

**AGENCY COSTS IN AN EMERGING MARKET:
INVESTIGATING BUSINESS GROUPS**

A Ph.D. Dissertation

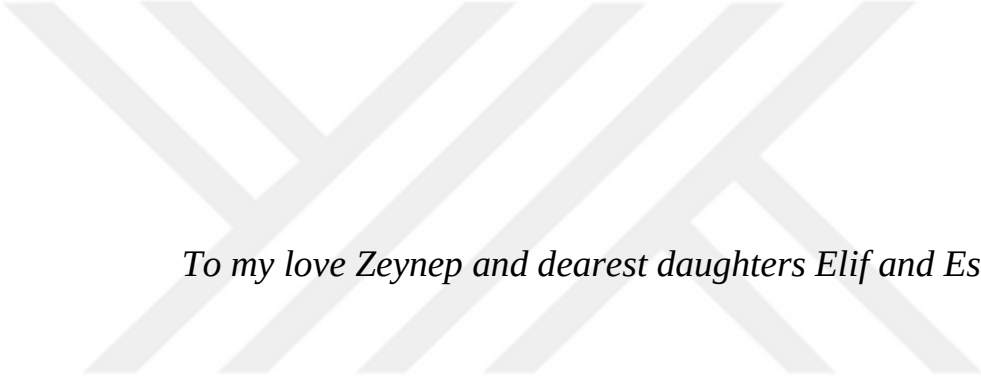
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September 2017

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Bilkent University 2017



To my love Zeynep and dearest daughters Elif and Esma

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The Graduate School of Economics and Social Sciences
of
İhsan Doğramacı Bilkent University

by

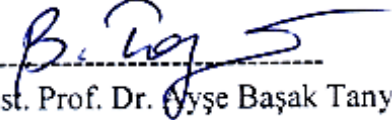
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In Partial Fulfillment of the Requirements for the Degree of
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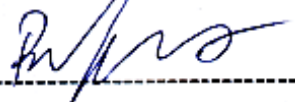
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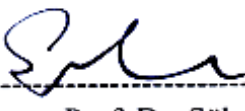
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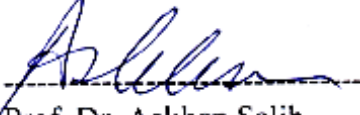
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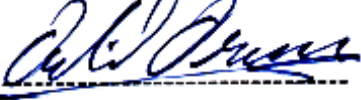
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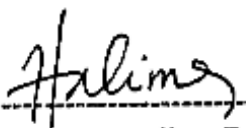
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ABSTRACT

AGENCY COSTS IN AN EMERGING MARKET: INVESTIGATING BUSINESS GROUPS

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September 2017

Positive abnormal returns around loan announcements imply that banks have unique expertise in information production about borrowers. I study abnormal returns around loans that Turkish listed firms secure from international markets between 2003 and 2016 to investigate two research questions. Do listed firms controlled by business groups have higher agency costs when compared to stand-alone firms? Does control through pyramid ownership structures increase agency costs of business group listed firms? I hypothesize that controlled for other factors, abnormal returns around loan announcements measure agency costs associated with borrowers because new information provided by bank loans lead to the higher revaluation for business group firms that bear agency costs. I provide evidence that when business group firms are positioned within pyramid ownership structures they realize higher abnormal returns when benchmarked against stand-alone firms and business group firms that are not

positioned within pyramids. Therefore, my results indicate market perception towards pyramid ownership structures in increasing tunneling incentives within business groups.

Keywords: Agency Problem, Asymmetric Information, Corporate Finance, Loan Announcement, Tunneling



ÖZET

GELİŞMEKTE OLAN ÜLKELERDE ASİL-VEKİL PROBLEMİ: İŞ GRUPLARININ İNCELENMESİ

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Kredi duyuruları etrafındaki anormal getiriler bankaların borç alanlar hakkında bilgi üretimindeki uzmanlığını işaret etmektedir. İki araştırma sorusunu cevaplamak için, 2003 ve 2016 yılları arasında halka açık Türk şirketlerinin uluslararası piyasalardan elde ettikleri kredilerin etrafındaki anormal getirileri çalıştım: (1) İş grupları tarafından kontrol edilen şirketler bağımsız şirketlere göre daha yüksek asil-vekil maliyetlerine mi maruz kalıyorlar? (2) Piramit ortaklık yapıları asil-vekil maliyetlerini artırmakta mıdır? Kurduğum hipotezler, banka kredileri tarafından sağlanan yeni bilgi sonucunda piyasanın yaptığı yeniden değerlemenin asil vekil maliyetleri yüksek olan şirketler için daha yüksek olduğuna dayanmaktadır. Buna göre, diğer faktörler kontrol edildikten sonra, kredi duyuruları etrafındaki anormal getiriler borç alanların asil-vekil maliyetlerini ölçmektedir. Bağımsız şirketler ve piramit yapılarda yer almayan iş grubu şirketleri ile karşılaştırıldıklarında piramit yapılarda yer alan iş grubu şirketlerinin kredi duyuruları çerçevesinde daha yüksek anormal getiriler sağladığını buldum. Sonuçlarım,

piramit ortaklık yapılarının iş grupları içerisinde hortumlama güdüsünü artırdığına ilişkin piyasa algısını ortaya koymaktadır.

Anahtar kelimeler: Asil-Vekil Problemi, Asimetrik Bilgi, Hortumlama, Kredi Açıklaması, Şirket Finansmanı



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CHAPTER I

INTRODUCTION

1.1 Statement of purpose

This dissertation investigates the agency problem between the controlling shareholder and minority shareholders. I focus on emerging markets in which business groups are controlling shareholders through substantial ownership stakes that they exercise on listed firms (Masulis, Pham, & Zein, 2011). I define these firms as publicly listed business group firms. In publicly listed business group firms, business groups control and run the firm but they share ownership stakes with minority shareholders. Minority shareholders hold diffused voting rights that disable them from effectively monitoring and influencing the controlling shareholder (Shleifer & Vishny, 1997).

Jensen & Meckling (1976) studies agency relationship in publicly listed firms that depends on separation of control and ownership. Jensen & Meckling (1976) defines the agency problem as the situation in which the agent acts in his/her own best interest regardless of the best interest of the principal. In publicly listed business group firms, agency relationship might lead to an agency problem between the controlling shareholder and minority shareholders which is called tunneling. Tunneling is defined as the transfer of resources out of a company to its controlling shareholder at the expense of minority shareholders (Johnson, La Porta, Lopez-de-Silanes, & Shleifer, 2000).

Tunneling covers a large set of self-dealing activities that harms minority shareholders. Examples are expropriation of corporate opportunities, contracts that leads to transfer pricing, sale and purchase of assets that are advantageous to the controlling shareholder (Johnson, La Porta, et al., 2000) or transactions that increase ownership claims of the controlling shareholder such as dilutive equity offerings and freeze outs (Atanasov, Black, Ciccotello, & Gyoshev, 2010).

Minority shareholders can sue any form of tunneling in courts. Especially, duty of loyalty provisions prohibits the controlling shareholder from benefiting at the expense of minority shareholders (Johnson, La Porta, et al., 2000; Shleifer & Vishny, 1997). Nevertheless, in many cases, minority shareholders cannot detect tunneling by the controlling shareholder which makes arbitration in the court impossible. Therefore, an important feature of the agency problem in business group firms is the information asymmetry between minority shareholders and the controlling shareholder, which may lead to moral hazard.

Moral hazard is the risk that the agent (controlling shareholder through its influence over the CEO) has an incentive to take excessive risks to the detriment of the principal (minority shareholders). Moral hazard arises because minority shareholders do not have perfect information regarding the behavior of the controlling shareholder. Moreover, the behavior of the controlling shareholder is not verifiable so it cannot be contracted on. It is difficult for minority shareholders to establish a contract that requires a commitment for the controlling shareholder not to breach duty of loyalty. Therefore, investors price the consequences of the risk of moral hazard and existing shareholders bear this cost in form of financing costs (Jensen & Meckling, 1976). The theory of Jensen & Meckling

(1976) implies that in equity markets moral hazard leads to agency costs measured in lower valuation of business group firms.

Leland & Pyle (1977); Ramakrishnan & Thakor (1984), Diamond (1984), and Fama(1985) suggest that banks have unique expertise in information production about and monitoring regarding borrowers. Bank's information production and monitoring is especially valuable in the presence of agency problems emerging from weak internal corporate governance of the borrower (Byers, Fields, & Fraser, 2008). Therefore, banks alleviate the problem of moral hazard that investors face regarding business group firms. Positive abnormal returns around loan announcements imply two important functions of banks that alleviate moral hazard problems in business group firms. Firstly, loans convey positive information to investors that the controlling shareholder's current conduct of management is effectual in limiting tunneling (Ramakrishnan & Thakor, 1984). Secondly, banks efficiently monitor the controlling shareholder to prevent the firm from future tunneling (Diamond, 1984, 1991b). Therefore, controlled for other factors, new information provided by bank loans should lead to the positive revaluation for business group firms that bear agency costs. Positive abnormal returns around loan announcements reflect this revaluation.

This thesis uses bank loan announcements to analyze agency costs associated with publicly listed business group firms. Loan announcements convey information to the equity market regarding the borrower. This information content enables me to address two research questions: Do listed firms controlled by business groups have higher agency costs when compared to stand-alone firms? Does control through pyramid ownership structures increase agency costs of business group listed firms?

My second research question investigates pyramid ownership structures that business groups extensively use in order to control affiliated firms in emerging markets (Masulis et al., 2011). The pyramid structure is defined as structure in which the controlling shareholder controls one listed firm that in turn controls another listed firm, a process that can be repeated a number of times (Claessens, Djankov, & Lang, 2000).

If a firm is controlled through pyramid ownership structure Masulis et al. (2011) defines it as a bottom firm. Specifically, for a bottom firm there exists at least one listed firm between the firm and the controlling shareholder in the control chain (La Porta, Lopez-De-Silanes, & Shleifer, 1999; Masulis et al., 2011). Conversely, horizontally controlled firms are non-bottom firms that are not controlled through pyramid ownership structures. Masulis et al.(2011) suggest that each bottom firm can be associated with an integer called pyramid layer which shows the number of listed firms between the firm and the controlling shareholder in the control chain.

Figure 1 illustrates a pyramid ownership structure that involves three companies A, B and C. In this setting, all three companies are controlled by the same controlling shareholder (CS). Firm A is directly controlled by CS; Firm B is controlled by CS through Firm A; Firm C is controlled by CS through Firm B. Ownership stakes X, Y and Z are defined for each level in the pyramid. In the illustration given by Figure 1, pyramid layers of Firm A, B and C are 0, 1 and 2 respectively. Moreover, bottom indicator variable associated with Firm A, B and C are 0, 1 and 1 respectively.

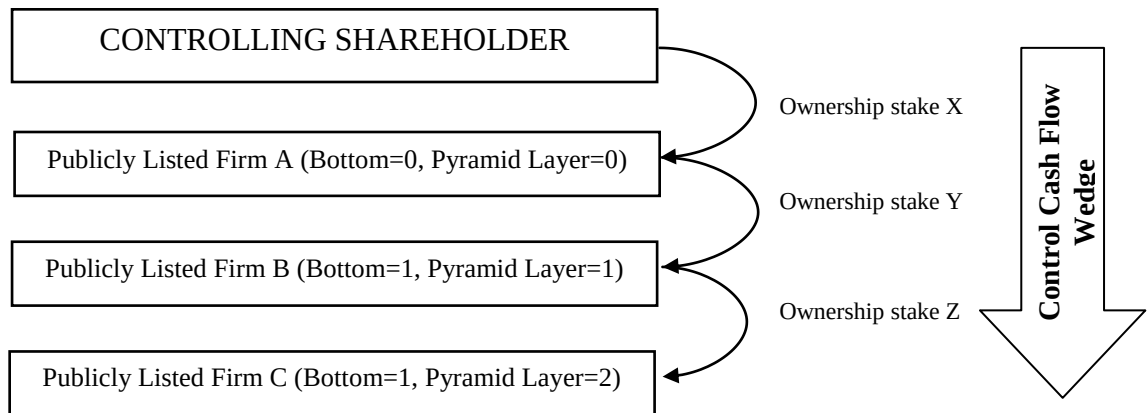


Figure 1 Pyramid Ownership Structure

This figure illustrates the typical pyramid ownership structure with three firms that are controlled by same controller shareholder. Control cash flow wedge increases as we go down through the pyramid.

Agency theory implies that incentives of tunneling intensify when the controlling shareholder controls a firm through pyramid ownership structure (Jensen & Meckling, 1976). Pyramid ownership structures lead to a control cash flow wedge for the controlling shareholder. Control cash flow wedge means that the controlling shareholder has lower cash flow rights than voting rights (La Porta et al., 1999). Therefore, control cash flow wedge increases incentives of tunneling because financial costs of tunneling are not totally assumed by the controlling shareholder.

To see the extent of control cash flow wedge in a pyramid structure, consider a case of a control chain with N firms. Each firm in the control chain exercises ownership stake of 50 percent on the firm that is positioned at the lower layer; controlling shareholder holds 50 percent of shares in firm 1; firm 1 holds 50 percent of shares in the firm 2, and so on.

In this example cash flow rights of the controlling shareholder for each firm $f=N$ is provided in Equation 1

$$\text{Cash Flow Rights} = \prod_{f=1}^N 0.5 \quad (1)$$

In the example, controlling shareholder exercises effective control on the firm. On the other hand, as N increases, cash flow rights of the controlling shareholder decreases accordingly. For $N=2$ and $N=3$ cash flow rights drop to 25 percent and 12.5 percent respectively. Therefore, for each firm that satisfies $N>2$ (bottom firm) control cash flow wedge is positive. Moreover that for higher values of pyramid layer (N becomes larger) control cash flow wedge increases accordingly.

1.2 Testable Hypotheses

1.2.1 Abnormal returns and agency costs

Previous theoretical and empirical literature on functions of banks implies that abnormal returns around loan announcements are an appropriate measure to assess agency costs associated with borrower. Positive abnormal returns around loan announcements reported by James (1987), Lummer and McConnell (1989) and many others suggests that bank loan announcements convey valuable information to the investors regarding the borrower. Ramakrishnan and Thakor (1984) and Fama (1985) suggest that banks are special because they produce information regarding borrowers which cannot be produced in other financial transactions. Moreover, in financial markets, banks are the most efficient intermediary in monitoring borrowers to alleviate moral hazard (Diamond,

1984, 1991b). Therefore, information production function of the bank will signal investors that the controller's current conduct of management is effectual in limiting tunneling Ramakrishnan and Thakor (1984). Moreover, monitoring function of a bank will signal the controlling shareholder's future commitment in constraining tunneling (Diamond, 1984, 1991b).

Theories on agency costs of debt suggest that banks expand more effort in evaluating and monitoring borrowers with higher levels of moral hazard. Tunneling increases the default risk of the borrower, impair the value of collateral and decrease the recovery rates of defaulted debt (Akerlof, Romer, Hall, & Mankiw, 1993; La Porta, Lopez-de-Silanes, & Zamarripa, 2003). Therefore, banks exert more effort if the borrower has higher potential for agency problems (Lin, Ma, Malatesta, & Xuan, 2013). Lin et al. (2013) report that if a firm has high agency problem, then its controlling shareholder chooses less bank financing to isolate the firm from bank monitoring. Specifically using a sample of 43,502 firm-year observations covering 20 countries from 2001 to 2010, they find that one standard deviation increase in the control cash flow wedge decreases the ratio of bank debt to total debt more than 16 percent. Their finding is economically significant given that the mean level of bank debt to total debt ratio is 71 percent in the sample they use.

As a result, in this study, everything else equal, I use abnormal returns around loan announcements as a measure of agency costs associated with listed firms. Several studies analyze the relation between agency costs and abnormal returns around bank loan announcements (Byers et al., 2008; Harvey, Lins, & Roper, 2004). Harvey et al. (2004) use cross country data with 843 bank loans. They partition borrowers with

respect to the median control cash flow wedge and compare average cumulative abnormal returns for a six-day event window. Borrowers with high control cash flow wedge average 1.2 percent higher abnormal returns around loan announcements compared to announcements of borrowers with low control cash flow wedge. Moreover, Byers et al. (2008) study 800 bank loan announcements in the US market between 1980 and 2003. They report that a one standard deviation increase in the ratio of outside directors on the board reduces the loan announcement abnormal returns by more than 50 percent. The findings of Byers et al. (2008) is relevant because it shows the relation between decreased abnormal returns realized around loan announcements and higher number of outside directors in the board which decreases the agency problem between minority shareholders and the controlling shareholder.

1.2.2 Hypotheses

My first research question is whether listed firms controlled by business groups have higher agency costs than stand-alone firms have. If business group control does not cause higher agency costs, I hypothesize that abnormal announcement returns around international loans should not be higher for business group controlled firms when compared to stand alone firms. Alternatively, If business group control causes higher agency costs, abnormal announcement returns around international loans should be higher for business group controlled firms when compared to stand alone firms.

My second research question is whether control through pyramid ownership structures increase agency costs of business group controlled listed firms. If business group control through pyramid ownership structures do not lead to higher agency costs, I hypothesize

that abnormal announcement returns around international loans should not be higher for bottom firms when benchmarked against stand-alone firms and non-bottom firms.

I consider factors in which tunneling incentives of the controlling business group is significantly higher. In the presence of these factors the control cash flow wedge should be more likely to result in tunneling. If business group control through pyramid ownership structures does not lead to higher agency costs, I hypothesize that abnormal announcement returns realized by business group firms controlled through pyramid ownership structure should not increase with factors that enhance tunneling incentives of the controlling business group. Alternatively, if business group control through pyramid ownership structures leads to higher agency costs, I hypothesize that its abnormal announcement returns around international loans should increase with factors that enhance tunneling incentives of the controlling business group. The factors I examine are provided below:

1.2.2.1 The voting rights of the controlling shareholder exceed 50 percent

Control power of large owners intensifies after they have sufficiently high ownership rights (Claessens, Djankov, Fan, & Lang, 2002; Shleifer & Vishny, 1997). McConnell & Servaes (1990) reports that after control rights gets beyond a certain point, (50 percent), firm value starts to fall because of agency problem emerging between the controlling shareholder and other shareholders.

1.2.2.2 The firm has lower quality of corporate governance

Corporate governance covers mechanisms, processes and relations by which corporations are controlled and managed. It includes mechanisms for monitoring

actions, policies and decisions of the firm. Corporate governance serves as an internal monitoring mechanism that reduces agency costs (Bebchuk, Cohen, & Ferrell, 2009; Gompers, Ishii, & Metrick, 2003). In emerging markets the quality of internal monitoring through corporate governance substitutes investor protection and decreases shareholders' concerns for expropriation by controlling shareholders (Mitton, 2002). Moreover, internal monitoring through corporate governance also substitutes bank monitoring (Ahn & Choi, 2009; Byers et al., 2008; Ge, Kim, & Song, 2012; Graham, Li, & Qiu, 2008).

1.2.2.3 The firm has informational opacity; that is firm is small or young
Informationally opaque firms are more difficult to monitor for outside investors. Therefore, the marginal cost of additional tunneling of the controlling shareholder is lower for opaque firms (Lin, Ma, Malatesta, & Xuan, 2012). Therefore, opaqueness enhances tunneling incentives of the controlling business group.

1.2.2.4 The firm has higher risk
Agency relation implies that business group's cash flow rights exercised on the group firm determines the incentives of tunneling. Akerlof et al. (1993) and La Porta et al. (2003) argues that when a firm's net value is close to zero, for controlling shareholders, the incentives of tunneling enhances. Risk increases the probability that the value the firm's equity drops below zero.

1.2.2.5 There exists an economy wide crisis
Agency costs are directly related to the expected rate of return on investments of the firm (Johnson, Boone, Breach, & Friedman, 2000; La Porta et al., 2003). Return on

investments is the opportunity cost of tunneling. Instead of tunneling resources out of the firm, the controlling shareholder might invest resources to enjoy the resulting returns in the future. If return on investment is high, the incentives of the controlling shareholder to tunnel are lower. In contrast, lower and uncertain returns during crisis times increase the incentives of moral hazard.

1.2.2.6 Non-financial firms have higher profitability

Profitable firms are at higher risk of expropriation by controlling shareholders. Payout of excess cash flow to minority shareholders might be a source of agency conflict when control and ownership rights are separated (Jensen, 1986). In case of agency conflict between the controlling shareholder and minority shareholders, firms with higher profitability have higher risk of tunneling. Profitability increases excess cash flows to be appropriated by the controlling shareholder (Bertrand, Mehta, & Mullainathan, 2002).

1.2.2.7 Non-financial firms have lower long term debt

Firms are more monitored by lenders if they currently have more long term debt. Moreover, long term debt means higher levels of commitment to channel some of their cash flow to their debt (Friedman, Johnson, & Mitton, 2003). Therefore, when the firm has low levels of long term debt, the control cash flow wedge is more likely to result in tunneling.

1.2.2.8 Non-financial firms have higher Tobin's q

Firms with high Tobin's q have more growth options relative to their assets in place (Billett, Flannery, & Garfinkel, 1995). They indicate that growth potential make them harder for shareholders to evaluate. Billett et al. (1995) predicts that the positive value

generated in a loan deal is higher for firms with higher Tobin's q . This is because; the bank's monitoring effort brings higher marginal value if the borrower has higher growth potential. Agency problem associated with the firm might undermine their growth potential. Therefore, abnormal returns around loan announcements are higher for the business group firms that are controlled through pyramid ownership structures if the borrower has higher Tobin's q .

1.3 Research Method

I employ an event study methodology to compute abnormal returns around loan announcements secured in international markets. I choose international loans because previous literature suggests a relationship between business groups and domestic banks in emerging markets which undermines efficient monitoring function of banks (Boscaljon & Ho, 2005). I hypothesize that after other factors are controlled, abnormal returns around international loans shows the level of agency costs associated with the borrower. I regress abnormal returns around international loan announcements on measures of control by business groups and pyramid ownership structure. Abnormal returns are realized returns benchmarked against a model for normal returns.

1.3.1 Control variables

I base my analysis on large set of independent variables that control for the cross sectional variation in abnormal returns. Control variables can be grouped under borrower characteristics; loan purpose; loan characteristics; loan structure; lender characteristics and time series variation.

Borrower characteristics control for the quality of corporate governance, informational opacity, and risk of borrowers associated with each loan announcement. Loan purpose controls whether loan is extended for capital investment, general corporate purposes, restructuring and debt repayment. Other loan characteristics control for loan contract terms which is correlated with the level of monitoring effort devoted by banks. Loan contract terms include loan amount, maturity, whether the loan is line of credit and whether the loan is secured. Loan structure controls for the level of monitoring emerged from the number of lenders, the share retained by lead lenders and whether the loan is subsequent loan. Lender characteristics control for the credibility of the lender through previous information generated by the bank on domestic market. Lender characteristics contain the total amount of previous loans extended by lead lenders to domestic market and whether a lender has a subsidiary incorporated in domestic market.

