging Markets Quarterly***, 2(4): 14-27.

Shen, C. H., & Wang, C. A. 2005. Does bank relationship matter for a firm's investment and financial constraints? The case of Taiwan. ***Pacific-Basin Finance Journal***, 13(2): 163-184.

Shleifer, A., & Vishny, R. 1997. A Survey of corporate governance. ***Journal of Finance***, 52(2): 737-783.

Shleifer, A., & Vishny, R. W. 1986. Large shareholders and corporate control. ***Journal of Political Economy***, 94(3): 461-488.

Siegel, J. 2005. Contingent political capital and international alliances: Evidence from South Korea. ***Administrative Science Quarterly***, 52(4): 621 - 666.

Sitthipongpanich, T. 2012. Bank connections in Thailand: Benefit or cost? ***NIDA Development Journal***, 52(4): 19-38.

Villalonga, B., & Amit, R. 2006. How do family ownership, control and management affect firm value? ***Journal of Financial Economics***, 80(2): 385-417.

Volpin, P. F. 2002. Governance with poor investor protection: evidence from top executive turnover in Italy. ***Journal of Financial Economics***, 64(1): 61-90.

Wei, K. C. J., & Zhang, Y. 2008. Ownership structure, cash flow, and capital investment: Evidence from East Asian economies before the financial crisis. ***Journal of Corporate Finance***, 14(2): 118-132.

Wiwattanakantang, Y. 1999. An empirical study on the determinants of the capital structure of Thai firms. ***Pacific Basin Finance Journal***, 7(3-4): 371-403.

Wiwattanakantang, Y. 2001. Controlling shareholders and corporate value: Evidence from Thailand. ***Pacific Basin Finance Journal***, 9(4): 323-362.