1.4 Sampling framework

My sample covers 313 international loan deals between 2003 and 2016 extended to publicly listed firms incorporated in Turkey. Loan deal data is from the DEALSCAN database. Using ownership information provided by ORBIS database, I compile a new hand collected data set of corporate ownership structure for 5,348 firms within 238 different business groups incorporated in Turkey.

Turkish economy is an ideal setting due to the prominence of business groups. Bugra (1994) states that in 1988, 314 of the largest 500 firms in Turkey are affiliated with a business group. Yurtoglu (2000) analyzes listed firms in 1998 and finds that out of 257, 192 firms are owned by business groups. Masulis et al. (2011) reports that when total

market capitalization is considered 46 percent of listed firms in Turkey belong to business groups. Moreover, Yurtoglu (2000) argues that similar to other emerging markets, Turkey has lower investor protection; therefore, the potential for agency problem is high.

Turkish listed firms have high concentration of ownership. Moreover, they use pyramid ownership structures extensively. Yurtoglu (2000) states that the ownership in listed firms is highly concentrated. He reports that for firms that has ultimate owners, voting rights of controlling shareholders averages to 60.3 percent. Masulis et al. (2011) report that 24 percent of firms that in a business group are controlled through pyramid structure. This figure is closer to my findings which is 20 percent. These characteristics of business groups in Turkey offer an ideal setting to examine the relation between pyramid ownership structures and firm value.

I investigate business groups in a single country because first of all, business group definitions might vary substantially across countries (Claessens, Fan, & Lang, 2006; Khanna, 2000). Single country analysis depends on consistent definition of business groups (Byun, Choi, Hwang, & Kim, 2013). Secondly, in cross-country analysis, country-level factors such as legal institutions and availability of capital is dominant in explaining the variation in firm values due to the agency costs (La Porta et al., 1999; Masulis et al., 2011). Firms in the same country face the same institutional environment, therefore a single-country analysis can mitigate endogeneity problem between business group affiliation and institutional environment (Byun et al., 2013; Joh, 2003).

1.5 Summary of findings

In this study, I first investigate whether listed firms controlled by business groups have higher agency costs than stand-alone firms have. I find that, on average, loans extended to business group firms are associated with 0.61 percent higher two days abnormal returns around international loan announcements ($CAR[-1,0]$) and this difference is significant at 5% level. I run cross-sectional regressions to estimate the likelihood that a firm controlled by business groups averages higher abnormal returns around international loans. I find that business group firms are associated with 0.57-0.64 percent higher two days abnormal returns. The impact of business group control on abnormal returns is statistically significant at 10 percent level in all of the specifications except one. When I use all of my control variables the impact of business group control on abnormal returns becomes not statistically significant.

When I restrict my analysis to 75 loan announcements in which borrowers are non-financial firms, business group firms are associated with 1.67-2.20 percent higher two days abnormal returns depending on the specification. In all of the specifications the impact of business group control on abnormal returns is statistically significant at 5 percent and 10 percent level. The results indicate that for the publicly listed companies, agency costs are higher for the firms that are controlled by a business group when compared to stand alone firms.

In this dissertation, I also investigate whether control through pyramid ownership structures increase agency costs of business group controlled listed firms. I find that, on average, loans secured from international markets lead to 0.60 percent higher abnormal returns for bottom firms when benchmarked against abnormal returns to non-bottom

firms and stand-alone firms. This difference is significant at 10% level. I run several cross-sectional regressions to estimate the likelihood that a firm controlled through a pyramid ownership structure averages higher abnormal returns around international loan announcements. I find that controlled for other factors being a bottom firm is associated between 0.59 and 0.66 percent higher two days abnormal returns depending on different specifications of the model. In all of the specifications the coefficients of bottom variable are significant at 5 percent and 10 percent level. Moreover, I find that increase of one pyramid layer is associated between 0.31 and 0.34 percent higher abnormal returns in two days. The coefficients of pyramid layer variable are significant at 1 percent and 5 percent level in all of the specifications.

When I restrict my analysis to 75 loan announcements in which borrowers are non-financial firms, cross-sectional regressions show that bottom business group firms are associated with 0.55-1.26 percent higher two days abnormal returns depending on the specification. In none of the specifications the impact of being bottom on abnormal returns is statistically significant. Additionally, I find that for non-financial firms each pyramid layer is associated with 0.55-0.95 percent abnormal returns. The coefficients of pyramid layer are significant at 5 percent and 10 percent level in all of the specifications. My results indicate that agency costs are higher for the firms that business groups control through pyramid ownership structures.

1.5.1 Factors that enhances agency costs associated with pyramid ownership structures

I further investigate agency costs associated with pyramid ownership structures by considering factors in which tunneling incentives of the controlling business group is

significantly higher. In the presence of these factors the control cash flow wedge should be more likely to result in tunneling.

1.5.1.1 The voting rights of the controlling shareholder exceeds 50 percent

I find that when bottom firms secure financing from international markets, their abnormal returns are 0.70 percent higher if voting rights of the controlling shareholder is 50 percent and over. This impact is statistically significant at 5 percent level. Moreover, I find that 50 percent and over voting rights of the controlling shareholder bring 0.41 percent higher abnormal returns for each level of pyramid layer. My results indicate that market perception towards agency costs are higher when a firm is controlled by business groups through a pyramid structure and the controlling group exercises high control power on the firm. New information conveyed by loan announcements alleviates agency costs associated with pyramid ownership structures and high control power exercised by business group on the firm.

1.5.1.2 The firm has lower quality of corporate governance

I use two variables to measure the quality of corporate governance. First one is a dummy variable which shows firms with qualified governance. I generate this variable by considering firms included in Borsa Istanbul (BIST)'s Corporate Governance Index (XKUR). The second variable is a dummy variable that identifies banking firms. In Turkey corporate governance becomes a concern mostly for banks after banking crisis of 2000 (Ararat, Black, & Yurtoglu, 2017). They discuss that banking and capital market regulatory authorities encourage banks to conform higher quality of corporate

governance due to high losses suffered from the relations between the banks and their owner's after the banking crisis of 2000.

I find that when bottom firms secure financing from international markets, they realize 1.10 percent higher abnormal returns if they have lower quality of corporate governance. Moreover, I find that lower quality of corporate governance brings 0.50 percent higher abnormal returns for each level of pyramid layer. When I use bank dummy to proxy for higher quality of corporate governance, I find that when bottom firms secure financing from international markets, they realize 0.19 percent lower abnormal returns if they are banking firm. Moreover, I find that being a banking firm brings 0.21 percent lower abnormal returns for each level of pyramid layer. My results indicate that, agency costs are higher when a firm is controlled by business groups through a pyramid structure and they have lower corporate governance quality.

1.5.1.3 The firm is informationally opaque

I use firm age to proxy for opacity. I also use firm size in total assets. I define the opacity threshold as 25 percentile of the empirical distribution for both size and age. If a firm's age and size is lower than this threshold I call these firms opaque.

When I use size as a proxy for opacity, I find that when bottom firms secure international financing, if they are opaque they realize 0.41 percent higher abnormal returns than if they are transparent. Moreover, I find each level of pyramid layer brings 0.36 percent higher abnormal returns for opaque firms when compared to transparent firms. When I use age as a proxy for opacity, I find that when bottom firms secure international financing, if they are opaque they realize 2.45 percent higher abnormal

returns than if they are transparent. I also find that each level of pyramid layer brings 2.64 percent higher abnormal returns for opaque firms when compared to transparent firms. My results indicate that, agency costs are higher when a firm is controlled by business groups through a pyramid structure and it is opaque.

1.5.1.4 The firm has higher risk

I proxy risk using standard deviation of daily returns in one year prior to loan announcement. I partition the sample into high risk and low risk borrowers by using the median of the empirical distribution as threshold. I find that when a bottom firm secures international financing, high risk firms average 0.93 percent higher abnormal returns when compared to being low risk firm. Moreover, I find that for each level of pyramid layer, high risk firms average 0.46 percent higher abnormal returns than that of low risk firms realize. My results indicate that, agency costs are higher when a firm is controlled by business groups through a pyramid structure and it has high risk.

1.5.1.5 There exists an economy wide crisis

To identify the economy wide crisis around the issue date of the loan, I generate a crisis dummy that equals to one if the issue year is equal to 2009 or 2010. Crisis dummy shows the impact of the global crisis on the Turkish economy. I find that if bottom firms secure financing during 2009 or 2010 they realize 0.56 percent higher abnormal returns when compared to financing obtained in other years. I also find that for each level of pyramid layer, financing during 2009 or 2010 brings 0.38 percent higher abnormal returns than financing at other years.

1.5.1.6 Non-financial firms have higher profitability

I use Return on Assets (RoA) to measure profitability. I partition the sample into borrowers with high profitability and low profitability by using the median of the empirical distribution. I use separate dummies that shows I find that when bottom firms secure financing in international markets, if they have high profitability they realize 1.30 percent higher abnormal returns than if they have low profitability. I also find that for each level of pyramid layer, being high profitable firm brings 0.44 percent higher abnormal returns than being low profitable firm.

1.5.1.7 Non-financial firms have lower long term debt

I use the ratio of long term debt over total assets. I partition the sample into borrowers with high long term debt and low long term debt by using the median of the empirical distribution. I find that when bottom firms secure financing in international markets, if they have low long term debt they realize 1.76 percent higher abnormal returns than if they have high long term debt. I also find that for each level of pyramid layer, having low long term debt brings 1.22 percent higher abnormal returns than being high long term debt.

1.5.1.8 Non-financial firms have higher Tobin's Q

I define Tobin's q as sum of book value of debt and market value of equity divided by total assets. I partition the sample into firms with high Tobin's q and low Tobin's q. I use the median of the empirical distribution. I find that when bottom firms secure financing in international markets, if they have high Tobin's q, they realize 0.64 percent higher abnormal returns than if they have low Tobin's q. I also find that for each level of

pyramid layer, being high Tobin's q firm brings 0.76 percent higher abnormal returns than being low Tobin's q firm.

1.6 Contribution of the study

The primary contribution of this study is to the business group literature. In emerging markets business groups serve as a substitute for markets (Guillén, 2000; Leff, 1978; D. W. Yiu, Lu, Bruton, & Hoskisson, 2007). Therefore, business group affiliation is beneficial for firms because business group firms access to factors of production less expensively (Khanna & Rivkin, 2001; D. W. Yiu et al., 2007) and they pool the resources and distribute them efficiently within group (Chang & Hong, 2000; Guillén, 2000). Accordingly, internal capital markets within business groups lead to lower investment sensitivity to internal fund availability for business group firms when compared to stand-alone firms (H. Almeida, Kim, & Kim, 2015; Hoshi, Kashyap, & Scharfstein, 1991; Lee, Park, & Shin, 2009; Shin & Park, 1999; Stein, 1997). Moreover, business groups cross subsidize poorly performing affiliated firms (Ferris, Kim, & Kitsabunnarat, 2003; Gopalan, Nanda, & Seru, 2007). As a result, business group literature provides evidence on better performance of business group firms when compared to stand alone firms (Carney, Shapiro, & Tang, 2009; Chang & Choi, 1988; Chang & Hong, 2000; Estrin, Poukliakova, & Shapiro, 2009; Khanna & Palepu, 2000b, 2000a; Khanna & Rivkin, 2001).

Alternative view on costs of business groups mainly focuses on tunneling incentives associated with business group affiliation (Atanasov et al., 2010; Bae, Kang, & Kim, 2002; Baek, Kang, & Lee, 2006; Bertrand et al., 2002; Jiang, Lee, & Yue, 2010;

Johnson, Boone, et al., 2000; Johnson, La Porta, et al., 2000). Moreover, pyramid ownership structures increase incentives of tunneling (Bertrand et al., 2002; Claessens et al., 2002; Connelly, Limpaphayom, & Nagarajan, 2012; Joh, 2003; Lins, 2003; Belen Villalonga & Amit, 2006). Previous empirical analysis on business group control and ownership structures analyzes market value variables (such as Tobin' q) or accounting performance (profitability) to assess the associated agency costs. To my knowledge, this dissertation is the first study that investigates loan announcements in order to analyze agency costs within business group firms that are controlled through pyramid ownership structures.

My results show that despite benefits associated with business groups some cross sectional and time series variation in characteristics of business group firms lead to different levels of agency costs. Market is concerned whether pyramid ownership structures increase tunneling incentives of business groups. Market's concerns of investors for tunneling of business groups firms within pyramids increases with higher levels of voting rights of business group exercised on the firm, lower quality of corporate governance, higher informational opacity, higher risk, higher profitability, higher growth opportunities and lower levels of long term debt. Moreover, concerns of investors for tunneling of business groups firms within pyramids increases in an economy-wide crisis. I show that the concerns of investors are reflected as agency costs because new information conveyed by loan announcements lead to higher abnormal returns for business group firms within pyramid structures.

This study also contributes to loan announcement literature (Best & Zhang, 1993; Billett et al., 1995; James, 1987; Lummer & McConnell, 1989; Preece & Mullineaux, 1996;

Slovin, Johnson, & Glascock, 1992) by analyzing the relation between agency problem and loan announcement returns. Loan announcement studies on agency problem can be classified on two groups of papers. First group of papers analyzes the problematic lending relations between a bank and a firm when they are in the same business group (Huang, Schwienbacher, & Zhao, 2012; Kang & Liu, 2008; Qian & Yeung, 2015). These papers investigate the agency problem between the controlling shareholder and minority shareholders by showing that bank lending within groups are inefficient. Therefore, they report that market reaction is negative around these loans.

Second group of papers such as Harvey et al. (2004) and Byers et al. (2008) analyzes announcement effects around loans extended from unaffiliated banks. These studies are based on information production and monitoring effect as a result of efficient bank lending. In that sense, the closest studies to this dissertation are Harvey et al. (2004) and Byers et al. (2008). But there exists an important difference: they focus on different type of agency problem which arises as a result of conflict between the manager and shareholders. To this end, this study contributes to the loan announcement literature from two aspects: Firstly, it focuses on agency problem between the controlling shareholder and minority shareholders by using information production and monitoring function of banks through efficient lending. As far as I know no previous studies performs similar kind of analysis.

Secondly, this study investigates the agency problem by controlling for the quality of corporate governance of the borrowers. The paper by Byers et al. (2008) published after Harvey et al. (2004) affirms the importance of quality of corporate governance in an event study analysis around loan announcements. Byers et al. (2008) provides evidence

that the quality of corporate governance of the firm is closely related with internal monitoring quality which substitutes the monitoring provided by the bank. Therefore, this study contributes by analyzing abnormal returns around loans after controlled by the quality of corporate governance.

1.7 Organization of the study

Chapter 2 reviews the related research on business groups and the agency problem associated with pyramid ownership structures. Moreover, I revise the literature on the value of bank monitoring in financial markets and event study methodology on loan announcements.

Chapter 3 develops my testable hypotheses. I have two research questions that explore agency costs associated with business group control and pyramid ownership structures that business groups use. I measure agency costs by using abnormal borrower returns around loans secured at international markets. By using this measure, I hypothesize that if business group control cause higher agency costs, then, all else being equal, abnormal announcement returns around loans are significantly higher for business group controlled firms when compared to stand alone firms.

The other hypothesis predicts that if business group control through pyramid ownership structures causes higher agency costs, then financing from international loan market lead to higher abnormal returns for business group firms that are controlled through pyramid structures when benchmarked against stand-alone firms and other business group firms. Lastly, I investigate the agency costs of pyramids by using another hypothesis. I

question whether co-occurrence pyramid structures with factors that increase tunneling incentives lead to higher agency costs for business group firms. I hypothesize that if business group control through pyramid ownership structures causes higher agency costs, when business group firms that are controlled through pyramid structures get international loans, then presence of factors that increase tunneling incentives lead to higher abnormal returns.

Chapter 4 develops the research methods that this study employs. I describe the event study methodology that I adopt. I present multivariate models that investigate cross sectional variation of abnormal returns. First model investigates the relation between concentrated ownership by business groups and abnormal returns around loan announcements. Second model investigates the relation between pyramid ownership structure in business groups and abnormal returns around loan announcements. Third model investigates how interacting pyramid ownership structure with factors that enhance tunneling incentives influence abnormal returns around loan announcements.

Chapter 5 begins by describing the sampling procedure on different datasets that I employ in this dissertation such as loans extended to Turkish listed firms in international markets; ownership structure of business groups in turkey and closing prices of equities. Then, I provide descriptive statistics on different samples I use.

Chapter 6 investigates the magnitude of abnormal returns around loans secured from international markets. I analyze whether my control variables are source of positive abnormal returns around loan announcements.

Chapter 7 estimates the impact business group control and pyramid ownership structure on abnormal returns. I provide univariate and multivariate evidence to analyze the hypotheses which state that business group control and pyramid ownership structure is associated with higher levels of abnormal returns around international loan announcements.

Chapter 8 further estimates the impact of pyramid ownership structure on abnormal returns. I present the evidence on the impact of the interaction between pyramids and specific factors that enhance tunneling incentives on abnormal returns. These factors are the extent of control by business groups, the quality of corporate governance, the level of information opacity, the level of risk, and the economy wide crisis.

Chapter 9 is devoted to non-financial firms. This chapter estimates the impact of business group control and pyramid ownership structure on abnormal returns of non-financial firms. I provide univariate and multivariate evidence to analyze how business group control and pyramid ownership structure is associated with higher levels of non-financial borrowers' abnormal returns. Moreover, this chapter presents evidence on the impact of the interaction between pyramids and specific factors that enhance non-financial firms' tunneling incentives on abnormal returns. These factors are profitability, Tobin's q and long term debt.

Chapter 10 summarizes the findings and develops implications. The chapter concludes by identifying opportunities for future research.

CHAPTER II

LITERATURE REVIEW

Business groups are set of independent firms that (1) are operating in multiple unrelated industries; (2) are bound together by formal or informal ties and (3) act in coordination to achieve mutual objectives (Khanna & Rivkin, 2001; Khanna & Yafeh, 2007; D. W. Yiu et al., 2007). Formal ties are referred to economic ties such as ownership and informal links are referred to any type of social links such as family or friendship links (D. Yiu, Bruton, & Lu, 2005). Mutual objectives mainly refer to common or coordinated strategic and financial management between independent but affiliated firms (Khanna & Rivkin, 2001; Leff, 1978; D. W. Yiu et al., 2007).

Researchers ask question whether business group affiliation increases or decreases firm value especially in emerging market context. Prominence of business groups in emerging countries and their ownership structures are important in assessment of the respective costs and benefits associated with business group affiliation. Accordingly, I review the academic literature that focuses on the means through business group affiliation increases and decreases firm value.

2.1 The Prominence of Business Groups in Emerging Countries

Classical view of firm proposes that ownership is not concentrated and the manager controls the firm (La Porta et al., 1999). In contrast, empirical evidence states that the most of corporations globally have concentrated ownership; large shareholders exercise substantial ownership stakes on listed firms. La Porta et al. (1999) studies 691 firms which are the largest among 27 richest countries in 1996. They find that even for large firms in richest countries and with stricter definition of 20 percent cutoff threshold, 64 percent of publicly listed firms around the world are widely held. Cutoff threshold determines the criteria for ultimate control: if total voting rights of a party exceeds the determined threshold, this party is said to be the controlling shareholder. In the literature, cutoff threshold is used as 10 percent or 20 percent and if more than one party fulfills the criteria, the party with highest voting rights is the controlling shareholder (La Porta et al., 1999). Other studies find similar results for Asian and European countries with larger firm data (Claessens et al., 2002, 2000; Faccio & Lang, 2002).

There exist four types of ultimate owners defined in the literature: families, state, widely held corporations and widely held financial institutions. Empirical evidence states that family business group control is persistent among developing countries (Claessens et al., 2002, 2000; Faccio & Lang, 2002; La Porta et al., 1999; Masulis et al., 2011). Recently, Masulis et al. (2011) studies 28,635 firms in 45 countries. They show that 40 percent of listed firms in emerging countries belong to family controlled business groups. This figure is only 19 percent for the total sample that covers both emerging and developed countries.

2.2 Benefits of Business Groups

Dominant explanation of prominence of business groups focuses on the market failure (Guillén, 2000) or institutional voids (D. W. Yiu et al., 2007) in emerging countries. In emerging countries, business groups serve as a substitute for poor institutions, undeveloped markets and inefficient regulations (Leff, 1978).

Two different views implies that in emerging markets, diversified business groups bring benefits by forming internal markets for capital, labor and other types of inputs of production. Transaction cost view of firm states that business group affiliation decrease transaction costs because business group firms access to capital, labor, information, technology, know-how, and managerial personnel less expensively (Khanna & Rivkin, 2001; D. W. Yiu et al., 2007). Resource based view states that business groups pool the resources and distribute them internally according to the best use within group which results in significant economies of scale and scope benefits (Chang & Hong, 2000; Guillén, 2000).

Specifically, internal capital markets benefit business group affiliated firms from several points of view.

Firstly, in parallel with resource based view (Chang & Hong, 2000; Guillén, 2000), business groups pool finance capital and distribute them within member firms according to the respective investment needs. When compared to unaffiliated firms, firms affiliated with business groups are found to have lower investment sensitivity to internal fund availability (Hoshi et al., 1991; Lee et al., 2009; Shin & Park, 1999). As a result, business group firms have higher amounts of capital expenditure and generate higher

cash flow compared to non-business group firms (Lee et al., 2009). That kind of benefits is marginally more beneficial in emerging markets; because less developed financial markets in emerging markets lead to higher sensitivity of corporate investments to internal cash flow of firms (Islam & Mozumdar, 2007).

Secondly, previous empirical findings state that business group firms have lower volatility in cash flows (Ferris et al., 2003; Khanna & Rivkin, 2001; Khanna & Yafeh, 2005). Investing several industries and jurisdictions provide business groups by different sources of cash flows and serve as insurance which is especially important in unstable economy of emerging markets (Khanna & Yafeh, 2005). Lower cash flow volatility is beneficial for business group firms because risk-sharing through financial markets in emerging countries is costly (Khanna & Rivkin, 2001; Leff, 1978).

The empirical evidence on benefits of business group formation on emerging markets compare the accounting performance of business group affiliated firms with non-affiliated firms. Most studies on emerging markets document that business group affiliation lead to positive impact on member firms' market value and accounting performance. These studies focus on Korea (Chang & Choi, 1988; Chang & Hong, 2000), India (Khanna & Palepu, 2000a); Chile (Khanna & Palepu, 2000b), China (Carney et al., 2009) and Russia (Estrin et al., 2009). In contrast, in a cross country study based on 14 countries Khanna & Rivkin (2001) finds mixed results: in six countries business affiliation brings benefits in terms of accounting performance, in three of remaining countries they find a negative impact associated with business group affiliation.

2.3 Agency Theory

The agency problem is the conflict of interest between the agent and the principal. In an agency relationship the principal designs a contract to make the agent act on behalf of the principal but the effort of the agent is not verifiable. Moral hazard is the central feature of the problem which means that the agent's behavior cannot be observable and contractable by the principal (Macho-Stadler & Pérez-Castrillo, 2001). When the agent's behavior is not aligned with the best interest of principal, an agency problem arises.

The theory of Jensen & Meckling (1976) shows how separation of control and ownership in firms leads to agency costs. In this setting, the party that owns the company is the principal who delegates decision making authority to the agent. In return, the agent manages the company on behalf of the principal. Jensen & Meckling (1976) shows that investors discount firms due to misalignment of incentives between the agent and principal result.

The problem of separation of ownership and control imply two different types of agency problem in equity markets (Belen Villalonga & Amit, 2006; Belén Villalonga, Amit, Trujillo, & Guzmán, 2015). The first type is between the managers and atomistic shareholders. Diffused voting rights of atomistic shareholders disable them from effectively monitoring and influencing the manager. The second type of agency problem is between a controlling shareholder and the remaining atomistic shareholders (minority shareholders).

Concentration of ownership brings benefits by mitigating the agency problem between managers and shareholders (Claessens et al., 2002; Shleifer & Vishny, 1997). By

concentration of ownership shareholders exercise more effective monitoring on the manager's actions. Large shareholders with concentrated ownership have ability to select, organize and direct corporate managers (La Porta et al., 1999). Therefore, incentives of management and shareholders are more aligned.

However, concentration of ownership gives rise to another type of agency problem. The controlling shareholder runs the firm through its influence over the CEO. The controlling shareholder has benefits to pursue and in general these benefits may not coincide with the benefits of minority shareholders (Shleifer & Vishny, 1997). As a result, concentration of ownership leads to the conflict of interest between the controlling shareholder and minority shareholders. The main agency problem in such firms is not the misalignment of a manager's actions with minority shareholders but expropriation of minority shareholders by the controlling shareholders (Claessens et al., 2002). In emerging markets, business groups are controlling shareholders with own interests that they represent (Khanna & Rivkin, 2001; Khanna & Yafeh, 2007; D. W. Yiu et al., 2007). Therefore, central cost of business groups in emerging markets is the risk of business group expropriation of minority shareholders.

2.4 Tunneling

The central agency problem in business groups that leads to expropriation of minority shareholders is defined as tunneling. Johnson et al. (2000) first used the term tunneling to refer diversion of resources out of a company to its controller shareholder. Some of papers define the same problem as self-dealing (Djankov, La Porta, Lopez-de-Silanes, & Shleifer, 2008).

Tunneling can be in many forms and most of these forms might be disguised within legal borders and cannot be easily detected (Jiang et al., 2010; Johnson, La Porta, et al., 2000). The generic classification of tunneling is made by Atanasov et al. (2014). They classify tunneling activities as (1) cash flow tunneling, (2) equity tunneling, and (3) asset tunneling. Main forms of tunneling are provided in Table 1.

Cash flow tunneling is the diversion of operating cash flow from the firm to the controller shareholder (Atanasov et al., 2014). When I use the controlling shareholder, hereafter I mostly mean other affiliated firms in which the controlling shareholder has large ownership stake. Cash can be transferred by transfer pricing (La Porta et al., 2003). Transfer pricing means selling inputs or purchasing outputs at prices advantageous to the controlling shareholder. Moreover, above market compensation of controlling managers in cash, above market priced payments to the controlling shareholder for services, loans to the controlling shareholder at below market terms are also different forms of cash flow tunneling (Atanasov et al., 2014). La Porta et al. (2003) finds evidence that during Mexican crisis of 1998 banks extend loans below market terms to the affiliated firms.

Atanasov et al. (2014) defines asset tunneling as either the sale of assets at below market value or acquiring assets at above market value. Bae et al. (2002) find evidence that M&A deals in Korea are source of tunneling.

Equity tunneling is a transaction that increases ownership claims of the controlling shareholder. Dilutive equity offerings and freeze-outs are common examples. Dilutive equity offerings are issuing of shares to controlling shareholder below market value; whereas freeze-outs are forced sale of minority shares to the controlling shareholder

below market value (Atanasov et al., 2014). Baek et al. (2006) show that private security offerings within business groups are finalized at advantageous prices to the controlling shareholder. Moreover, loans that are extended and never paid back are also classified as equity tunneling (Jiang et al., 2010; La Porta et al., 2003). Jiang et al. (2010) and La Porta et al. (2003) find evidence of tunneling through loans in China and Mexico.

Theory behind tunneling in firms depends on separation of ownership and control (Jensen & Meckling, 1976; Johnson, Boone, et al., 2000; La Porta, Lopez-De-Silanes, Shleifer, & Vishny, 2002; Shleifer & Wolfenzon, 2002). Theory of tunneling implies that (1) tunneling decrease the value of firm (Atanasov et al., 2010; La Porta et al., 2002; Shleifer & Wolfenzon, 2002); (2) tunneling activities are directly related to expected return levels of investments in the economy (Akerlof et al., 1993; Johnson, Boone, et al., 2000; La Porta et al., 2003) (Akerlof and Romer 1993; Johnson et al 2000; La Porta, Silanes and Zamarripa 2003; Bae et al. 2012); (3) investor protection decreases tunneling (Johnson et al 2000; Shleifer and Wolfenzon 2002; La Porta et al. 2002); (4) prevention of tunneling increase scope and depth of capital markets (Shleifer & Wolfenzon, 2002).

Tunneling is mainly studied under business groups, where controlling group is more concerned for the value of the whole group instead of value of a single firm, so that a unique firm might be sacrificed for the sake of the whole group. In that sense, Bertrand et al. (2002) makes a distinction between group firms; firms with low cash flow rights and the firms with high cash flow rights. Differences in cash flow rights creates incentive for the controlling shareholder to tunnel resources from the ones that he has low cash flow right to that he has high cash flow rights. The theory proposed by La

Porta et al. (2003) shows that tunneling result in diversion of cash from firms with low cash flow rights to the firms with high cash flow rights. Pyramid ownership structures serve as an appropriate structure for that kind of preference between group firms because each firm has different cash flow rights associated with their position within pyramids.

2.5 Evidence of agency costs of concentrated ownership

Empirical studies report evidence that control cash flow wedge is associated with the firm's lower market value (Claessens et al., 2002; Connelly et al., 2012; Lins, 2003; Belen Villalonga & Amit, 2006). Panel A of Table 2 reports papers that study the link between firm value and concentration of ownership.

Claessens et al. (2002) study 1,301 firms from eight East Asian economies. They find evidence that control cash flow wedge decreases firm value. They measure firm value as market to book ratio. They show that the negative relation between firm value and the control cash flow wedge is more pronounced when the controlling shareholder is family owned business group.

Lins(2003) studies the relation between concentrated ownership and Tobin's using 1433 firms from 18 emerging markets. He finds that control cash flow wedge and control in the 5% to 20% range is also negatively related to Tobin's q.

Joh(2003) studies 5,829 firms from Korea. They affirm that both control cash flow wedge and business group affiliation is negatively related with return on assets.

Villalonga & Amit (2006) studies 508 firms incorporated in the US and listed on the Fortune 500. They investigate the impact of pyramid ownership structures and the

control cash flow wedge of the largest controlling shareholder on Tobin's q . They find that both pyramid dummy and the control cash flow wedge are negatively related to Tobin's Q .

Atanasov et al. (2010) studies the impact of change in investor protection law to firm valuation in Bulgaria. They show that change in law leads to subsequent sharp increase in value of firms that have concentrated ownership and have high risk of tunneling by their controlling shareholders. The evidence confirms that investors discount the value of firms with tunneling risk due to the higher control cash flow wedge.

Besides the impact of tunneling risk on the firm value, an important literature tries to figure out direct empirical evidence on tunneling. Panel B of Table 2 reports studies that reports direct evidence of tunneling. Papers on tunneling try to show direct evidence of tunneling by analyzing the extent of favorable treatment (in terms of price etc.) to the controlling shareholder and how this favorable treatment is related to respective cash flow rights of the controlling shareholder (Baek et al., 2006). Moreover, authors use event study methodology to figure out whether market reaction is negative for business group affiliates that subject to tunneling and positive for business group affiliates which benefit from tunneling (Bae et al., 2002).

Bertrand et al. (2002) use a sample of 18,600 firms in India between 1989 and 1999 to study tunneling. They find that compared to stand alone firms, group firms are less sensitive to industry profitability shocks. Moreover, they show that business group firms controlled through pyramid ownership structures show higher sensitivity to industry profitability shocks when compared to other business group firms. Directly controlled

business group firms show higher sensitivity to their own group's shocks. They interpret their findings as the evidence of tunneling where the earnings of the firms within pyramids are propagated to the other group firms.

Bae et al. (2002) study market reaction around 107 merger announcements in Korea between 1981 and 1997. They find positive market reaction around merger announcements for stand-alone acquiring firms. In contrast, they show that mergers within business groups lead to negative announcement returns for acquiring firms. Moreover, they show that the controlling shareholder of acquiring firms benefits from mergers within business groups because other firms in the same group realize positive market reaction around announcements. They interpret their results as the evidence of tunneling.

Baek et al. (2006) study 262 private placements of equity linked securities in Korea between 1989 and 2000. They investigate whether respective a cash flow right of the controlling shareholder at issuer and acquirer firms is important factor in setting prices. They find that in intragroup deals, prices set at premium or discount to ensure that controlling shareholder gains to the injury of minority shareholders. Moreover, they show that market rewards the group firms that gain and penalizes the group firms that loose after the deal is accomplished.

Jiang et al. (2010) using the sample of 1377 Chinese listed firms between 1996 and 2004 investigate tunneling within groups. They investigate loans reported under other receivables item in balance sheet. They find evidence of tunneling disguised intragroup loans are extended to the controlling shareholders or their affiliates. Tunneling is more

severe when control rights exceed cash flow rights. Moreover, they show lower valuations for tunneled firms. They find evidence that accounting performance of business group firms decrease sharply after the incidence of tunneling.

2.6 Financing Advantage View on Pyramid Structures

Studies on costs of business groups show pyramid ownership structures as devices to increase control for business groups and lead to expropriation of minority shareholders. Almeida & Wolfenzon (2006) propose another theory to explain the formation of pyramid ownership structures. Their motivation is that traditional agency view on pyramids cannot adequately explain the presence of pyramids. They provide following evidence to support their motivation: business groups can achieve excess control with dual class shares; in case dual class shares are restricted, the construction of pyramids might be justified but there exists no evidence on the relation between restrictions of dual class shares and pyramid ownership structures (as cited in Bianchi, Bianco, & Enriques, 2010); the separation of ownership and control achieved is not enough to justify usage of pyramid ownership structures(as cited in Franks & Mayer, 2001).

Almeida & Wolfenzon (2006)'s theory tries to explain several empirical facts regarding the usage of pyramid ownership structures in emerging markets. These are (1) the opportunity for external finance is limited; (2) limited investor protection increases cost of external finance and (3) business groups alleviate the friction in capital markets because of the resources they control and share. Almeida & Wolfenzon(2006) analyze a situation when a business group confronts with an opportunity: establishing a new firm or acquiring a firm(Firm N) with upfront investments I. The expected return from that

investment is R . The business group already has stake in a listed firm (Firm L) with α percent. Firm L has retained earnings (RE) which is under control of business group. The problem facing the business group is whether to establish the new firm under horizontal structure in which they might call for direct outside equity or under pyramid structure by controlling it through the listed firm.

Under horizontal structure, if RE is not high enough to cover I , business group requires higher amount of external finance. In that case, investors discount the price they offer for shares because of agency costs they anticipate. Therefore, business group prefers to establish Firm N under pyramid structure. Accordingly, the business group can use RE under their control and share the cost of investment in Firm N with other shareholders. As a result pyramids bring financing advantage especially if level of investments (I) high and return from investments (R) is low.

The theory proposed by Almeida & Wolfenzon (2006) does not state that there exists no financing costs associated with pyramid ownership structures. Despite, the theory accepts that in emerging markets because of low investor protection costs of external finance is high because of agency costs associated with business group control and pyramid ownership structures. Nevertheless, business groups try to assess respective financing costs associated with horizontal control and control through pyramid ownership structures. In horizontal control business groups use their share of internal funds (the portion of retained earnings from existing firms) to set up new firms and satisfy additional investment needs from additional public equity finance. In control through pyramids, business groups use all of the retained earnings in existing firms.

Therefore, in pyramids business groups require less new external finance therefore bear less financing costs.

The theory proposed by Almeida & Wolfenzon (2006) implies that the control cash flow wedge under pyramids is a result of selection effect. When firms with high financing needs are placed under pyramids, business group sells more shares. As a result, cash flow rights of the controlling shareholder might decrease dynamically for firms within pyramid structures. On the contrary, the model by Almeida & Wolfenzon (2006) also justifies the lower levels of the separation of control and cash flow depending on the financing needs of the firms within pyramid structures.

Empirical evidence for the model proposed on Almeida & Wolfenzon(2006) is multifold: Masulis et al.(2011) analyzes cross country data that consists of 45 countries. They show that existence of family business groups structured within pyramid ownership structures is closely related to lower levels of external capital availability of the country. Their evidence supports that small, high risk and capital intensive firms are the dominant motivation for pyramid structure. They state that investment intensity and firm value is independent of cash flow rights and increases as the position of the firm goes down within pyramid structure.

Almeida, Park, Subrahmanyam & Wolfenzon(2011) investigates 47 Korean groups and 1085 group firms between 1998 and 2004. They find that the firms with low profitability and non-pledgeable assets are owned through pyramids when they first enter the group, moreover, contrary to the tunneling view the profitability of firms does not decline after they are positioned within pyramids.

Bena & Ortiz-Molina(2013) investigates 82,926 new firms established between 2001-2006 in 19 European countries. They state that business groups support entrepreneur activity by facilitating establishment of new firms by alleviating financing constraints. They find that the new firms associated with pyramid structures are (1) larger; (2) less profitable at initial three years of operation; (3) has higher percentage of insider equity (highly correlated with retained earnings of parents); (4) have higher capital intensive technologies.

2.7 Formation and Structures of Business Groups in Turkey

In Turkey publicly listed firms are mostly controlled by family business groups (Colpan, 2010; Demirag & Serter, 2003; Orbay & Yurtoglu, 2006; Yurtoglu, 2000). Turkish listed firms show very high level of concentration of ownership (Orbay & Yurtoglu, 2006; Yurtoglu, 2000). Concentration of ownership in Turkish listed firms is higher compared to East Asian countries (Demirag & Serter, 2003). Yurtoglu (2000) reports that in 1998 equity held by the five largest shareholders in Turkish listed firms averages to 67.35 percent. Demirag & Serter (2003) finds equity held by five largest shareholders as 64.50 percent. Claessens et al. (2000) reports the same figure as 55 percent for East Asian countries. Orbay & Yurtoglu (2006) reports that as end of 2001, among 218 public Turkish companies, 173 firms have ultimate ownership that belongs to family business groups.

In Turkey, a typical business group shows main features of pyramid ownership structure (Colpan, 2010; Demirag & Serter, 2003; Masulis et al., 2011; Orbay & Yurtoglu, 2006; Yurtoglu, 2000). Masulis et al. (2011) investigate ownership structure of 28,635 listed

firms in 45 countries as of 2002. Their study gives an opportunity to compare Turkey with similar countries in terms of prominence of family business groups and their structures of ownership. They show that when compared to other emerging markets, in Turkey existence of family business groups and pyramid structures are significant. They report that simple average of the share of family business group firms and the share of firms in pyramid structures in publicly listed firms for 45 countries is 19 percent and 10 percent respectively. For Turkey, this ratio is 50 percent and 24 percent. Moreover, global average of pyramid layer is 0.23 whereas average pyramid layer for Turkey is 0.32.

In Turkey is that family business groups extensively use holding companies as an intermediary to control group companies (Demirag & Serter, 2003). Holding company as a stock corporation with the purpose of participating in the management of a group of companies (Orbay & Yurtoglu, 2006; Yurtoglu, 2000).

Orbay & Yurtoglu (2006) find that as of 2001, out of 218, 96 public companies directly held by holding companies. Holding companies in Turkey form a group structure similar to the Japanese keiretsu and Korean chaebols in terms of coordination of management and efficiency in allocation of resources around companies (Orbay & Yurtoglu, 2006). Moreover, in Turkey banks are also used as an intermediary for control (Orbay & Yurtoglu, 2006). Almost every bank is under a control of a family business group and they serve as the main bank of group (Orbay & Yurtoglu, 2006; Yurtoglu, 2000).

2.8 The value of bank loans

The main problem in functioning of financial markets is asymmetric information between borrowers and lenders: borrowers know more than lenders about their projects in providing future cash flows available for debt servicing (Leland & Pyle, 1977). The theory of Leland & Pyle (1977) shows that for projects of good quality to be financed, borrowers transfer information about the quality of the projects by investing their own projects. The welfare costs of taking larger equity positions in their own projects suggest that financial intermediation is a natural response to asymmetric information in financial markets.

Fama (1985) suggests that banks are special type of lenders which can access to borrower specific information in the most cost efficient way. Specialness of banks implies that bank loan deals decreases information asymmetry in financial markets because they convey important information to the outside investors about the borrower's quality. Therefore, he calls bank loans as “insider” debt.

James (1987) hypothesizes that if bank loans convey positive information regarding borrowers, borrowers should get significantly positive shareholder valuations around the days bank loan deals are announced. He finds 1.93 percent two days abnormal returns around loan announcements. He shows that when compared to loan deals, no other debt instrument brings the same positive shareholder valuations. Moreover, he shows positive abnormal returns cannot be systematically explained by other loan characteristics such as maturity and loan purpose. This evidence also proves that banks bring value to borrowers by generating new information regarding the borrowers.

Lummer & McConnell (1989) find 0.87 percent two days abnormal returns around loan announcements. They report that abnormal returns are significantly positive only if the loans are renewals. They could not find significant abnormal returns around new loans. Their finding imply that banks' information production regarding borrower accrues over time is important in how market perceives the information conveyed by loan announcements. Banks produce information through screening (Ramakrishnan & Thakor, 1984) of borrowers before loan relation starts. Moreover, the information production regarding borrower continues during the loan relation. The information produced about a borrower by the bank is reusable and durable (Chan, Greenbaum, & Thakor, 1986). The bank stores all available information and use the stored information in future loan agreements with the borrower. Therefore, by maintaining close relationships with borrowers through time, banks obtain a competitive advantage over other capital market participants in information production about the borrowers.

Nevertheless, not all loan announcement studies report positive valuation around renewals, most of studies report abnormal returns for borrowers around initiations (Billett et al., 1995; James, 1987; Slovin et al., 1992). Slovin et al. (1992) suggest that abnormal returns around announcements of loan initiations shows monitoring is the key function of banks. Bank loans convey positive information regarding borrower by showing that bank will monitor the borrower throughout the life of loan relation to prevent any type of moral hazard.

Similar studies published afterwards corroborate the value of bank loans by highlighting different aspects of the relation between banks and borrowers that conveys positive information to the market. Slovin et al. (1992) shows that that bank loans create value

for small borrowers. Their findings are especially important because they give support to the previous theory proposed by Diamond (1989, 1991b). Diamond (1989, 1991b) shows that bank loan is the most cost efficient way of financing for small firms. The higher the extent of asymmetric information that a borrower carries, the higher the cost of financing in public markets when compared to bank financing. Similarly, Best & Zhang (1993) reports the value of bank loans is higher when borrowers have high number of alternative information sources or other information sources are noisy and unreliable.

Following empirical studies show the relation between the quality of monitoring by bank and the value of information conveyed by bank loans. Billett et al. (1995) suggests that the credibility of the lender is important factor in the magnitude of the value created by bank loan deals. Preece & Mullineaux (1996) states that the value created by the loan is a decreasing function of the number of lenders. Similarly, if a loan is shared by more than one lender, Focarelli, Pozzolo, & Casolaro (2008) shows that the value created is positively related to the portion of the loan retained by the lead lender. Mosebach (1999) finds that the value created is higher if the loan size is higher. The findings by Preece & Mullineaux (1996); Focarelli et al. (2008) and Mosebach (1999) confirms that monitoring effort by each lender decreases as the number of lenders increase, as the portion of the loan retained by the lead lender decrease and the risk exposure of the lender decrease.

In accordance with the goals of this dissertation, it is important to review how the value created by bank loan deals is especially associated with the agency problem. A bank loan is the accreditation of the borrower that its future cash flows will be sufficient to

meet its debt obligations. The agency problem associated with the borrower is significant factor in the assessment of a borrower's future cash flows (Ge et al., 2012). Moreover, Jensen & Meckling (1976) proposes that in addition to bonding and residual costs, agency cost consists of monitoring costs: “The principal can limit divergences from his interest by establishing appropriate incentives for the agent and by incurring monitoring costs designed to limit the aberrant activities, of the agent.” Therefore, bank monitoring can be good a substitute of other means of monitoring incurred by the principal.

A bank as a debt holder is interested in default risk and recovery rates after default. Tunneling and other moral hazard activities of controlling shareholder increase the costs of bankruptcy of the borrower (Lin et al., 2013), impair the value of collateral and decrease the recovery rates (Akerlof et al., 1993; La Porta et al., 2003). Together with increased probability of default and decreased incidence of recovery of defaulted debt, banks incur higher effort of monitoring on moral hazard activities (Lin et al., 2013).

Lin et al. (2013) provides strong evidence on the efficiency of monitoring of agency costs by banks. They suggest that if agency costs are extreme, borrowers avoid monitoring from banks. They provide evidence that supports their monitoring avoidance hypothesis: they find that firms with higher control cash flow wedge are less likely to rely on bank loan financing. Moreover, they show that bank avoidance intensifies when these firms have higher agency costs associated with higher information opacity and higher risk.

The monitoring by banks is more valuable if the borrower has limited quality of corporate governance and weak internal monitoring system. Previous literature provides evidence that the shareholder value created by bank loans is more pronounced for the borrowers with weak controls of internal corporate governance (Byers et al., 2008). The external monitoring role established through bank loans increases the probability to becoming target and brings higher value in merger and acquisitions (Ivashina, Nair, Saunders, Massoud, & Stover, 2009).

Moreover, efficient monitoring of agency costs by banks implies that loan contract terms reflect the increased risk of moral hazard and agency problems of borrowers. Banks offer worse terms to the borrowers with fraudulent activities and misreporting (Graham et al., 2008). and to the borrowers with weak internal governance systems (Ge et al., 2012) which increases potential of moral hazard. The positive association between the strictness of loan contract terms and the borrowers' earnings management activities which can impair creditor and minority shareholder rights (Ahn & Choi, 2009).

CHAPTER III

TESTABLE HYPOTHESIS

In this chapter, I set up hypotheses to test my research questions on agency costs associated with concentrated ownership of business groups and pyramid ownership structures. In this dissertation, my first research question is whether firms controlled by business groups have higher agency costs when compared to stand-alone firms. Secondly, I ask whether control through pyramid ownership structures cause higher agency costs for business group firms. In order to make those research questions answerable, I need to reduce them into measurable variables. Therefore, I need a variable that measures the level of agency costs associated with a firm.

3.1 Abnormal returns and agency costs

With reference to Jensen & Meckling (1976), I define agency costs as the decrease in market value of the firm because of the agency problem. For a firm that bears an agency problem, investors discount the price they would accept to own shares of the firm. The decrease in price compensates for the expected future costs due to the agency problem. Therefore, analyzing agency costs requires a measure of market value. To measure agency costs some papers use different variables; such as market to book ratio

(Claessens et al., 2002; Jiang et al., 2010), Tobin's q (Atanasov et al., 2010; Lins, 2003), and market return over certain period (Lemmon & Lins, 2003).

In this dissertation, I use a similar variable based on the market valuation of firms. Loan announcements should disseminate positive information regarding agency problem of the firm. Therefore, everything else equal, the magnitude of abnormal stock returns around loan announcements should be positively related to the agency cost associated with the borrower. To this end, before setting my hypotheses, I am going to justify the relation between agency costs and the magnitude of abnormal returns around loan announcements.

3.1.1 How to interpret the abnormal returns around loan announcements?

To motivate my empirical analysis, I employ a framework in which the level of agency problem associated with each firm is the source of asymmetric information. By agency problem, I specifically mean the agency problem between the controlling shareholder and minority shareholders. In emerging markets, lower quality of disclosure standards increase the problem of information asymmetry.

Simple asymmetric information model of Akerlof (1970) implies that agency costs are higher for business group firms. Investors price each firm according to a specific distinctive attribute because they have imperfect information about the firm. In my empirical analysis, this attribute is business group control and control cash flow wedge that directly affects incentives of tunneling. With imperfect information investors cannot discriminate good type of business group firms which does not tunnel the firm.

Therefore, investors price each business group firm as if the firm has cross sectional

average of agency costs. Mitton (2002) suggests that if a business group firm is a good type, to decrease agency costs, it might reveal its type to decrease agency costs by using costly mechanisms such as good corporate governance. Nonetheless, moral hazard risks increase agency costs. Moral hazard emerges in any case investors cannot perfectly guarantee that firms will not be tunneled by the controlling shareholder.

In this dissertation, given agency costs associated with publicly listed firms in emerging markets, I hypothesize that loan market produces information regarding agency problem of firms. The evidence of abnormal returns around loan announcements suggests that bank loan announcements convey valuable information to shareholders regarding the borrower. Increase in shareholder valuation of a borrower around loan announcements is the result of accreditation of the bank in two ways: the borrower has ability to generate future cash flows which are enough to satisfy debt service obligations; or the borrower will not engage in any type of moral hazard that will risk future obligations. This argument depends on the special role of banks in financial markets. Banks are special because they produce information regarding borrowers which is not available in financial markets (Fama, 1985; Ramakrishnan & Thakor, 1984). Moreover, in financial markets, banks are the most efficient intermediary in monitoring borrowers to alleviate moral hazard (Diamond, 1984, 1991b).

3.1.2 Banks' incentives to monitor tunneling

During a period of lending relation, banks try to maximize the value of their loan portfolio considering several factors that affect this value. The main risk that decreases value of the loan is the default risk of the borrower. The default risk is based on the

probability that the future cash flows will be insufficient to meet obligations to the bank. Bank evaluates the potential of future cash flows for each borrower by considering the available information produced through screening and monitoring of operations, governance and ownership structure of borrower. Theories on agency costs of debt show that tunneling increases the default risk of the borrower, impair the value of collateral and decrease the recovery rates of defaulted debt (Akerlof et al., 1993; La Porta et al., 2003). Therefore, banks exert more effort on monitoring a borrower, if the borrower bears an agency problem between the controlling shareholder and minority shareholders.

Lin et al. (2013) provides evidence that supports banks' function in monitoring agency problem. They hypothesize that if a firm is subject to tunneling, its controlling shareholder should choose less bank financing to isolate the firm from bank monitoring. They measure tunneling risk by control cash flow wedge. They use a sample of 43,502 firm-year observations covering 20 countries from 2001 to 2010. They find that one standard deviation increase in the control cash flow wedge decreases the ratio of bank debt within total debt more than 16 percentages. Their finding is economically significant given that the mean level of bank debt to total debt ratio is 71 percent at the sample they use. Moreover, they report that the negative relation between the ratio of bank debt and control cash flow wedge is more pronounced if the firm bears higher informational opaqueness or if the firm is controlled by a business group.

Further evidence shows that banks conduct significant risk analysis, screening, and monitoring in detecting borrowing firms' agency costs. The additional costs of increased effort on screening and monitoring are reflected in financing costs (Lin, Ma, Malatesta, & Xuan, 2011). Lin et al. (2011) studies 13,331 loans extended to 3,468 firms in 22

countries from 1996 to 2008. They find that one standard deviation increase in the control cash flow wedge increases loan spread by 35 basis points which constitutes 18 percent of average spread.

Some firms have better governance in place to protect the rights of minority shareholders. Banks offer better terms to these firms because their screening and monitoring costs decrease due to lower potential for agency problems. Ge et al. (2012) study 2659 loans extended through international markets to firms incorporated in 22 countries between 2003 and 2007. They analyze the association between corporate governance and loan contract terms. They report that the change in quality of governance from the first to the third quartile is associated about a nine percent decrease in the loan interest rate over base point, 14 percent increase in the loan maturity and a 12 percent increase in the loan amount.

Moreover, banks strictly monitor financial misreporting associated with agency problems. Monitoring of financial misreporting is important because controlling shareholders might use uninformative financial reporting to avoid detection of moral hazard activities (Fan & Wong, 2002). Fan & Wong (2002) find evidence that in seven East Asian economies, the presence of the controlling shareholder with sufficient control power significantly increases financial misreporting. They measure financial misreporting by mismatch between earnings announcements and stock price return. Similarly, Graham et al. (2008) study loan contract terms of 2,451 loans in US extended between 1989 and 2004. They show how banks penalize a fraud of the borrower through financial misreporting. They find that financial misreporting by a borrower increases financing cost between .65 and .72 percent over average costs of 1.41 percent. Taken

together, monitoring by banks decreases financial misreporting as Ahn & Choi (2009) suggests. They study the US syndicated loan data of 3260 yearly observations. They report significantly negative relation between borrowers' earnings management and the strength of bank monitoring. They measure monitoring intensity of bank by using loan size and maturity of a bank loan, the reputation of a lead bank, and the number of lenders.

Taken together, the controlling shareholder is less likely to engage in tunneling at the expense of minority shareholders under screening and monitoring from the bank during loan relation. Banks should alleviate the problem of moral hazard that investors face as a result of the agency problem between the controlling shareholder and minority shareholders. Screening function of the bank pointed out by Ramakrishnan & Thakor (1984) will signal investors that the controller's current conduct of management is effectual in limiting agency costs. Similarly, monitoring function of a bank stressed by Diamond (1984, 1991b) will signal the controlling shareholder's future commitment in constraining tunneling.

As a result, controlled for other factors, positive market reaction to the new information conveyed by a bank loan will be more pronounced if the borrower bears an agency problem between the controlling shareholder and minority shareholders. I use abnormal returns around loan announcements as a measure of agency costs associated with the borrower. I base my hypothesis on this measure. Bank screening and monitoring result in positive shareholder revaluation due to decreased agency problem. Positive abnormal returns around loan announcements reflect the revaluation for business group firms that bear agency costs.

Several studies analyze the relation between agency costs and abnormal returns around bank loan announcements. Byers et al. (2008) studies 800 bank loan announcements in US market between 1980 and 2003. They analyze the quality of internal monitoring as a substitute of bank monitoring. If the firm has higher quality of internal monitoring on agency problem than the marginal value of bank monitoring is limited. They report that a one standard deviation increase in the ratio of outside directors on the board reduces the loan announcement abnormal returns by more than 50 percent. The evidence provided by Byers et al. (2008) indicates the relation between decreased agency costs due to independent boards and higher abnormal returns around loan announcements.

In the same vein, Harvey et al. (2004) reports evidence that positive abnormal returns around loan announcements is more pronounced for the firms that bear potential agency problems. They use cross country data with total number of 843 loans secured from international markets. They partition borrowers with respect to the median control cash flow wedge and compare average cumulative abnormal returns for a six-day event window. They find that borrowers with high control cash flow wedge have 1.2 percent higher abnormal returns when compared to borrowers with low control cash flow wedge. Their finding also supports the correlation between abnormal returns around loan announcements and agency problem of the borrower.

3.1.3 Why international loans are important?

Ramakrishnan and Thakor (1984) states that information provided by bank should be reliable so that it leads to the correct valuation of the firm. The theory proposed by Titman & Trueman (1986) shows firm value is an increasing function of the quality of

the auditor that the firm chooses. They define the quality of an auditor as the accuracy of the information the auditor supplies to investors. The quality of an auditor allows investors to make a more precise estimate of the firm's value. In this dissertation, I have a similar problem. A loan deal should provide qualified information so that shareholders can make a more precise estimate about the level of agency problem associated with the borrower.

In this dissertation, I study loans secured from international markets because effectiveness of monitoring of the borrower is an important factor in analyzing the magnitude and direction of the market reaction around loan announcements. Billett et al. (1995) suggest that the credibility of the bank is directly related to how market perceives its monitoring effectiveness. They study 1746 loans in US market between 1980 and 1989 to analyze abnormal returns around loan announcements. They measure credibility of the lender by the credit rating of the lender. They find borrowers' one day announcement return increases by 0.2 percent for every unit increase in credit rating of the lender. Moreover, they report borrowers' one day announcement return increases by 0.6 percent if the lender's credit rating is AAA expressed in Moody's rating standards.

In emerging markets, domestic banks might deviate from effective monitoring role as a creditor (Qian & Yeung, 2015). I define a loan deal as "inefficient lending" if the bank provides insufficient level of scrutiny of agency problem. The empirical evidence provided by Qian & Yeung (2015) indicate that in emerging markets banks continue to extend loans to the firms with high agency problem and these loans are inefficient in preventing firms from engaging in tunneling. They study inefficient lending in China between 1995 and 2009. They categorize 12,682 firm year observations into 10 quintiles

based on tunneling through loans extended to affiliated firms. They show that firms in the highest quintile of tunneling realize significantly lower market return, trading turnover, stock issuance and bond issuance than those in the lowest quintile of tunneling. The result indicates that market penalizes tunneling. On the other hand, they show that the percentage of bank loans in total financing is higher for firms in higher quintiles of tunneling. More importantly, they provide evidence that bank loans are significantly negatively correlated with profitability of firms.

In emerging countries financial markets do not show positive market reaction around announcements of loans extended by domestic banks (Huang et al., 2012). Huang et al. (2012) (2012) find that inefficient loans lead to negative abnormal returns around loan announcements. They study 424 loans in Chinese loan market between 2001 and 2006. They find that borrowers with tunneling risks realize 0.9 percent lower abnormal returns around loan announcements when compared to borrowers without tunneling risks. They measure tunneling risk as the sum of problematic transactions with other firms in the same group normalized by total assets in the year prior to the loan announcement. Moreover, they find that bank quality alleviate the problem of inefficient lending so that realized abnormal returns for each firm are 0.5 percent higher if the bank has higher quality. They measure bank quality as percentage of performing loans.

As a result, in emerging markets, loans secured in international markets are better candidates to analyze agency costs. Market perceives that an international loan market provides more efficient monitoring of domestic firms when agency problem is a concern. Harvey et al. (2004) states that international banks provide emerging market firms with more intense monitoring because they request higher financial disclosure

standards and enforce creditor rights more intensively when compared to domestic banks. Accordingly, Harvey et al. (2004) finds that 658 syndicated loans extended in international markets to emerging countries between 1990 and 1998 leads to six day abnormal returns of 0.52 percent which is significant at 1 percent level.

Moreover, Ongena & Roscovan (2013) confirm that investors value financing relations from more skilled and competitive banks. They analyze 986 announcements of bank loans to the US firms between 1980 and 2003. Their sample includes loans extended by both domestic and foreign banks. For full sample, they find two days abnormal return of 0.54 percent around loan announcements. For loans extended by foreign banks, they find higher two days abnormal return between 0.86 and 0.89 percent. They also use multivariate analysis to show that loans extended by foreign banks lead to higher two days abnormal borrower returns between 1.1 percent and 4 percent when compared to loans extended by local banks. The difference is statistically significant in all specifications.

3.1.4 Hypothesis 1

H_0 : Abnormal returns around loan announcements are insignificant since loans secured in international markets do not convey information.

H_A : Abnormal returns around loan announcements are positive since loans secured in international markets increase bank monitoring and convey positive news.

3.2 Agency costs due to business group control

Empirical evidence provided by other studies (Claessens et al., 2000; Faccio & Lang, 2002; La Porta et al., 1999; Masulis et al., 2011) suggests that in emerging markets business groups are majority shareholders because of significant level of ownership stakes they exercise on listed firms. This makes business groups as controlling shareholders which have the power to expropriate minority shareholders.

Khanna & Rivkin (2001), Khanna & Yafeh (2007), and Yiu et al. (2007) suggest that business groups control firms which are diversified in different industries and these firms act in coordination to achieve mutual interest. Therefore, business groups show a common or coordinated strategic and financial management between independent but affiliated firms (Khanna & Rivkin, 2001; Leff, 1978; D. W. Yiu et al., 2007). For instance, business groups pool the resources and distribute them internally according to the best use within group (Chang & Hong, 2000; Guillén, 2000).

The main problem between the controlling shareholder and minority shareholders in business groups is tunneling. Johnson et al. (2000) first used the term of tunneling to refer to diversion of resources out of a company to its controller shareholder. Tunneling is justified by the standard models on agency theory that depends on the separation of ownership and control. Theory of tunneling implies that incentives of tunneling by the controlling shareholder increases by separation of ownership and control of firms (Jensen & Meckling, 1976; Johnson, Boone, et al., 2000; La Porta et al., 2002; Shleifer & Wolfenzon, 2002).

Tunneling is studied under business groups, where the controlling shareholder is more concerned for the total value of their stakes at the whole group instead of value of a single firm. Bae, Kang and Kim (2002) study how market perceives tunneling risk regarding 107 acquisitions in Korea during 1981-1997 period. They find that on average minority shareholders of a chaebol affiliated bidder lose. Accordingly, they report negative 4.26 percent eleven days abnormal bidder returns around chaebol affiliated acquisitions. On the contrary, they report evidence that controlling shareholders of the chaebol affiliated bidders gain because the acquisition enhances the value of other firms in the group.

Baek, Kang and Lee (2006) studies 262 private placements of equity linked securities in Korea between 1989 and 2000. They find that chaebol firms issue private securities at a premium to other affiliated firms. They show that these transactions lead to positive net gain of controlling shareholders. Accordingly, they report 8.8 percent higher 3 days abnormal announcement returns for issuers and 5.8 percent lower 3 days abnormal announcement returns for acquirers when compared to other abnormal announcement returns around typical private issue transactions.

Jiang, Lue and Yue (2010) studies the sample of 1377 Chinese listed firms during 1996-2004 to investigate tunneling within groups. They analyze loans extended to affiliated firms which are disguised under other receivables item in the balance sheet. They report that tunneling leads 9.8 times lower market to book value than that of comparable firms. The results indicate that market valuations are lower for firms with tunneling risk when compared to firms with no tunneling risk.

3.2.1 Investor protection in emerging markets

Most of the studies focus on emerging markets when they analyze agency problem when a business group is a controlling shareholder. Previous authors study India (Bertrand et al., 2002), Korea (Bae et al., 2002; Baek et al., 2006; Joh, 2003), China (Jiang et al., 2010), Mexico (La Porta et al., 2003), Bulgaria (Atanasov et al., 2010). In emerging markets, lower quality of investor protection and corporate governance mechanisms increase the potential for tunneling, propping up and other moral hazard activities of business groups. Accordingly, Yiu et al. (2007) suggests that weak investor protection enables business groups to enjoy private benefits of control which provides an explanation for the prominence of business groups in emerging markets.

Theory shows how investor protection is negative related to tunneling incentives and agency costs (Johnson, Boone, et al., 2000; La Porta et al., 2002; Shleifer & Wolfenzon, 2002). Johnson, Boone et al. (2000), Shleifer & Wolfenzon (2002), La Porta et al. (2002) assume that investor protection increases costs of tunneling by the controlling shareholder. They show that higher costs of tunneling leads to lower incentives for a controlling shareholder to engage in tunneling. As a result, theory predicts that higher investor protection leads to lower incidence of tunneling. Moreover, Shleifer & Wolfenzon (2002), and La Porta et al. (2002) show that higher levels of investor protection lead higher market value firms and larger financial markets.

Atanasov et al. (2010) provides evidence that how strict investor protection in an emerging market decrease incidence of tunneling and increase market valuation of firms. They study the impact of change in investor protection laws in equity market of Bulgaria. They show that change in law leads to subsequent sharp increase in Tobin's q

of firms that have high risk of tunneling by their controlling shareholders. Specifically, firms with high tunneling risk realize 40 percent higher increase in Tobin's q relative to firms with low tunneling risk after law is enacted. The evidence confirms that investor protection increase the valuation of firms by limiting tunneling by the controlling shareholder.

3.2.2 Hypothesis 2

As a result of my discussion in this part, I provide null and alternative hypothesis regarding agency problems associated with business group control in emerging markets. Agency costs associated with a borrower is measured by the magnitude of realized abnormal returns around loan announcements.

In emerging markets, I need to consider benefits of business groups in alleviating costs associated with lack of markets and other institutions. Starting with Leff (2008) literature confirms that in emerging markets business groups serve as a substitute for markets. Firms affiliated with business groups have advantage in access to factors of production (Guillén, 2000; Khanna & Rivkin, 2001; D. W. Yiu et al., 2007). Therefore, business group firms in emerging markets show higher level of performance when benchmarked against stand-alone firms (Carney et al., 2009; Chang & Choi, 1988; Chang & Hong, 2000; Estrin et al., 2009; Khanna & Rivkin, 2001). The higher performance should bring investor attraction.

Besides benefits of business groups in emerging markets, market anticipates tunneling when business groups control listed firms, therefore, market have already priced in expectations of tunneling. I demarcate investor's perception towards agency costs

associated with business group firms by using information conveyed by international loan announcements.

H_0 : In emerging markets, investors anticipate no tunneling when business groups control listed firms, therefore, they have not already priced in expectations of tunneling. So, all else being equal, when firms incorporated in emerging countries secure financing from international loan markets, market reaction is not significantly different for business group controlled firms when compared to stand alone firms.

H_A : In emerging markets, investors anticipate tunneling when business groups control listed firms, therefore, they have already priced in expectations of tunneling. So, all else being equal, when firms incorporated in emerging countries secure financing from international loan markets, market reaction is significantly higher for business group controlled firms when compared to stand alone firms.

3.3 Agency costs due to pyramid ownership structures

Previous research question asks whether control by business groups leads to agency costs. In this part, I further investigate cross section variation in business group firms in terms of market perception regarding tunneling incentives. I question whether pyramid ownership structures used by business groups increase agency costs because market perceives that tunneling incentives increase within pyramid ownership structures. The

relevance of this question is related to the generic structure of pyramid structures which increases control of business groups with the same amount of ownership rights.

Pyramid ownership structures are formed if the controlling shareholder exercises control of a firm through at least one publicly listed company (La Porta et al., 1999; Masulis et al., 2011). In a pyramid structure, a firm is called bottom firm if it is controlled through at least one listed firm. For bottom firms, pyramid structure generates a wedge between control rights and cash flow rights of the controlling shareholder. Some of bottom firms might have more than one listed group firms between itself and the ultimate controller in control chain. Pyramid layer reflects the number of listed firms in the control chain in this case. Control cash flow wedge increases when pyramid layer associated with a firm increases.

The theory proposed by Jensen & Meckling (1976) implies that higher control cash flow wedge is associated with higher agency costs. Jensen & Meckling (1976) assumes that the controlling manager has perfect control over firm but her cash flow rights differ between 0-100 percent. They show that agency costs are a decreasing function of cash flow rights. Similarly, their argument implies that agency costs are an increasing function of the control cash flow wedge. Intuitively, control cash flow wedge means that the financial costs of moral hazard activities are not totally assumed by the controlling shareholder. Therefore, investors price increased incentives of tunneling accordingly for firms with higher control cash flow wedge.

Empirical evidence also finds that control cash flow wedge is associated with a lower firm value. Claessens et al. (2002) studies 1301 publicly listed companies in nine East

Asian countries by 1996 to analyze the impact of ownership structure on firm value. They find that high control cash flow wedge is associated 12.6 percent decrease in market to book values.

Lemmon & Lins (2003) studies the valuation of 800 firms in eight East Asian countries during 1998 Asian crisis. They find that the firms with high control cash flow wedge are associated with 11.6 percent lower cumulative stock returns. Lins (2003) studies a sample of 1433 firms from 18 emerging markets. They find that firms with a high control cash flow wedge have a 19.8 percent lower Tobin's q value than a firm with no control cash flow wedge. Connelly et al. (2012) study 216 listed firms in Thailand. They find that firms with high control cash flow wedge is associated with 34 percent lower Tobin's q than firms with no control cash flow wedge.

3.3.1 Hypothesis 3

As a result, if pyramid ownership structures increase tunneling incentives investors have already priced in their expectations as higher agency costs. I investigate abnormal returns around international loan announcements to show whether market reaction is positively related to bottom and pyramid layer variables. New information conveyed to the market by loan announcements should lead to higher revaluation for bottom firms and firms at higher levels of pyramid. Bottom and pyramid layer variable show the position of borrowers within pyramid ownership structures and measures the extent of control cash flow wedge. Bottom firms have higher cash flow control wedge than non-bottom firms have. Moreover, control cash flow wedge increases for higher values of pyramid layer. If, instead, pyramid ownership structures do not increase tunneling

incentives of business groups, they will lead to no agency costs. In that case, abnormal returns around international loan announcements should not be related to bottom and pyramid layer variables associated with the borrower.

As a result of my discussion in this part, I provide null and alternative hypothesis below to test whether in emerging markets business group control through pyramid ownership structures further increase agency costs. In my hypothesis, given that everything else equal, the magnitude of a realized abnormal borrower returns around announcements measure agency costs associated with the borrower.

H_0 : In emerging markets investors anticipate no tunneling when business groups control listed firms through pyramid ownership structures. So,
(a) all else being equal, financing from international loan market does not lead to significant market reaction for business group bottom firms when benchmarked against stand-alone firms and business group non-bottom firms or
(b) all else being equal, financing from international loan market does not lead to significant market reaction for business group firms in higher pyramid layers when benchmarked against business group firms in lower pyramid layers and stand-alone firms.

H_A : In emerging markets investors anticipate tunneling when business groups control listed firms through pyramid ownership structures. So,

(a) all else being equal, financing from international loan market leads to significantly positive market reaction for business group bottom firms when benchmarked against stand-alone firms and business group non-bottom firms or

(b) all else being equal, financing from international loan market leads to significantly positive market reaction for business group firms in higher pyramid layers when benchmarked against business group firms in lower pyramid layers and stand-alone firms.

3.4 Agency costs due to interaction with factors that increase tunneling incentives

In this part, I generate another hypothesis to investigate whether pyramid ownership structures increase tunneling incentives of business group controlled firms conditional on specific factors. I consider factors in which tunneling incentives of the controlling business group is significantly higher. In the presence of these factors the control cash flow wedge is more likely to result in higher incentives for tunneling. As a result, under these factors investors more likely to anticipate tunneling when business groups control listed firms through pyramid ownership structures. Therefore, I hypothesize that abnormal returns around loan announcements are higher when I interact these factors with pyramid ownership structures. Specifically, the factors I examine are the extent of control by business group, the quality of corporate governance, the information opacity, the riskiness of the borrower and economy-wide crisis. For non-financial firms I investigate profitability, long term debt and Tobin's q.

3.4.1 The voting rights of the controlling shareholder exceed 50 percent

The agency problem between a controlling shareholder and minority shareholders stem from the extent of control exercised by the controlling shareholder. If minority shareholders have higher portion of ownership stakes with respect to total equity, then they will have more voting power. Minority shareholders with higher voting power are going to be more effective in decision making process through general assembly or board of directors. Therefore, the extent of control is directly related with ownership stakes of the controlling shareholder relative to those of minority shareholders.

Claessens et al. (2002) suggests that the extent of control is quite important in analyzing the source of agency problem. They consider two types of agency problem. The first type of agency problem is between manager and shareholders. This type of agency problem is alleviated by increasing control rights of the largest shareholder. Therefore, control rights and firm value is positively related. The second type of agency problem is between the controlling shareholder and minority shareholders. This type of agency problem implies that firm value is negatively related to the control rights of the controlling shareholder. As control rights increase, controlling shareholder has more power to engage in tunneling.

Shleifer & Vishny (1997) and Claessens et al. (2002) argue that control power of large shareholders intensifies after they have sufficiently high ownership rights. After a certain level of a ownership rights, the controlling shareholder achieves almost full control of the company and it becomes easier enough to generate benefits at the expense of minority shareholders. Theory predicts that the relation between the controlling shareholder's fraction of voting rights and the firm value exhibit a concave relationship

(Stulz, 1988). Stulz (1988) shows that as a controlling shareholder's control power increases, the negative effect of agency problem between the controlling shareholder and minority shareholders starts to exceed the benefits of managerial ownership.

Morck et al. (1988) find that increase in voting rights raises the firm's value due to the alignment of incentives between management and shareholders. Nevertheless, they show that after share of voting rights gets beyond a certain point of 5 percent, the firm's value starts to fall due to the new type of agency problem emerged between the controlling shareholder and other shareholders. Same relation between voting rights and firm value is found by McConnell & Servaes (1990). They report that positive relation between voting rights and firm value is positive until the controlling shareholder has voting rights below 50 percent. After 50 percent of voting rights the relation is reversed.

Therefore, voting rights of the controlling shareholder is negatively related to the value of the firm when the conflict of interest between controlling shareholder and minority shareholders is a concern. The negative relation is more pronounced when voting rights exceeds some threshold level such as 50 percent. For that reason, if the voting right of the controlling shareholder exceeds 50 percent, control cash flow wedge is more likely to result in tunneling or other moral hazard activities. As a result, the negative effect of pyramid ownership structures on firm value should be particularly strong when the control right of the controlling shareholder exceeds 50 percent. Abnormal returns around loan announcements should be higher for the business group firms that are controlled through pyramid ownership structures if the voting rights of the controlling shareholder exceed 50 percent.

3.4.2 The firm has lower quality of corporate governance

Corporate governance means mechanisms and processes by which corporations are managed. It identifies rights and responsibilities among different stakeholders in the firm. It determines rules and procedures for taking decisions. Also, it includes mechanisms for monitoring actions, policies and decisions of the firm. Taken together, corporate governance is the effectiveness of mechanisms that minimize agency conflicts (Johnson, Boone, et al., 2000). Therefore, the quality of corporate governance is a proxy for the balance of power between minority shareholders and controlling shareholder.

Shleifer & Vishny (1997) puts the relation between corporate governance and firm valuation in concise way: “Corporate governance deals with the ways in which suppliers of finance to corporations assure themselves of getting a return on their investment”.

Gompers et al. (2003) and Bebchuk et al. (2009) confirm that the quality of corporate governance is positively related with valuation of firms. Gompers et al. (2003) generate a corporate governance index by using 24 provisions followed by the Investor Responsibility Research Center (IRRC). They suggest that corporate governance is an indicator of shareholder rights in a firm so decrease in the quality of corporate governance is directly related with increase in agency costs. They find that one-point change in their index -which reflects lower shareholder rights- is associated with a 11.4 percentage decrease in Tobin’s q. Their finding indicates that corporate governance is positively correlated with a firm value.

Bebchuk et al. (2009) generates a more focused index based on six provisions in IRRC. Their focused index handles provisions that are directly related to the control power exercised on the firm. They find that one-point change in their focused index -which

reflects lower shareholder rights- is associated with a 2.4 percentage decrease in Tobin's Q. Their evidence suggests that corporate governance brings value through constraining control power of the management.

In emerging markets, weak investor protection leads firms to increase their quality of corporate governance to decrease shareholders' concerns for expropriation by controlling shareholders (Mitton, 2002). Since the control cash flow wedge is more likely to result in tunneling, in emerging markets, for firms that have pyramid ownership structure, adoption of corporate governance practices is important.

Recent literature states that bank monitoring and internal monitoring through corporate governance are substitutes (Byers et al., 2008; Ge et al., 2012). Byers et al. (2008) studies 800 bank loan announcements between 1980 and 2003 to analyze the relation between corporate governance and announcement returns. They find that lower quality of corporate governance leads to higher abnormal returns; for instance, one standard deviation increase in the percentage of outside directors on the board reduces the loan announcement abnormal returns by more than 50 percent from its base level.

Ge et al. (2012) studies international loan market to analyze loans extended to firms incorporated in 22 countries between 2003 and 2007. They find that banks charge lower loan rates, offer larger amounts, longer maturities, and fewer restrictive covenants when the borrower has higher quality of corporate governance. They use corporate governance index provided by Institutional Shareholder Services (ISS). Their findings show that corporate governance quality decreases the monitoring effort exerted by the bank which is reflected to shared benefits of reduced cost of financing.

As a result, the negative effect of pyramid ownership structures on firm value should be particularly strong when the quality of corporate governance of the firm is low.

Furthermore, bank monitoring will be more intensive to prevent moral hazard. Taken together, abnormal returns around loan announcements should be higher for the business group firms that are controlled through pyramid ownership structures and that have low quality of corporate governance.

3.4.3 The firm has informational opacity; that is firm is small or young

Opaque firms are more difficult to monitor for outside investors. Claessens et al. (2002) suggests that older and larger firms have better disclosure and get more attention from analysts. I use both age and size as a proxy for informational opacity. If the firm is smaller in size and younger in age it is more opaque.

A cost of tunneling of the controlling shareholder is lower for opaque firms (Lin et al., 2012). As a result, informational opaqueness increases incentives of tunneling for the controlling shareholder. In this case, the negative effect of pyramid ownership structures on a firm's value should be more pronounced when the firm is opaque. Moreover, new information provided by a loan announcement brings more value if the borrower has high informational opacity. Best & Zhang (1993) implies that banks exert more intensive monitoring to firms with higher information problems. Therefore, abnormal returns around loan announcements should be higher for the business group firms controlled through pyramid ownership structures if they are small or young.

3.4.4 The firm has higher risk

Business group's cash flow rights in the group firm are important in determining the incentives of tunneling. When a firm's net value is close to negative, the controlling shareholder will have more incentives for tunneling, because all of the financial cost of tunneling will be assumed by debt holders (Akerlof et al., 1993; La Porta et al., 2003). La Porta et al. (2003) show that when the value of a firm drops below an amount that will accrue to the debt holders, the controlling shareholder tunnels resources out of the firm to other affiliated firms. Therefore, since risk increases the probability that the value of equity of a group firm drops sharply, tunneling is more likely for the firms with high risk.

Tunneling is analogous to the risk shifting (Boyd & Hakenes, 2014). Risk shifting is a type of agency problem between shareholders and debt holders in which shareholders select riskier projects with negative present value in times of financial distress risk (Jensen & Meckling, 1976). Downward risk from investments will be totally assumed by debt holders when the firm is in financial distress. Tunneling leads to a further increase in default risk and a further decrease in recovery rates of debt (La Porta et al., 2003). Therefore, control cash flow wedge is more likely to result in more intensive bank monitoring if the firm is riskier. Therefore, abnormal returns around loan announcements should be higher for business group firms that are riskier and are controlled through pyramid ownership structures.

3.4.5 There exists an economy wide crisis

Tunneling is negatively related to the expected rate of return on investments of the firm. Theory shows that increase in expected rate of return on investments increases opportunity cost of tunneling (Johnson, Boone, et al., 2000). Therefore, decrease in expected return on investments during economy wide crisis increases incentives to tunnel.

During an economy wide crisis cash flow right of the controlling shareholder is important in analyzing the firm value (Baek, Kang, & Suh Park, 2004; Johnson, Boone, et al., 2000). When the controlling shareholder owns less of the firm, then she gets increasingly lesser return on investments during an economy-wide crisis. Therefore, incentives to tunnel increase further. The value of the firm decreases further when the return of investments falls and control cash flow wedge is high (Johnson, Boone, et al., 2000).

Baek et al. (2004) studies 644 listed non-financial firms in Korea during Asian financial crisis. They show that firms with lower control cash flow wedge are associated with higher returns during the crisis. Specifically, they set November 18, 1997 (the date when the IMF proposed a rescue package to Korea) as an event day, and showed 37 days holding return around event day is 24.2 percent higher for one percent increase in ownership rights of the controlling shareholder. Moreover, Mitton (2002) studies 398 firms from five countries in Asian financial crisis. They show that one percent increase in cash flow rights of the controlling shareholder leads to 32.7 percent increase in crisis-period stock returns.

As a result, theory and empirical results corroborate that during an economy-wide crisis control cash flow wedge is more likely to result in tunneling. Therefore, the negative effect of pyramid ownership structures on firm value should be particularly strong in economy-wide crisis. In an economy-wide crisis, abnormal returns around loan announcements should be higher for the business group firms that are controlled through pyramid ownership structures.

3.4.6 Non-financial firms have higher profitability

Another interpretation of agency problem between the controlling shareholder and minority shareholders is inability of the firm in using excess cash flows the best interest of minority shareholders. With reference to Jensen (1986), I define excess cash flow as free cash flow in excess of required to fund all the projects that have positive net present value. Jensen (1986) states that payout of excess cash flow to minority shareholders might be a source of agency conflict when control and ownership rights are separated.

In case of agency conflict between the controlling shareholder and minority shareholders, firms with higher profitability have higher risk of tunneling. Profitability increases excess cash flows to be appropriated by the controlling shareholder. Bertrand et al. (2002) suggest that tunneling within a business group is propagation of cash flow from the firms that has low cash flow rights to the firms that has high cash flow rights.

Therefore, when a non-financial firm have higher profitability, the control cash flow wedge is more likely to result in tunneling. As a result, the negative effect of pyramid ownership structures on firm value should be particularly strong in case of high profitability. Abnormal returns around loan announcements should be more pronounced

for more profitable business group firms that are controlled through pyramid ownership structures.

3.4.7 Non-financial firms have lower long term debt

Firms that currently have higher long term debt are exposed to higher level of scrutinize from debt holders. Moreover, higher levels of debt increase the controlling shareholder's commitment to channel excess cash flows to debt service obligations (Friedman et al., 2003; Jensen, 1986). The controlling shareholder commits to use excess cash flow for debt repayment that otherwise would be tunneled.

Accordingly, Harvey et al. (2004) finds that level of debt decreases costs associated with the agency problem. They study 1014 nonfinancial listed firms in 18 emerging markets. They report that book value of debt over total assets is associated with higher levels of Tobin's q conditional on control cash flow wedge that increases agency problem.

Moreover, Masulis et al. (2011) studies 28635 listed firms in 45 countries. They show that debt over total assets leads to higher levels of Tobin's q .

Therefore, when the firm has low levels long term debt the control cash flow wedge is more likely to result in tunneling. As a result, the negative effect of pyramid ownership structures on firm value should be particularly strong in case of low levels of long term debt. Abnormal returns around loan announcements should be higher for the business group firms that are controlled through pyramid ownership structures if they have low levels of long term debt.

3.4.8 Non-financial firms have higher Tobin's q

Tobin's q is a proxy for growth opportunities available to the borrower (Billett et al., 1995; Byers et al., 2008; Harvey et al., 2004; Ongena & Roscovan, 2013). Firms with high Tobin's q are referred as growth firms. Growth firms are the firms that have high market value compared to book value. As Billett et al. (1995) suggests, firms with high Tobin's q have more growth options relative to their assets in place. Their performance in the past shows firms with high Tobin's q have more potential for future cash flows when compared to firms with low Tobin's q. Therefore, high Tobin's q means higher cash flows in the future to be appropriated by the controlling shareholder.

Billett et al. (1995) state firms with higher Tobin's q are harder for shareholders to evaluate because of their higher growth potential. Billett et al. (1995) also predicts that increased monitoring by a bank leads to greater revaluation for firms with higher Tobin's q. Similarly, I predict that agency problems associated with the firm undermines their growth potential. Therefore, for business group firms that are controlled through pyramid ownership structures abnormal returns around loan announcements should be higher if the borrower has higher Tobin's Q.

3.4.9 Hypothesis 4

Taken together, in this part I further analyze my research question on whether pyramid ownership structures in business group firms increase incentives for tunneling and other moral hazard activities. This further analysis considers different factors that increase incentives for tunneling. I predict that co-occurrence of these factors and pyramid structures in business groups lead to a more pronounced decrease in firm values.

Moreover, in this case banks will exert more intensive monitoring. So considering loans secured from international markets, abnormal borrower returns should be higher when pyramid structure variables and these factors interact.

H_0 : In emerging markets, investors anticipate no tunneling when business groups control listed firms through pyramid ownership structures. So, all else being equal, when a business group firm controlled through pyramid ownership structure secure financing from international loan market, market reaction is not related with following factors that further increase tunneling incentives:

- a) voting rights of the controlling shareholder exceeds 50 percent;
- b) the firm has lower quality of corporate governance;
- c) the firm bears informational opacity; that is firm is small or young;
- d) the firm has higher risk,
- e) there exists an economy wide crisis,
- f) Non-financial firms have higher profitability,
- g) Non-financial firms have lower long term debt,
- h) Non-financial firms have higher Tobin's Q.

H_A : In emerging markets, investors anticipate tunneling when business groups control listed firms through pyramid ownership structures. So, all else being equal, when a business group firm controlled through pyramid ownership structure secure financing from international loan market,

market reaction is significantly higher in the presence of following factors that further increase tunneling incentives:

- a) voting rights of the controlling shareholder exceeds 50 percent;
- b) the firm has lower quality of corporate governance;
- c) the firm bears informational opacity; that is firm is small or young;
- d) the firm has higher risk,
- e) there exists an economy wide crisis,
- f) Non-financial firms have higher profitability,
- g) Non-financial firms have lower long term debt,
- h) Non-financial firms have higher Tobin's Q.

CHAPTER IV

RESEARCH METHOD

This chapter describes research method used to test my hypotheses. First, I review prior literature on event study and explain how I compute abnormal returns around international loan announcements. Second, I develop tests I use to analyze the magnitude and direction of abnormal returns. Third, I describe the methodology I use to investigate cross sectional variation in abnormal returns. Lastly, I discuss control variables I use to isolate other factors that affect the magnitude and the direction of abnormal returns.

4.1 Measuring Abnormal Returns around Loan Announcements

In this dissertation, I use event study methodology based on Brown & Warner (1985). An event study methodology is based on several steps. First one is defining the event. Second one is defining the event window. Event window is the length of period that I calculate the abnormal returns around the event. Third one is defining estimation window to calculate the benchmark normal return. The event period is not included in the estimation period in order to isolate the influence of event on normal return estimation. Figure 2 presents the time line I use for the event study. I use 180 days (-185

through -6) for estimation window. I use the following 11 days (-5 through +5) as event period to compute abnormal returns.

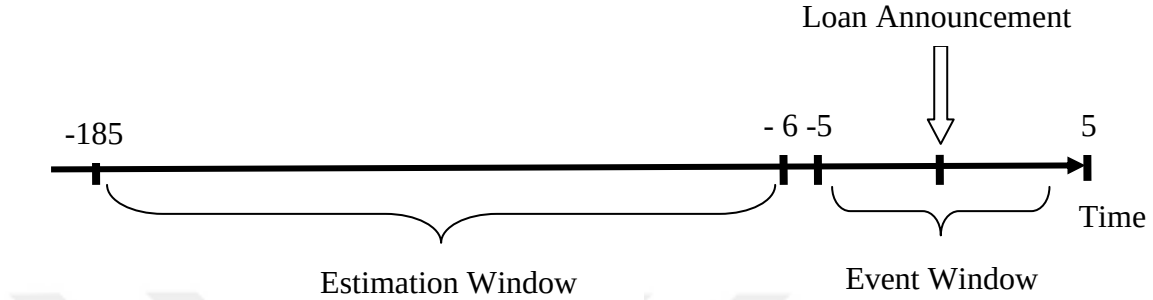


Figure 2 Event Study Timeline

This figure depicts timeline for the event study used to compute abnormal returns around international loan announcements.

Harvey et al. (2004), uses the issue date instead of the announcement date as the event date. Issue date is the date that financing amount is released and cost of financing is calculated. I follow the same approach because the issue date is the most reliable date associated with loan provided by the data.

I compute daily stock returns (R) for each day (t) by using daily closing prices (P) for each stock I as in Equation (2):

$$R_{it} = \left((P_{i,t} - P_{i,t-1}) / P_{i,t-1} \right) \times 100 \quad (2)$$

Next, using the daily returns, I estimate the dummy variable model provided in Equation (3). Karafiath (1988) proposes the dummy variable model to compute abnormal returns.

Ongena, Roscovan, Song, & Werker (2014) use the dummy variable model on a loan announcement study.

$$R_{it} = \alpha_i + \beta_i RM_t + \sum_{j \in EW} \gamma_{ij} D_j + \varepsilon_{it} \quad (3)$$

RM_t is the return on market wide index. The model includes dummy variables D_j in the right-hand side of the Equation (3). D_j equals to one in day j and equals to zero otherwise. j stands for each day in event window $[-5,5]$. i stands for stocks. The estimation of parameters in the Equation (3) provides return prediction errors in one step. The estimation of parameter γ_{ij} is equal to the estimated abnormal return for each stock i on each day of event window j . Then, cumulative abnormal returns for event window $[-5,5]$ is provided by the Equation (4).

$$CAR_{i,EW} = \sum_{j \in EW} \gamma_{ij} \quad (4)$$

4.2 Testing Statistical Significance of Abnormal Returns

I use standard parametric t test to analyze abnormal returns. I use two types of analysis. In the first one which is provided in Equation (5), I test null hypothesis that abnormal returns for a group of stocks ($i=G$) are zero. Alternative hypothesis would be abnormal returns for a group of stocks ($i=G$) are positive. Alternative hypothesis is consistent with the accreditation of the bank as a result of information production (Fama, 1985; Ramakrishnan & Thakor, 1984) and monitoring efficiency (Diamond, 1984, 1991b).

$$\begin{aligned} H_0: CAR_{i=G} &= 0 \\ H_A: CAR_{i=G} &> 0 \end{aligned} \tag{5}$$

In the second one which is provided in Equation (6), I test null hypothesis that the difference between abnormal returns for a group of stocks ($i=G$) and abnormal returns for remaining group of stocks ($i \neq G$) is zero. Alternative hypothesis would be the difference is positive.

$$\begin{aligned} H_0: CAR_{i=G} - CAR_{i \neq G} &= 0 \\ H_A: CAR_{i=G} - CAR_{i \neq G} &> 0 \end{aligned} \tag{6}$$

The parametric t-tests for each hypothesis assume that the disturbances γ_{ij} are independent and jointly normally distributed with zero mean and constant variance.

Karafiath (1988) provides proof that each disturbance γ_{ij} equal to zero, their cumulative sums are equal to zero and the difference between cumulative sum of disturbances for two different securities are equal to zero.

Moreover, Karafiath (1988) shows that variance of each disturbance γ_{ij} is equal to the variance of the residuals ε_{it} obtained from regression provided in equation (3).

Therefore, I provide correct t ratios and p-values for each hypothesis.

4.3 Modeling Cross Sectional Variation

A cross-sectional regression model is an appropriate tool when multiple hypotheses exist for the source of the abnormal return (MacKinlay, 1997). I provide three cross sectional models to investigate my three hypotheses. In each hypothesis the dependent variable is

abnormal returns around loan announcements. I aim to show how business group control and pyramid ownership structures lead to a variation in abnormal returns. On the other hand, finance theory links the magnitude of abnormal returns to loan purpose, borrower characteristics, loan terms, loan structure and lender characteristics.

4.3.1 Baseline model

I test my first hypothesis by using the baseline model. Equation (6) sets forth the baseline model:

$$CAR_i = \alpha + \beta \text{ Group}_j + X\gamma + \text{Year Fixed Effects} + \varepsilon_i \quad (7)$$

The left-hand side variable of interest is cumulative abnormal returns CAR_i for i th loan announcement. Group_j is an explanatory variable which measures business group control for the borrower j associated with loan announcement i . Group_j is a dummy variable takes value of one if the borrower is controlled by a business group. State controlled and stand-alone private controlled borrowers take value of zero. The key coefficient of interest is β which shows how business group control affects abnormal returns.

Hypothesis 1 predicts that business group control increases agency costs therefore β is positive.

X is the vector of independent variables that control for other variables that explain the magnitude of abnormal returns. I have 14 independent variables. X will be a 1×14 vector. α is the constant and γ is the 14×1 vector for the estimated coefficients. ε_i is the disturbance term with mean of zero. I assume that ε_i for each i have zero covariance with each of 14 independent variables.

4.3.2 Defining the control variables

I review the literature on bank loan announcements to identify independent variables that might explain the cross sectional variation in abnormal returns. These variables can be grouped into five: loan purpose; borrower characteristics; loan characteristics; loan structure; and lender characteristics.

4.3.2.1 Borrower characteristics

When interpreting abnormal returns, studies on loan announcements suggest that the value from a loan comes from new information provided to the market or monitoring of the bank during loan relation (Best & Zhang, 1993; Billett et al., 1995; James, 1987; Lummer & McConnell, 1989). Harvey et al. (2004) states that banks need stricter reporting requirements and exert more qualified scrutinize when a firm secures funding from international banks. Therefore, in this study I control for borrower characteristics that affect the value of monitoring effort and new information supplied by the bank. I provide variables that control for borrower characteristics, their definitions and references in Table 3.

4.3.2.1.1 Corporate governance

Intra-firm mechanisms for monitoring actions of the controlling shareholder are more efficient if the firm has higher quality of corporate governance. The role of corporate governance is a substitute of monitoring by outsiders and legal institutions (Johnson, Boone, et al., 2000; Mitton, 2002). Mitton (2002) suggest that good corporate governance convey positive information to the investors that will lead to decrease in agency costs. Byers et al. (2008) states that qualified corporate governance substitute

monitoring through bank loans. Loan announcements would add limited value to firms with good corporate governance. Accordingly, Byers et al. (2008) reports that loans extended to firms with lower quality of corporate governance lead to higher abnormal returns when compared to those extended to firms with higher quality of corporate governance. Therefore, the level of the borrower's corporate governance quality is directly related to the magnitude of abnormal returns.

Starting with Gompers et al. (2003) and Bebchuk et al. (2009) the level of corporate governance is measured by a corporate governance index. They construct corporate governance index by using provisions followed by the Investor Responsibility Research Center (IRRC). Byers et al. (2008) investigates variables separately that are directly related with corporate governance such as independent board, officer and director ownership, CEO incentive pay and institutional ownership.

In this study, to control for the quality of corporate governance I compile a dummy variable for corporate governance quality for each firm. I use "Corporate Governance Index" (XKUR) provided by Borsa Istanbul (BIST). XKUR is comprised of firms which meet at least 70 percent of the corporate governance guidelines recommended by Capital Markets Board of Turkey (CMBT). I define a dummy variable of XKUR which takes value of one if the firm is introduced in the index. If a firm takes value of one for XKUR, then I assume that the firm has good quality of corporate governance.

4.3.2.1.2 Risk

Billett et al. (1995) interprets volatility of residual returns over market model as a measure of idiosyncratic risk. They study 439 loan deals to investigate whether

idiosyncratic risk of the borrower affects abnormal returns around loan announcements. They find that one standard deviation increase in the borrower's stock return residual over market model is associated with 0.39 percent higher one day abnormal returns.

Billett et al. (1995) suggests that the positive relation between risk and abnormal returns is a result of extra effort that banks expend in producing information or monitoring regarding riskier borrowers. This interpretation is also suggested by the study of Best & Zhang (1993). Best & Zhang (1993) implies that volatility is a proxy for different indicators that bank considers when determining the intensity of evaluation for a borrower. High volatility is a bad indicator for a bank therefore it increases the bank's incentives to use more resources to further investigate the firm.

After Billett et al. (1995), Focarelli et al. (2008), Ongena & Roscovan (2013), and Li & Ongena (2015) use the standard deviation of the borrower's stock returns to control for risk measure when they study loan announcements. They report significant positive relation between stock price volatility and abnormal returns. Accordingly, I compute risk associated with each borrower using the standard deviation of the borrower's stock returns. I use previous one year as a prediction window.

4.3.2.1.3 Information opacity

Slovin et al. (1992) is the first study that investigates whether abnormal returns around loan announcements differ according to the size of borrowers. They study 676 loan announcements. They report that loans extended to small firms are associated with 1.92 percent two days abnormal returns. The result is statistically significant at 1 percent

level. Loans extended to large firms are associated with statistically insignificant 0.48 percent abnormal returns.

The findings of Slovin et al. (1992) are consistent with the predictions of Diamond (1984, 1989, 1991b) and Fama (1985). They suggest that firms with higher information asymmetry problems gain more from the private information and monitoring generated by the bank. Fama (1985) states that banks' expertise in information production makes bank loan an optimal way of financing for small firms. He also suggests that a bank loan decreases costs of information by serving as a credible signal for investors of firms with higher information problems. Diamond (1989) suggests banks bring value to financial markets because investors delegate monitoring of firms to banks, especially when information problem is high. The model of Diamond (1991) shows firms with information problem need bank financing to get credibility to decrease their costs of financing.

Starting with Slovin et al. (1992) other studies also control for size when they study loan announcements. As a proxy for size, Slovin et al. (1992) uses market capitalization; Harvey et al. (2004), Byers et al. (2008), Ongena and Roscovan (2013) and Li and Ongena (2015) uses natural logarithm of total assets; Focarelli et al. (2008) uses sales. In this study, I use total assets to control for size.

4.3.2.2 Non-financial Borrower Characteristics

4.3.2.2.1 Debt

Other loan announcement studies control for debt by using different proxies. Billett et al. (1995) uses the book value of total debt divided by the sum of debt plus the market value

of equity. Focarelli et al. (2008) uses value of debt over value of common equity. Byers et al. (2008) uses total liabilities over total assets. Ongena & Roscovan (2013), and Li & Ongena (2015) uses long term debt to total assets.

If other mechanisms are already providing monitoring, marginal value implied by the new loan will be minimal (Byers et al., 2008). Accordingly, Byers et al. (2008) and Focarelli et al. (2008) find negative relation between debt and abnormal returns. I use a long term debt over total assets to proxy for the borrowers leverage.

4.3.2.2.2 Tobin's q

Tobin's q is commonly accepted proxy for growth opportunities available to the borrower relative to assets in place (Billett et al., 1995). The firms with high Tobin's Q are referred as growth firms. Higher price associated with growth firms already reflects the market perception for their potential of growth. Billett et al. (1995) points out that the potential for growth firms is hard to evaluate. Therefore, loan announcements might lead to more positive information regarding the borrower. Accordingly, I use Tobin's q (the ratio of the borrower's book value of debt plus market value of equity to its total assets) to proxy for the borrower's growth opportunities.

4.3.2.2.3 Profitability

Starting by Billett et al. (1995) previous literature uses profitability as a proxy for the borrower's creditworthiness (Byers et al. 2008; Ongena and Roscovan 2013; Li and Ongena 2015). Therefore, Byers et al. (2008), Ongena and Roscovan (2013); Li and Ongena (2015) find negative association with profitability and abnormal returns. Accordingly, I control for profitability.

4.3.2.2.4 Tangible Assets

Harvey et al. (2004) suggest that tangible assets proxy for base of assets in place that the controlling shareholder can exploit. Theories proposed by Jensen (1986); Bolton & Scharfstein (1990), Hart & Moore (1998) implies that assets in place generate cash flow that can lead outright diversion of the resources of the firm(cited in Harvey et al., 2004). Therefore, benefits of external debt is greater for firms with higher levels of if tangible assets over total assets.

Qian & Yeung (2015) study 15,692 firm-year observations in China from 1995 to 2009. They find that tangible assets are positively related with tunneling activities of firms through intragroup loans disguised in financial statements. Firms convert tangible assets to excess cash flow through inefficient bank loans. Subsequently, they divert the excess cash flow to their affiliated firms.

4.3.2.3 Loan characteristics

Under group of loan characteristics I consider the purpose of the loan, the amount and the maturity. Moreover, I consider whether the loan is secured or not and whether the loan is credit line or term loan. I provide variables that control for loan characteristics, their definitions and references in Table 4.

4.3.2.3.1 The purpose of the loan

James (1987) investigates whether cross sectional differences in abnormal returns around loan announcements is related to differences in purpose of the borrowing. He classifies loan announcements into five categories of purpose: capital investment, general corporate purposes, restructuring, debt repayment, no purpose identified. He

suggests that this classification reflects different types of new information provided to the market by bank loans therefore leads to differentiated market perception regarding the amount of future cash flows. Considering the sample of 80 bank loans, he finds that abnormal returns are positive for all groups but general corporate purposes and debt repayment leads to higher abnormal returns around loan announcements when compared to other types of loan purpose. He suggests no theoretical explanation.

Slovin et al. (1992) study 273 credit agreements in US between 1980 and 1986. They find 1.76, 1.31 and 1.05 percent two days announcement returns for debt repayment, general corporate purposes and no purpose group. Moreover, Boscaljon & Ho (2005) study 128 loan announcements in four Asian countries between 1991 and 2002. They find 1.02, 1.86 and 1.81 percent significant two days abnormal returns for capital investment, restructuring and no purpose group respectively.

Accordingly, I control for loan purposes by generating five exhaustive dummy variables that categorize loan announcements according to the purpose of the loan. Nevertheless, previous empirical evidence reports mixed results for each category that represents the purpose of a loan.

4.3.2.3.2 The size of the loan

Previous loan announcement studies control loan size in multivariate analysis of abnormal returns around loan announcements (Billett et al., 1995; Focarelli et al., 2008; Li & Ongena, 2015; Ongena & Roscovan, 2013; Slovin et al., 1992). Li & Ongena (2015) finds that one percent increase in loan size leads to 0.015 percent increase in four

days announcement returns. The impact of loan size is statistically significant at 1 percent level.

The relation between loan size and the magnitude of abnormal returns is a result of the relation between intensity of prudential risk management and risk exposure for banking firms. A bank devotes more effort in monitoring borrowers when loan size is higher. Theory argues that the size of the loan signals banks' incentives to monitoring therefore decreases borrowers' incentives to misreporting (Khalil & Parigi, 1998). In syndicated loan market, monitoring effort shared by lenders is measured by number of lenders and portion of the loan assumed by the arranger. Therefore, if the borrower is riskier syndicated loans will be more concentrated and arrangers will retain higher portion of the loan. Lin et al. (2012) studies 14,350 syndicated loans in 22 countries between 1996 and 2008. They investigate syndicate structure to analyze tunneling risk associated with borrowers. They measure tunneling risk by control cash flow wedge. They find that one standard deviation in control cash flow wedge reduce number of lenders by 21 percent and increase portion of lead lender from 57 percent to 64 percent.

Best & Zhang (1993) suggests that the magnitude of abnormal returns around loan announcements positively related with monitoring effort exerted by bank. Therefore, as Li & Ongena (2015) finds out, I expect higher abnormal returns around loans that have higher size. Accordingly, I control for size of the loan measured in million USD.

4.3.2.3.3 The maturity of the loan

Previous literature suggests that the maturity of a loan is related to the borrower characteristics such as information asymmetry, credit quality, growth opportunities and

risk. These characteristics are directly related with abnormal returns around loan announcements.

Theoretical model proposed by Flannery (1986) focuses on information asymmetry between the lender and the borrower. He shows that firms with good credit quality get shorter maturities to signal their quality in order to decrease their financing costs.

Barclay & Smith (1995) empirically studies the factors that affect loan maturity by using the sample of 39,949 firm-year observations between 1974 and 1992. They find that debt maturity is negatively correlated with borrowers' growth opportunities and size. Their findings show that firms with larger information asymmetries issue more short-term debt.

Moreover, Diamond (1991a) proposes a nonlinear relation between credit quality and debt maturity. They argue that firms with sufficiently good quality will anticipate new information in the future. In order to get cheaper financing in the future these firms prefer short maturities. For firms with lower quality, equilibrium maturity is negatively related to the default risk of the firm. Riskier firms get shorter maturities because higher maturity increases the default risk for the bank. As a result the credit quality and the maturity will have non-linear relationship.

James (1987) discusses the impact of maturity on abnormal returns. First, he suggests that long term debt is riskier than short term debt. Therefore, long term debt will signal positive information considering the monitoring effort supplied by the bank. Second, he suggests that in each debt issue the bank evaluates the firm's performance again.

Therefore, shorter maturities reflect the borrower's commitment to limit agency costs

until next period and to accept new evaluation from the bank under renewal of debt.

Therefore, short term debt signal positive information about the firm.

I consider the maturity of the debt might affect abnormal returns through its relation with borrower characteristics. Previous literature has mixed predictions regarding the relation between magnitude of positive abnormal returns and maturity choice. Loan announcement studies uses maturity to control for abnormal returns (Billett et al., 1995; James, 1987; Slovin et al., 1992). They present no justified significant results.

Accordingly, I control for maturity. Not to lose observations, if an observation specifies no maturity, I consider it as short term. I generate a dummy variable of short term which is equal to one if the maturity of the loan is shorter than one year and no maturity is specified.

4.3.2.3.4 Whether the loan is secured

Theory argues that the pledge of collateral against debt is related to the nature of asymmetric information between the bank and the borrower. There exist two different types of theoretical arguments regarding adverse selection and moral hazard. Adverse selection and moral hazard models have different predictions regarding the relation between risk of the borrower and the incidence of collateral pledge.

Adverse selection models (Besanko & Thakor, 1987; Bester, 1987) suggests that less risky firms offer collateral to signal their type to the bank in order to get lower financing costs before establishment of the loan deal. Therefore, riskier firms are associated with less collateral.

Moral hazard models (Boot, Thakor, & Udell, 1991; Holmstrom & Tirole, 1997; Stulz & Johnson, 1985) propose that collateral mitigates risk taking incentives of borrowers after the establishment of loan deal. Therefore, riskier firms are associated with more collateral. Another important implication of moral hazard models is that banks substitute the collateral by their commitment to monitor borrowers. Therefore, if no collateral is pledged, loan deal conveys stronger information that bank will monitor the borrower more intensively.

Therefore both models predict that pledging collateral will affect abnormal returns through credit quality of the borrower or monitoring effort of the bank. Loan announcement studies such as Lummer & McConnell (1989); Slovin et al. (1992) uses maturity to control for abnormal returns. Lummer & McConnell (1989) reports evidence that realized abnormal returns around unsecured loans is higher than those around secured loans; average abnormal return around unsecured loans is 2.5 percent which is statistically significant whereas average abnormal return around secured loans is 1.1 percent which is not statistically significant. Accordingly, I use a dummy variable which equals to one if the loan is secured.

4.3.2.3.5 Whether the loan is credit line

In a credit line, a bank commits that it will provide finance in the future at pre-determined terms (Berger & Udell, 1995). This commitment is like a put option sold by the bank which enables the borrower to get finance anytime with predetermined rate. Therefore, credit line signals that bank monitors the borrower continuously throughout the life of the commitment.

Moreover, credit lines are formalization of durable past relationship between the bank and the borrower (Berger & Udell, 1995). Therefore, credit lines are mainly based on softer information than ordinary term loans (Chakraborty & Hu, 2006). Complex pricing fee structure and escape clauses of credit lines shows that credit lines require more specific information pertinent to the borrower (Shockley & Thakor, 1997). As a result, relationship driven credit lines convey more valuable information to the market because they show lower information asymmetry between the bank and the borrower.

Therefore, both monitoring and information impact predicts that credit lines lead to higher abnormal returns when compared to term loans. Lummer & McConnell (1989) finds that credit lines are associated with significant 1.05 percent higher abnormal returns. Loan announcement studies such as Slovin et al. (1992), and Li & Ongena (2015) controls for credit lines. Therefore, I control for credit line type of loans by using a dummy variable.

4.3.2.4 Loan structure

I define the loan structure variables as those are related to the number of lenders, the share retained by lead lenders in a syndicate and whether the loan is subsequent loan of the borrower in international loan market. I provide variables that control for loan structure, their definitions and references in Table 5.

4.3.2.4.1 Number of lenders

In international loan market, loan deals are classified by considering the number of lenders. In syndicate loans two or more lenders jointly lend to a borrower (Dennis & Mullineaux, 2000). Previous studies on loan announcements use syndicate dummy to

control for the magnitude of abnormal returns (Li & Ongena 2015). The impact of number of lenders on abnormal returns around loan announcements firstly studied by Preece & Mullineaux(1996).

Preece and Mullineaux (1996) predict that the size of the abnormal return around loans is smaller for syndicated loans. Their main idea is syndicated loans are somewhere in between typical private bank loan and public debt. They state the ability to renegotiate the loan agreement is an important factor that demarcates a loan agreement from a public debt. This is because renegotiation depends on specific information regarding the borrower. Therefore, renegotiation ability reflects the specialty of the bank in obtaining insider information. In syndicated loans, renegotiation of the loan is harder because each lender pursues different incentives and a common decision to renegotiate should satisfy all of the lenders unanimously. That makes syndicates closer to public debt as number of lenders increase. Therefore the value of information conveyed to the market around syndicated loans is smaller than other loans.

Preece and Mullineaux (1996) study 446 loan announcements between 1980 and 1986 in US. They find that non-syndicate loans are associated with statistically significant 1.8 percent two days abnormal returns. Smaller syndicates with up to three lenders realize statistically significant 1.4 percent two days abnormal returns. They report that for larger syndicates over 3 lenders statistical and economic significance of abnormal returns disappears. Accordingly, I use a dummy variable that equals to one if the loan has two or more lenders.

4.3.2.4.2 The share retained by lead lenders

In a syndicate structure, each bank is a direct lender but there is only a single loan agreement. Therefore, role of a lead lender in a syndicate structure is quite important.

Dennis & Mullineaux (2000) states that lead lenders are agents of other lenders in syndicates; lead lenders manage the loan agreement for other lenders, negotiate the agreement, coordinate required documentation process, close the loan and direct the repayments.

In syndicated loans, primary responsibility of investigation, screening and monitoring of borrowers is assumed by lead lenders (Sufi, 2007). Therefore, Sufi (2007) predicts that when the borrower requires more intensive monitoring lead lenders retain larger share of the loan. He analyzes 12,672 syndicated loans between 1992 and 2003. He finds that the portion of syndicate retained for the opaque borrowers is significantly higher for transparent borrowers. Specifically he finds that lead lenders retain 15.2 percent and 43.5 percent of the loans extended to the most transparent and the most opaque borrowers respectively. His findings suggest that the percentage of the loan retained by lead lenders shows the need for due diligence of the borrower and the monitoring effort exerted by lenders.

Focarelli et al. (2008) predict that share retained by lead lenders implies higher monitoring of the borrower therefore other lenders decrease the financing cost they demand. They study 14,121 credit facilities globally between 1990 and 2001. They find that one point increase logarithm of the share of the facility retained by the lead lender leads to 7.4 bps decrease in spread over LIBOR. The impact of the share retained by lead lender is statistically significant at 1 percent level. Their finding corroborates the

certification effect of additional monitoring effort due to the higher share retained by lead lenders.

Focarelli et al. (2008) suggest that the certification effect of monitoring will lead to higher abnormal returns around loan announcements. They test this prediction by using 1003 loan syndicates. They find that one point increase logarithm of the share of the facility retained by the lead lender leads to 0.55 percent increase in one day abnormal returns around loan announcements. Their findings indicate that higher share retained by lead lenders result in more affirmative information regarding borrower in the stock market. Accordingly, I control for share retained by lead lenders. For non-syndicates, I use 100 percent as the share retained by the lender.

4.3.2.4.3 Whether the loan is subsequent

A borrower's previous loan relation in international markets might lead to variation in the magnitude of abnormal returns. The study of Lummer & McConnell (1989) report positive abnormal returns around loan announcements are mostly attributable to loan renewals. They suggest that established relations with the bank throughout previous loan relations decrease information asymmetry between the bank and the borrower.

Therefore, they predict that loan renewals lead to higher abnormal returns because renewals means that the bank knows the borrower better and yet the borrower is credible to generate future cash flows to satisfy debt service requirements. They find that positive abnormal returns around loan announcements are mostly driven by renewals.

By contrast, Billett et al. (1995) studies 1,468 loan announcements between 1980 and 1989. They find no difference between abnormal returns associated with new loans and

renewals. Moreover, Slovin et al. (1992) studies 273 loan announcements between 1980 and 1986. They find that renewals increase the magnitude of abnormal returns by 0.3 percent but this impact is not statistically significant.

Harvey et al. (2004) studies 168 initial and 489 subsequent loan offerings in international loan market between 1990 and 1998. They find that subsequent loans lead to 1.61 percent higher six day abnormal returns when compared to initial loans. The difference is statistically significant at 1 percent level.

Accordingly, I control for borrowers' previous loan relations in international markets. I generate a subsequent dummy variable takes value of one if the borrower gets another loan from international market in previous five years.

4.3.3 Lender characteristics

The evidence of abnormal returns around loan announcements suggests that bank loan announcements convey valuable information to the shareholders regarding borrowers. The value of new information provided by loans depends on the information asymmetry between the bank and the borrower. Market perception around loan announcements increases as information asymmetry between the bank and the borrower decreases. Banks generate specific, proprietary and reusable information about borrowers over time through repeated relations with them (Boot, 2000; Petersen & Rajan, 1994). Therefore duration of relationship is beneficial in decreasing the asymmetric information between the bank and the borrower.

When a borrower from a niche emerging country gets a loan from international market, the past experience of the lender towards the emerging country might affect the magnitude of abnormal returns. A loan decision by an experienced lender about emerging country will signal more positive information about a borrower from this market. Billett et al. (1995) suggests that the credibility of the lender is important to convey positive information to the market. Nevertheless, I assume that credibility of a lender operates in international loan market does not vary considerably around each observation. Therefore, I control for the past experience of the lender in emerging market which complements the credibility of the lender by bringing additional value. This additional value can be observed as a higher magnitude of abnormal returns around loan announcements.

The benefit of past lending experience depends on the soft information produced by the bank through the relationship with other actors in the emerging country. Hard information is in form of financial statements, credit ratings, and credit scorings which are easily transferable across lenders (Petersen, 2004). On the contrary, soft information is the information that is not in standard form and can be obtained from economic actors by relations throughout time (Berger & Udell, 2002). For emerging markets soft information produced by banks has considerable value beyond hard information to deal with information opacity problems (Berger & Udell, 2002).

I provide variables that control for lender characteristics, their definitions and references in Table 6. I reference De Haas & Van Horen (2013) to set up my variables regarding lending experience in Turkey. De Haas & Van Horen (2013) uses loan level data to analyze how international banks reduced their cross-border lending after the break of US

financial crisis in 2008. They hypothesize that past cross border relations of international banks are influential in their decision to cut their lending to a country. They suggest that past lending experience give them more market power and ability to incur lower financial cost to borrowers. They find that international banks reduce less credit to markets in which they have more past lending decision and they have a subsidiary.

I import two variables De Haas and Van Horen (2013) to control for the magnitude of abnormal returns. First one is the experience variable. They compile this variable by using number of loans provided by international bank between 2000 and 2006. I edit this variable by considering total amount of loans extended by the bank in last five years. For syndicated loans, I consider amount extended by the lead lenders in last five years. The second one is the subsidiary dummy variable which is equal to one if the international bank owns a bank subsidiary in the country. Similarly, I compile a variable if the bank has a subsidiary in emerging market which is active at the date of issue of the loan.

4.3.4 Times Series variation in abnormal returns

Recent literature states that time series variation is informative in explaining the variation in abnormal returns around loan deals. Banks' lending standards and monitoring effort in booming periods soften due to benign macroeconomic conditions (Maddaloni & Peydró, 2011). Maddaloni and Peydró (2011) studies bank lending surveys for Euro area and for the US between 2002 and 2008. From surveys they generate a variable that shows the percentage of banks that decrease lending standards. They link the lending standards variable to the short term interest rates which identifies booming and contraction through standard monetary policy choices. They find that 20

percent of banks decrease their lending standards for each point decrease in short term rates.

On the other hand, under contraction and especially during crisis times, banks reset to their efficient lending and monitoring role. De Haas & Van Horen (2013) provides evidence that during crisis international banks do not lend to the jurisdictions that are not close to them and they have no past experience. They suggest that increased importance of screening and monitoring of borrowers during a crisis makes them abstain from lending if they cannot perform efficient due diligence.

Accordingly, loan announcement studies find that abnormal returns varies across boom and contraction(crisis) periods. Boscailon and Ho (2004) finds evidence that for four Asian countries, positive abnormal returns for bank loans are more pronounced after 1998 Asian crisis when compared to pre-crisis period. Li & Ongena (2015) test the difference between the quality of bank monitoring in booming and contraction periods. They suggest that the magnitude of abnormal returns around loan announcements will reflect differences in monitoring quality of banks across the cycle. They analyze 1000 syndicated loans from US for two different periods. First one is the boom period between 2005 and 2007. Second one is the crisis period between 2007 and 2009. They find that the difference between abnormal returns in crisis period and abnormal returns in boom period is positive and statistically significant for all event windows. For instance, they report that the difference between event day abnormal returns 1.1 percent.

Accordingly, I control for time series variation in abnormal returns by using year fixed effects in empirical strategy. Year fixed effects is especially used to control for the impact of the global crisis on abnormal returns around loan announcements.

4.4 Model on the impact of pyramid structures

I test my second hypothesis by using the model in which explanatory variables shows the position of the borrower in a pyramid structure such as bottom and pyramid layer. Equation (8a) and (8b) set forth models I use.

$$CAR_i = \alpha + \beta \text{Bottom}_j + X\gamma + \text{Year Fixed Effects} + \varepsilon_i \quad (8a)$$

$$CAR_i = \alpha + \beta \text{Pyramid Layer}_j + X\gamma + \text{Year Fixed Effects} + \varepsilon_i \quad (8b)$$

In Equation (8a) and (8b) the left-hand side variable of interest is still cumulative abnormal returns CAR_i for i th loan announcement. Bottom_j and Pyramid Layer_j are explanatory variables which measures the position of borrower j within pyramid structure. Bottom_j and Pyramid Layer_j are associated with potential agency problem. Bottom_j is a dummy variable takes value of one if the borrower is controlled by a business group through a pyramid structure (in other words there exists at least one listed firm between the borrower and its ultimate controller). Pyramid Layer_j variable is an integer that shoes number of listed firms between the borrower and its ultimate controller. If the borrower does not have pyramid ownership structure both Bottom_j and Pyramid Layer_j takes value of zero.

In both models, key coefficient of interest is β which shows how business group control through pyramid structure affects abnormal returns. Higher values of Bottom_j and Pyramid Layer_j lead to higher control cash flow wedge of the controlling shareholder. Hypothesis 2 predicts that bottom and pyramid layer is associated with higher agency costs, therefore β is positive.

For each model, X is the vector of independent variables that I use in the baseline model. X will be a 1×14 vector. γ is the constant and β is the 14×1 vector for the estimated coefficients. ε_i is the disturbance term with mean of zero. I assume that ε_i for each i has zero covariance with each of 14 independent variables.

4.5 Model tests interacted variables

My third hypothesis investigates whether interaction of pyramid structure with factors that increases tunneling incentives are associated with higher abnormal returns. If the negative effect of pyramid ownership structures on firm value is due to increased incentives of tunneling, then decrease in firm value should be greater in the presence of other factors that increase tunneling incentives. To investigate the agency costs associated with pyramid structures through this mechanism, I provide models that test Hypothesis 3 in Equation (9a) and (9b).

$$\begin{aligned} CAR_i = & \alpha + \beta_1 (\text{Bottom}_j * \overline{F}) + \beta_2 (\text{Bottom}_j * \underline{F}) \\ & + \lambda F + X\gamma + \text{Year Fixed Effects} + \varepsilon_i \end{aligned} \quad (9a)$$

$$CAR_i = \alpha + \beta_1 (\text{Pyramid Layer}_j * \overline{F}) + \beta_2 (\text{Pyramid Layer}_j * \underline{F}) + \lambda F + X\gamma + \text{Year Fixed Effects} + \varepsilon_i \quad (9b)$$

In Equation (9a) and (9b), the left-hand side variable of interest is CAR_i which is cumulative abnormal returns in event window $[-1;0]$ for i th loan announcement. Bottom_j and Pyramid Layer_j are explanatory variables which measures the position of the borrower j in a pyramid structure associated with loan announcement i .

In the model, I identify three variables F , $\overline{F}$ and $\underline{F}$ which relate to factors that increase incentives of tunneling. Models specified in Equation (9a) and (9b) conduct empirical analysis by splitting the sample into $\overline{F}$ and $\underline{F}$ along dimensions related to the factors that increase tunneling incentives. I hypothesize that the impact of pyramid structures on realized announcement abnormal returns will be significantly positive. My empirical strategy is to split this impact into two to show whether interaction of pyramid structure and factors that increase tunneling lead to more pronounced abnormal returns. Those factors are:

- a) the control right of the controlling shareholder exceeds 50 percent;
- b) the firm has lower quality of corporate governance;
- c) the firm bears informational opacity; that is firm is small or young;
- d) the firm has higher risk,
- e) there exists an economy wide crisis,
- f) Non-financial firms have higher profitability,
- g) Non-financial firms have lower long term debt,

h) Non-financial firms have higher Tobin's q.

To test hypothesis three, I partition the sample by using variables associated with each factor into upper and lower values. F is the variable that is related to the factor. F controls for the variation in abnormal returns around loan announcements.

$\underline{F}$ and $\overline{F}$ are variables that relates to partitioned subsamples which interacts with bottom and pyramid layer variables. I generate $\underline{F}$ and $\overline{F}$ by using the following procedure: if the variable F that is related to the factor is a binary variable, the observations with " $F=0$ " forms the first subsample; the observations with " $F=1$ " forms the second subsample. The partitioning is not necessarily balanced if the target variable is binary. If the variable F that is related to the factor is continuous, I split the observations by using a threshold value. For example, if I use threshold as the median value of the variable F , the observations with factor variable $F < \text{median}(\text{variable } F)$ forms the first subsample; the observations with variable $F > \text{median}(\text{variable } F)$ forms the second subsample. Subsequently, I estimate the interaction of partitioned samples with the bottom and pyramid layer variables.

Firm specific factors, partition variables and predictions consistent with Hypothesis 3 are provided in Table 7. In both models, β_1 and β_2 are key coefficients of interests which show whether the effect of Bottom_j and Pyramid Layer_j on abnormal returns is influenced by factors that increase agency costs. Hypothesis 3 predicts that the difference between coefficients is positive when upper values of the factor increases agency cost and the difference between coefficients is negative when lower values of the factor increases agency cost. Table 7 provides predictions of Hypothesis 3 through

variables and estimated coefficients of models in Equation (9a) and (9b). The last column of the Table 7 provides the prediction of Hypothesis 3 on the difference between β_1 and β_2 considering the level of agency costs associated with the upper and lower values of the factor.

For each model, X is the vector of independent variables that I use in the baseline model.

I assume that ε_i for each i have zero covariance with each of independent variables.

4.6 Estimation of multivariate models

I estimate each multivariate regression model by using ordinary least squares. In each model, all standard errors are heteroskedasticity robust. Petersen (2009) points out that residuals are correlated across firms in panel datasets used in empirical studies in corporate finance literature. He shows that in that case ordinary least squares standard errors can be biased. He suggests that standard errors clustered at firm level are unbiased and produce correctly sized confidence intervals. Therefore, I use standard errors clustered at firm level. Using only heteroskedasticity robust standard errors yields almost identical results as the clustering on firm approach, but some of the coefficients lose statistical significance.

CHAPTER V

SAMPLING FRAMEWORK

The data set used in this dissertation is compiled from four main sources. The first one is DEALSCAN which is the database provided by Thomson Reuters. In this dissertation, my observation unit is loan. Loan deal data come from DEALSCAN. The second one is ORBIS which is the database provided by Bureau Van Dijk(henceforth BvD), that covers firm-level ownership data on 1,152,823 Turkish firms. Third one is FINNET which provides accounting statements for Turkish listed firms. The fourth one is BLOOMBERG which provides stock price data for Turkish listed firms.

5.1 Using ORBIS to portray ownership structure

First, I compile a list of the largest business groups that are incorporated in Turkey. I hand collect the list of business groups using four sources. (1) Colpan (2010) provides names of 50 largest business groups by number of employees in 2005. (2) Dirlik (2014) lists the names of 140 business groups as of 2010 that owns the largest firms. Largest firms are identified by using İstanbul Chamber of Trade's the largest 1000 industrial firms and Fortune 500 Turkish firms. (3) Turkish "Ekonomist" journal gives the names of the wealthiest 100 families and the names of associated groups each year¹. I end up

with 287 business groups. Using the official site of each business group, I compile affiliated firms and family members for each group.

I compile annual ownership structures for each firm in a business group using ORBIS database. ORBIS provides ownership data for end of each year stating from 2003 and ending in 2016. Ownership data enables me to identify control chain for each business group by using affiliated firms and family members that I compiled for each group. I use 10 percent ownership stake for cut off threshold for control. Cutoff threshold determines the criteria for ultimate control. If a business group exercises 10 percent or more ownership stakes on a firm, than I call that the business group controls the firm. 10 percent cut off threshold is used by other papers that investigates ultimate control such as La Porta et al. (1999); Claessens et al. (2000); and Faccio & Lang (2002).

This procedure also enables me to identify firms that are indirectly controlled by a business group. A business group has indirect control over a firm, if it controls the firm through other affiliated firms (La Porta et al. 1999). A business group indirectly controls a Firm A if it controls Firm B which in turn controls Firm A.

Using control information for each firm, I classify group firms into two categories. First are firms that are controlled within pyramid ownership structure. I identify pyramid ownership structures by figuring out each affiliated firm that is controlled through a listed group firm. Within pyramid structures, I generate two variables. Dummy variable, bottom, takes value of one if the firm is controlled through at least one publicly listed company. Pyramid layer is the number of publicly listed companies between the firm and its ultimate controller. Second are firms that are controlled within horizontal

ownership structure. I define horizontal structure as an ownership structure in which a business group controls a firm directly (Masulis et al. 2011) or indirectly through a private affiliated firm. Therefore, horizontal ownership structures are the remaining ownership structures that are not classified as pyramid ownership structures.

The number of unique firms in the ownership structure sample is 5348. The total number of yearly observation of firms is 47,622. In the ownership structure sample, 7.3 percent of the firms are publicly listed firms. 29.3 percent of the firms are bottom firms. The remaining 70.7 percent of firms are horizontally controlled. The average pyramid layer is 0.42.

Table 8 reports annual descriptive statistics of firms in the ownership structure sample at business group level. Descriptive statistics for each variable are calculated by examining averages across business groups. The total number of business groups in the sample varies from 250 to 284 from 2003 to 2016. The average number of firms for each group increases from 8 to 18 when we go further from 2003 to 2016. The reason might be the size of business groups in terms of affiliated firms increases each year. Alternative explanation is the quality of the data provided by ORBIS increases each year. On average, there exists at least one publicly listed firm for each group. As the group size increases by time, pyramid ownership structures become more prominent. The number of bottom firms increases from 1 to 6. Average pyramid layer increases from 0.1 to 0.3.

In order to identify the extent of control that business group exercises on each affiliated borrower, I use the float rate associated with each borrower on issue date of associated loan. I obtained float rate data from Central Securities Depository of Turkey. Float rate

is defined as the percentage of ownership stakes at the hands of minority shareholders. Therefore, “1 - Float rate” gives direct voting rights exercised by the controlling shareholder exercised on the firm. I measure the extent of control by “1 - Float rate”.

5.2 Using DEALSCAN to identify loan announcements

I compile the sample of loan deals using DEALSCAN. My sample consists of 1076 loan deals that are extended to both private and publicly listed borrowers that are incorporated in Turkey between 25.06.1990 and 19.07.2016.

Loans in the sample might contain more than one tranche. Tranches are portions of a loan offered at the same issue date. Tranches can differ according to the maturity, size and other characteristics. In this dissertation I make a deal-level analysis. Sufi (2007) suggest that a deal-level analysis is more appropriate than a tranche-level analysis, because although there can be many tranches there is only one contract between the firm and lenders at the loan level. For a loan announcement study treating each tranches separate is impossible because each tranche has same issue date and the effect of each tranche on abnormal returns is impossible to figure out.

In this dissertation, my empirical strategy is regressing cumulative abnormal returns of each loan deal with the variables that measures group control and pyramid ownership structures. Therefore, I associate measures of business group control and ownership structure with borrowers of loan deals. I match each loan deal with the ownership structure sample I compiled for Turkish business groups by using borrower information.

The ownership structure sample covers the period between 2003 and 2016. This restriction yields 646 loan deals which are issued between 12.03.2003 and 19.07.2016.

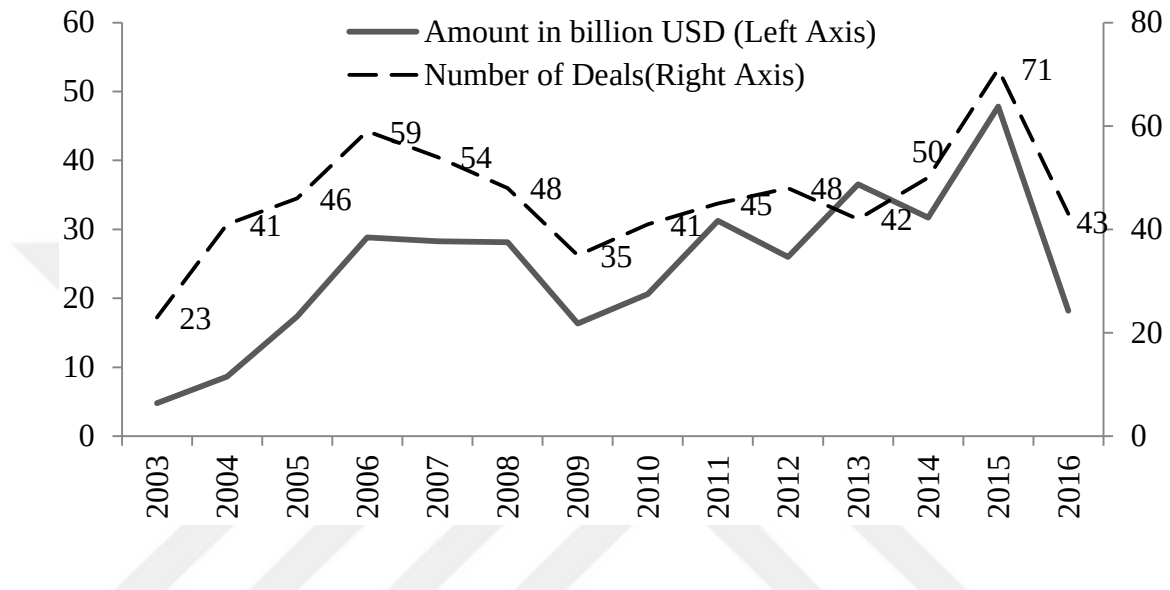


Figure 3 Financing secured by Turkish Firms from International Loan Market

This figure plots the number and the total amount of international loan deals that are extended to Turkish firms from 2003 to 2016.

Figure 3 plots the number and the total amount of syndicated loan deals that are extended to Turkish firms starting in 2003 and ending 2016. On the horizontal axes, the figure depicts years. I observe a decrease in the eve of global crisis beginning in 2007 and a sharp drop in 2009. After the global crisis, I observe a steady growth until 2015 and acceleration in 2015. The sample period ends with July 2016; therefore the deal magnitude is half for the year. The sample covers 646 deals worth 346.8 billion USD.

By using the information regarding type of the borrower provided by DEALSCAN, I generate dummy variable of bank, which takes value of one if the borrower is a banking

firm. Moreover, I generate dummy variable of state, which takes value of one if the borrower is a state controlled firm.

Table 9 provides borrower identifiers and size associated with each loan secured from international markets. 18.3 percent of loans (118 deals) are extended to state controlled firms. 48.4 percent of loans (313 deals) are extended to publicly listed firms. 49.8 percent of loans (322 deals) are extended to banks. 4.2 percent of loans (27 deals) are extended to financial companies such as leasing, factoring and financing institutions or investment trusts. The average loan size is \$537.2 million.

I need to calculate abnormal returns to measure agency costs associated with each borrower. Therefore, I eliminate those loan deals in which the borrower is not listed publicly in an exchange at the date of the issue date. This screen leaves me 313 loan deals which are issued to publicly listed firms between 01.04.2003 and 19.07.2016. Several firms are involved in more than one loan deal, so the number of sample firms is 38.

Using BLOOMBERG, I check for other type of announcements such as dividends, earnings, stock issues, other debt issues, management changes, acquisitions and stock repurchases on the same day of loan announcements that might contaminate abnormal returns. I identified three earnings and nine dividends announcements that overlap with loan announcement days. The overlapping announcements are associated with banking firms. I devote a separate chapter to analyze loan announcements for which borrowers are non-financial firms. My analysis of abnormal returns realized by non-financial firms

around loan announcements is robust to contaminating earnings and dividend announcements.

DEALSCAN database enables me to construct variables to control for loan characteristics and lender characteristics. I generate five exhaustive dummy variables that categorize loan announcements according to the purpose of the loan: capital investment, general corporate purposes, restructuring, debt repayment, no purpose identified.

I identify the loan size and maturity for each loan. The maturity is the difference between the end date and initiation date of each tranche. While the maturity of tranches can vary within loan deals, I drop to same maturity for each loan deal. If the loan deal has more than one tranches with different maturities, I take the longest maturity of the loan deal. Some of observations specify no maturity. I assume that these observations are short term. I generate a dummy variable of short term which is equal to one if the maturity of the loan is shorter than one year and no maturity is specified. Moreover, I can identify whether the loan is secured or not and whether the loan is credit line or not. Lastly, by using the issue date, I figure out whether the loan is extended during 2009 or 2010.

DEALSCAN provides information of name and unique code for each lender. Moreover, it identifies whether the loan is syndicated or not. For syndicated loans, DEALSCAN provides the portion of loan that is assumed by each lender. It also provides the role of each lender in a syndicate. I assign a lead lender dummy for each lender by using this

information. Lead Lender is equal to one if lender role is “Agent” or “Arranger”.

Accordingly, I compute the share of the size of the loan retained by lead lenders.

Using the name and the unique code for each lender, I identify two variables I use for lender characteristics. For each loan, I identify total amount of previous loans in five year window extended by all of the incumbent lead lenders. Turkish banking association provides the information of banks operating in Turkey since 2003. I also figure out whether each lead lender has a bank subsidiary in Turkey active in the date of issue of the loan.

5.3 Using FINNET to define proxies for firm characteristics

I compile firm-level financial statements from FINNET. These statements are total assets, long term debt, total debt, profits after tax and market value of equity. By using financial statements I construct firm level variables that I use in my empirical strategy. These variables are long term debt over total assets, return on assets and Tobin’s q. Tobin’s q is sum of book value of debt and market value of equity over total assets. Return on assets is profits over total assets.

Moreover, to proxy for informational opaqueness associated with each firm, I identify size and age variables. I use total assets to control for size. For each loan deal, to proxy for age, I use the difference between issue date of the loan and incorporation date of the borrower. From ORBIS database, I obtain incorporation date for each firm. Using incorporation date, for any fixed date of loan issue, I generate the age variable for each borrower.

To measure the quality of corporate governance, I compile a dummy variable for corporate governance quality for each firm using the information provided in the official website of Corporate Governance Association of Turkey. Ararat et al. (2017) states that beginning in 2007, Borsa Istanbul (BIST) created a “Corporate Governance Index” (XKUR) comprised firms which meet at least 70 percent of the corporate governance guidelines recommended by Capital Markets Board of Turkey (CMBT). Corporate Governance Association of Turkey discloses annual information on publicly listed firms that are included in XKUR index along with their respective corporate governance compliance level. By using the information provided by Corporate Governance Association, I generate dummy variable XKUR which takes a value of one if that firm included in XKUR index at that year. XKUR demarcate between firms that have higher levels and lower levels of corporate governance quality.

5.4 Using BLOOMBERG to calculate variables that depend on equity prices

I download closing prices of all equities traded in BIST beginning from 1990. Using closing prices, for each of equity, I compute daily returns by using the formula provided by Equation (2). Then I match equity returns with the 313 loan announcement sample I use. Using daily returns associated with each loan announcements, I calculate abnormal returns around loan announcements by using the formula provided in Equation (3) and (4).

Moreover, I use daily equity price returns to compute risk of a borrower for each loan announcement. I use standard deviation of daily returns of the borrower’s traded shares

within one year of estimation window as the measure of risk associated with the borrower.

5.5 Describing the sample

In this section, I provide the descriptive statics for the sample I use in univariate and multivariate analysis.

Table 10 presents descriptive statistics for the sample I use in univariate and multivariate analysis. Table 10 is grouped under type of borrower, ownership structure, loan characteristics, loan purpose, loan structure, lender characteristics, borrower characteristics and non-financial borrower characteristics.

The sample I employ includes 313 international loans extended to Turkish listed firms between 01.04.2003 and 19.07.2016. Maskara & Mullineaux (2011) state that in the loan announcement studies by James (1987), Lummer & McConnell (1989), Slovin et al. (1992), Best & Zhang (1993), Preece & Mullineaux (1994), and Billett et al.(1995) sample size ranges from 117 to 728 with an average sample size of 446.

74.8 percent (234 loans to 14 different firms) of loans are extended to banking firms and 24 percent (234 loans to 14 different firms) of loans are extended to non-financial firms. 1.3 percent (4 loans to 3 different firms) of loans are extended to other financial firms.

12.8 percent of loans (40 loans to 3 different firms) are extended to firms that are controlled by the state. 62.3 percent of loans (195 loans to 26 different firms) are extended to business group affiliated firms. 19.3 percent of loans are extended to business group affiliated firms that are controlled through pyramid structure. 10.22

percent, 4.79 percent, 3.51 percent and 1.28 percent of loans are extended to borrowers associated with one, two, three and four pyramid layers respectively. The average pyramid layer is 0.36.

Direct voting rights of controlling shareholder are important in determining extent of control that controlling shareholder exercises on the firm. Average direct voting rate of borrowers in my loan sample is 63.2 percent.

The average of size of the loan is 656.3 million USD and the median is 500 million USD. Therefore, loan size is large compared to other loan announcement studies. In Byers et al. (2008), the median loan size is 25 million USD. Slovin et al. (1992) report median loan size of 22.5 million USD for small firms and 104.0 million USD for large firms.

47.8 percent of loans contain only one tranche, 47.6 percent of loans contain two tranches, 2.56 percent of loans contain three tranches, and 2.56 percent of loans contain four tranches. Average number of tranches is 1.6.

Average maturity assigned with each loan is 943 days. The median of maturity is one year. 10.86 percent of loans have not assigned any maturity. 45.4 percent of loans are short term. 19.8 percent of loans contain lines of credit. 31.6 percent of loans are secured.

81.8 percent of loans are extended for general corporate purposes. Percentage of loan deals for restructuring is .6 percent. 9.6 percent of loans are extended for debt

repayment. 7 percent of loan deals are extended for capital expenditure. 1 percent of loans are extended for no specified purpose.

82.1 percent of loans are syndicated. The average number of lenders and lead lenders are 19 and 11 respectively. The average portion of loan retained by lead lenders is 76.5 percent. For 91.1 percent of loans, the incumbent borrower gets another loan from international loan market five years prior to loan announcement.

Number of loans extended by incumbent lead lenders to Turkey in past five year averages 8; total amount of loans extended by incumbent lead lenders averages 272.2 million USD. 69 percent of deals contain at least one lead lender that has a subsidiary active in Turkey. This figure implies that when extending loans to Turkish firms, a lead lender that knows Turkey arranges the contract. This is important to understand how international banks decrease asymmetric information when they lend to an emerging market.

28.1 percent of loans are extended to firms that have good quality of corporate governance (that are included in “Corporate Governance Index”). Return volatility is a proxy of risk and measured by standard deviation of daily returns in the one year prior to loan announcement. Return volatility averages 1.6 percent. Average size of borrowers is 35.5 billion \$. On average borrowers are 53.3 years old on loan announcement date.

Total long term debt over total assets averages 22.6 percent; return on assets averages 4.2 percent, Tobin’s q averages 1.39 and tangible assets over total assets averages 37.5 percent.

5.5.1 Business Group Firms vs. Stand-Alone Firms

The descriptive statistics that compares business group firms and stand-alone firms are provided in Table 11. There exists no significant difference in some of characteristics associated with the loan such as size of the loan, number of tranches, percentage of loans that are in form of lines-of-credit and percentage of loan that are secured. Instead, business groups get significantly higher maturities for international loans.

Loan structure and lender characteristics show that business group firms are monitored more intensively when compared to stand-alone firms. Loans extended to business group firms are less probable to be syndicated. 80 percent of loans extended to business groups are syndicated whereas for stand-alone firms syndicated loans average to 85.6 percent. The difference is statistically significant. Moreover, business group firms have lower number of lead lenders and the higher portion of loan is retained by lead lenders. The difference of the portion of the loan retained by lead lenders is statistically significant. This evidence corroborates that for business group firms lenders increase the intensity of monitoring by using more concentrated loan structure.

Moreover, banks that have more experience in Turkish market are more likely to lend to business group firms than stand-alone firms. Although the difference is not significant, lead lenders for international loans extended to business group firms have more experience in Turkish market when compared to those of stand-alone firms. Within past five years of the loan announcement date, lead lenders to business group firms have higher number of loans and amount extended to Turkish market. Additionally, they are more likely to have active subsidiary at the date of loan announcement.

Moreover, business group firms impose higher quality of governance when compared to stand alone firms. As Mitton (2002) suggests voluntary commitment to good corporate governance enables business group firms to limit agency costs.

Firm level characteristics show that business group firms are younger, have lower levels of long term debt and tangible assets. Nonetheless, they have higher profitability and Tobin's q. All these differences between firm characteristics are statistically significant.



CHAPTER VI

ANALYSIS OF ABNORMAL RETURNS AROUND INTERNATIONAL LOANS

Key objective of this chapter is to analyze sources of abnormal returns around international loan announcements. I investigate whether different sets of variables that reflect borrower characteristics, loan characteristics, purpose of the loan, loan structure, and lender characteristics explain cross sectional variation in abnormal returns. Moreover I investigate time series variation in abnormal returns.

6.1 Abnormal returns in different event windows

Table 12 reports descriptive statistics of cumulative abnormal returns around loan announcements in the sample. Panel A provides abnormal returns for total sample, Panel B and Panel C provides abnormal returns associated with business group firms and bottom firms respectively. I report t-statistics and p-values for one sided test of alternative hypothesis that abnormal returns are greater than zero. I calculate cumulative abnormal returns for different event windows for completeness. The most of loan announcement studies focus on event window $(-1,0)$ when analyzing abnormal returns around loan announcements (Best & Zhang, 1993; James, 1987; Lummer & McConnell, 1989; Preece & Mullineaux, 1996). I focus on event window $(-1,0)$.

In Panel A, for $(-1,0)$ cumulative abnormal return around loan announcements averages 0.18 percent which is not statistically significant. This evidence provides no evidence to reject null hypothesis of Hypothesis 1 which implies that abnormal returns around international loan announcements for full sample equal to zero. This evidence might show that international loans convey limited information for or imply limited monitoring of Turkish borrowers.

In panel B, for $(-1,0)$ cumulative abnormal return around loan announcements averages 0.41 percent for business group firms. The magnitude of abnormal returns around loan announcements is statistically significant at 1 percent level. In panel C, for $(-1,0)$ cumulative abnormal return around loan announcements averages 0.66 percent for business group firms controlled through pyramid structures(bottom firms). The magnitude of abnormal returns around loan announcements is statistically significant at 5 percent level.

In my t-tests, I specify my significance level up to 10 percent due to the small sample size. I reject the null hypothesis in the subsample of business group firms. Abnormal returns realized by business group firms imply that loan announcements convey positive information to the market.

In the remaining part of this section, I provide additional univariate analysis on the sources of abnormal returns around international loans. The variable used in analysis is a two day cumulative abnormal return ($CAR[-1,0]$). I provide six different tables. Each table represents different set of control variables such as borrower characteristics (Table 13), loan characteristics and purpose of the loan (Table 14), loan structure (Table 15),

lender characteristics (Table 16), and time series variation (Table 17). Each row in tables represents a specific variable that belongs to the set of control variables. In each row I partition the sample into upper and lower values and compare average abnormal returns for each subsample.

6.2 Borrower characteristics

The first row of Table 13 compares abnormal returns according to the corporate governance quality of borrowers. I control for the quality of corporate governance by using XKUR dummy. XKUR takes value of one if a firm meets at least 70 percent of the corporate governance guidelines recommended by Capital Markets Board of Turkey (CMBT). When borrowers are in XKUR, the average CAR is 0.28 percent. When borrowers are not in XKUR, the average CAR is -0.08 percent. This result shows that corporate governance provides monitoring mechanisms that substitutes the value generated by bank monitoring (Byers et al., 2008; Johnson, Boone, et al., 2000; Mitton, 2002).

The second row of Table 13 compares abnormal returns according to the return volatility of borrowers. Return volatility is a proxy of risk of the firm. I partition loans according to borrowers with above median return volatility and below median return volatility. I measure return volatility by standard deviation of daily returns in one year prior to loan announcement. I find that for borrowers with above median return volatility, the average CAR is 0.35 percent. For borrowers with below median return volatility, the average CAR is 0.01 percent. This finding supports Billett et al. (1995), Focarelli et al. (2008),

Ongena & Roscovan (2013), and Li & Ongena (2015). They find that the return volatility is positively related to abnormal returns around loan announcements.

The third row of Table 13 compares abnormal returns according to the size of borrowers measured by total assets. I find that when the borrower is below median size, CAR averages 0.25 percent. When the borrower is below median size, CAR averages 0.10 percent. I find evidence compatible with theoretical predictions of Diamond (1984) and Fama (1985) which implies that bank's information production function is more valuable for small firms. My evidence supports previous evidence provided by Slovin et al. (1992), Harvey et al. (2004), Byers et al. (2008), Focarelli et al. 2008, Ongena & Roscovan (2013), and Li & Ongena (2015).

6.3 Loan characteristics

Table 14 presents empirical analysis to investigate sources of abnormal returns related to loan characteristics. First row of Table 14 compares abnormal returns according to the size of the loan. I split the sample into two by using median value of the size of loan. Abnormal returns around large loans are 0.23 percent higher than abnormal returns around small loans, but the difference is not statistically significant. The result supports the evidence reported by Li & Ongena (2015). It shows that larger loans signal higher monitoring effort of banks proposed by Khalil & Parigi (1998) and Lin et al. (2012).

Second row of Table 14 shows that short term loans are associated with 0.34 percent higher abnormal returns around loan announcements when benchmarked against long term loans. The result suggests that short maturity signals credit quality of borrowers

with informational problems as Flannery (1986) and Barclay & Smith (1995) proposes. Alternatively, short maturity reflects the borrower's commitment to accept new evaluation from the bank under renewal of debt and to limit agency costs until next evaluation period as James (1987) suggests.

Third row of Table 14 also presents evidence that credit lines lead to 0.36 percent higher abnormal returns around loan announcements when compared to term loans. This result is compatible with the previous evidence reported by Lummer & McConnell (1989). It supports the predictions of Berger & Udell (1995), Shockley & Thakor (1997), and Chakraborty & Hu (2006) which suggests that credit lines signals either lower level of information asymmetry between the bank or the borrower or continuous monitoring effort supplied by the bank.

Fourth row of Table 14 states that unsecured loans are associated with 0.42 percent higher abnormal returns when compared to secured loans. This evidence supports Lummer & McConnell (1989)'s previous evidence. Moreover, it is compatible with predictions of moral hazard models on collateral (Boot et al., 1991; Holmstrom & Tirole, 1997; Stulz & Johnson, 1985). It shows that banks substitute the collateral by their commitment to monitor borrowers. Therefore, if no collateral is pledged, loan signals more positive information that bank will exert more effort to monitor the borrower.

Each row of second panel of Table 14 compares CARs according to five categories of loan purpose previously used by James (1987), Slovin et al. (1992), and Boscaljon & Ho (2005). They all report mixed results and provide no theoretical explanation that justifies

their findings. I find that “capital expenditure”, “general corporate purposes” and “other purpose” groups are associated with positive abnormal returns. “Restructuring” and “debt repayment” groups lead to negative abnormal returns. Sample sizes of “other purpose” and “Restructuring” are too small, so that I will consider them in “general corporate purposes” group. I am going to perform my multivariate analysis by using three exhaustive dummies to control for loan purpose.

6.4 Loan structure

In table 15, I investigate whether different loan structure characteristics lead to variations in the magnitude of abnormal returns. First of all, first row of Table 15 compares abnormal returns associated with syndicates and non-syndicates. Syndicated loans lead to 0.13 percent lower abnormal returns. This evidence is compatible with predictions and evidence provided by Preece & Mullineaux (1996).

Within second and fourth rows of Table 15, I investigate whether number of lenders, number of lead lenders and the share retained by lead lenders are effective on the magnitude of abnormal returns. As Sufi (2007) suggests lead lenders have primary responsibility of both investigation and monitoring of borrowers, therefore both smaller number of lead lenders and the higher portion of the loan retained by lead lenders are equally important. I split the sample into above and below median lead retained. The group of above median lead retained is associated with 0.45 percent higher abnormal returns when compared to below median lead retained. This result supports the predictions and empirical evidence provided by Sufi (2007) and Focarelli et al. (2008)

which implies that share retained by lead lenders lead to higher monitoring of the borrower and higher abnormal returns around loan announcements.

Sixth row of Table 15 shows that initial loans from international loan market leads to 0.62 percent higher abnormal returns when benchmarked against subsequent loans. This result implies that a new loan from international market lead to positive information regarding credibility of the borrower.

6.5 Lender characteristics

Table 16 presents how lender characteristics affect abnormal returns around loan announcement. First two rows of Table 16 analyze the past lending experience of lenders in Turkish market. First row uses total number of loans extended by lead lenders, second row uses total amount of loans extended by lead lenders to measure past experience. First and second row provides evidence that higher past experience lead to 0.18-0.19 percent higher abnormal returns around loan announcements.

Third row in Table 16 provides additional evidence that experience on the emerging market is particularly useful in providing positive market perception around loans secured in international markets. Realized abnormal returns are 0.28 percent higher if a lead lender has active subsidiary on loan announcement date. This evidence suggests that past lending experience in an emerging market produces useful soft information. This information benefits lenders in dealing with information opacity problems regarding the emerging market(Berger & Udell, 2002).

6.6 Time series

Table 17 provides evidence that how abnormal returns vary across economic cycles in Turkey. In each row of Table 17, I compare abnormal returns associated with loan announcements in years that surround the global financial and economic crisis. I find that in years 2007 and 2011 abnormal returns are 0.50 and 1.37 percent lower when compared to abnormal returns realized in other years. In 2007 and 2011, Turkish economy experiences a credit boom in terms of increased capital inflow to the Turkish market. Especially decrease in abnormal returns around loan announcements during 2011 is statistically significant at 0.01 level. This evidence is justified by the fact that after the global crisis, starting with 2010, expansionary monetary policies of advanced economies and its strong economic outlook enabled Turkey to attract capital inflows (Milesi-Ferretti & Tille, 2011). Moreover, in 2011 Turkey realized an increase in credit rating which attracts capital inflows more (Aktas & Cortuk, 2012). The evidence is compatible with the evidence that banks' lending standards and monitoring effort in booming periods soften due to benign macroeconomic conditions (Maddaloni & Peydró, 2011).

In contrast, during years 2008, 2009 and 2010 abnormal returns around loan announcements is 0.57, 0.40 and 0.71 percent higher respectively. This evidence also compatible with the evidence that under contraction and especially during crisis times banks reset to their efficient lending and monitoring role (De Haas & Van Horen, 2013).

CHAPTER VII

AGENCY COSTS ASSOCIATED WITH BUSINESS GROUP CONTROL AND PYRAMID OWNERSHIP STRUCTURES

Key objective of this chapter is to test hypothesis 2 and 3. Hypothesis 2 predicts that international loans extended to business group firms lead to higher abnormal returns when compared to loans extended to stand alone firms. Hypothesis 3 predicts that business group firms controlled through pyramid structures realize higher abnormal returns than other business group firms or stand-alone firms.

7.1 Business Group Control

Table 18 reports univariate statistics for cumulative abnormal returns for two groups: when the borrower is stand-alone firm (Group 1) and when the borrower is business group firm (Group 2). The number of observations for these groups equals 118 and 195 respectively. Table 18 lists the mean for each group and differences between means of each group. It also reports the t-statistics and one-tailed p-values to test alternative hypothesis that the difference between two groups is higher than zero. This one-tailed test investigates null hypothesis provided in Hypothesis 2 which implies that abnormal returns around loan announcements realized by business group firms is not different from those realized by stand-alone firms.

In Table 18, for event window $[-1,0]$ the difference between abnormal returns of business group firms and stand-alone firms is 0.61 percent and statistically significant at five percent level. This finding provides univariate evidence to reject null hypothesis which states no difference between abnormal returns around loan announcements for business group firms and stand-alone firms. The results indicate besides potential benefits of business group firms investors anticipate tunneling from business group firms. Tunneling anticipation is reflected in prices as higher agency costs. As a result, when borrowers secure financing from international markets, information conveyed around loan announcements brings more value when the borrower is controlled by business groups than when the borrower is stand-alone firm.

In Table 19, I regress two days abnormal returns ($CAR[-1;0]$) on the business group dummy controlling for different characteristics that affect abnormal returns: borrower characteristics, loan characteristics, loan purpose, loan structure, lender characteristics and year fixed effects. The regression model is provided in Equation 7. To control for purpose of the loan, I use three exhaustive variables: “capital investment”, “general corporate purposes” and “debt repayment”. Because other groups that identifies the purpose of the loan such as “no purpose identified” and “restructuring” has 3 and 2 observations respectively. Therefore, I consider these groups within “general corporate purposes”.

I provide four models. First model does not include any control variables. Second model includes only borrower characteristics. Third model includes borrower characteristics, loan characteristics, and loan structure and loan purpose variables. Fourth model includes all sets of the control variables.

The estimated coefficient on the business group dummy differs between 0.57 to 0.64 percent. This is an economically significant effect given the whole sample average of realized two days abnormal returns for $[-1;0]$ is 0.18 percent. The impact of business group control on abnormal returns is statistically significant at 10 percent level in all of the specifications except one. When I control for all sets of control variables, the significance of estimated coefficient for business group dummy disappears. Therefore, multivariate results are not totally in line with univariate results provided in Table 18 and provide limited evidence to reject null hypothesis.

7.1.1 Control variables

Consistent with my earlier discussions, the direction of estimated coefficients on control variables reflects the theoretical predictions regarding their relevance in explaining abnormal returns. But for the most of control variables, estimated coefficients show no statistical significance.

7.1.1.1 Borrower characteristics

I find that higher quality of corporate governance of borrowers is associated with 0.21-0.26 percent decrease in abnormal returns around loan announcements. This finding is partially compatible with arguments that good corporate governance substitutes external monitoring of firms by banks (Byers et al., 2008; Johnson, Boone, et al., 2000; Mitton, 2002). The coefficient of return volatility is positive in compatible with Billett et al. (1995), Focarelli et al. (2008), Ongena & Roscovan (2013), and Li & Ongena (2015). Each percent increase in standard deviation of borrower returns is associated with 0.09 percent higher abnormal returns, but has no statistical significance. The coefficient of

size in Model 4 predicts that abnormal returns decrease as the size of the borrower increases. It is compatible with empirical evidence provided by Slovin et al. (1992), Harvey et al. (2004), Byers et al. (2008), Focarelli et al. (2008), Ongena & Roscovan (2013), and Li & Ongena (2015). But economic and statistical significance is very poor.

7.1.1.2 Loan purpose

I have three exhaustive dummy variables that control for the purpose of the loan:

“capital expenditure”, “general corporate purposes” and “debt repayment”. I introduce “capital expenditure” and “debt repayment” dummies to the multivariate specification.

The base is the group that reflects “general corporate purposes”. The “capital expenditure” group realizes 0.42 percent higher abnormal returns around loan announcements then “general corporate purposes” realizes. The “debt repayment” group realizes 1.45 percent lower abnormal returns around loan announcements then “general corporate purposes” realizes. The impact of loan purpose is economically significant but shows no statistical significance.

7.1.1.3 Loan characteristics

I control for loan characteristics by using size of the loan(in billion USD) and introducing three dummies to show whether the loan has short maturity, whether the loan is a credit line and whether the loan is secured. The coefficient of secured dummy is statistically significant at 0.05 level and shows that secured loans is associated with 0.69-0.71 percent lower abnormal returns. This impact shows that banks substitute the collateral by their commitment to monitor borrowers as moral hazard models on collateral suggests (Boot et al., 1991; Holmstrom & Tirole, 1997; Stulz & Johnson,

1985). Similarly, if no collateral is pledged, loan signals positive information that bank will exert more effort to monitor the borrower.

Increase in loan size by one billion USD leads to 0.33-0.46 percent higher abnormal returns around loan announcements. The result supports the evidence reported by Li & Ongena (2015). It shows that larger loans signal higher monitoring effort of banks proposed by Khalil & Parigi (1998) and Lin et al.(2012).

Realized loan announcement abnormal returns are 0.32-0.36 percent higher if the loan is a credit line instead of term loan. This evidence suggests that credit lines signals either lower level of information asymmetry between the bank and the borrower or continuous monitoring effort supplied by the bank (Berger & Udell, 1995; Chakraborty & Hu, 2006; Shockley & Thakor, 1997).

Short term loans realize 0.44-0.45 percent higher abnormal returns. This result suggests that short maturity signals credit quality of borrowers with informational problems as Flannery (1986) and Barclay & Smith (1995) proposes. Alternatively, short maturity reflects the borrower's commitment to accept new evaluation from the bank under renewal of debt and to limit agency costs until next evaluation period as Fama (1985) and James (1987) suggest.

7.1.1.4 Loan structure

I control for loan structure using three variables: syndicated dummy, the portion of the loan retained by lead lenders (in 10 percent) and subsequent dummy. Estimated coefficients for syndicated dummy show that syndicated loans realize lower abnormal returns between 0.20 and 0.49 percent when compared to non-syndicated loans. This

evidence is compatible with predictions and evidence provided by Preece & Mullineaux (1996).

For each 10 percent increase in the share retained by lead lenders borrowers realize 0.04 percent higher abnormal returns. This result implies that share retained by lead lenders lead to higher monitoring effort of the borrower (Focarelli et al., 2008; Sufi, 2007).

Abnormal returns around loan announcements is 0.58-0.63 percent lower if the loan is subsequent loan in international loan market. This result implies that a new loan secured from international market lead is more valuable to investors because it conveys significant positive information regarding the credibility of the borrower.

7.1.1.5 Lender characteristics

Past lending experience of lead lenders in Turkish market explains the variation in abnormal returns. One billion USD additional loans extended by lead lenders in past five years increases abnormal returns by 0.32 percent. Moreover, if the lead lender has active subsidiary around loan announcements abnormal returns increase additionally by 0.37 percent. This evidence suggests that past lending experience in Turkey produces useful soft information that benefits lenders in dealing with information opacity problems.

7.2 Pyramid Structures

Table 20 reports univariate statistics to investigate alternative hypothesis provided in Hypothesis 3 which implies that, around international loan announcements, business group firms controlled through pyramid ownership structures realize higher abnormal returns than stand-alone firms and other business group firms realize. Therefore, Table

20 compares the average cumulative abnormal returns for two groups: the borrower is horizontally controlled business group firm or stand-alone firm (Group 1); the borrower is business group firm controlled through pyramid structure (Group 2). The number of observations for these groups equals 251 and 62 respectively. I provide the mean abnormal return for each group and differences between means of each group. I also provide the t-statistics and p-values associated with a one-tailed test that the difference between groups is higher than zero.

Table 20 reports empirical evidence compatible with alternative hypothesis. For event window $[-1,0]$, abnormal returns realized is higher for business group firms controlled through pyramid ownership structures. The difference is 0.60 percent and statistically significant at ten percent level. The results indicate that market anticipation for tunneling shows cross sectional variation within business group firms. Investors anticipate tunneling from business group firms if they controlled through pyramid structures. As a result, when business group firms secure financing from international markets, information conveyed around loan announcements brings more value when the borrower is controlled through pyramid structures.

I turn to a multivariate analysis of the relation between announcement returns and pyramid ownership structures, using the $CAR(-1;0)$ as the dependent variable in Table 21 and Table 22. Four different models specified in each table control for different sets of borrower characteristics, loan characteristics, loan purpose, loan structure, lender characteristics and year fixed effects. To investigate the impact of pyramid ownership structures I include two different explanatory variables: bottom and pyramid layer.

In Table 21, I employ multivariate regression analysis for the full sample of 313 loan announcements using the two-day announcement period $(-1,0)$ abnormal returns as the dependent variable. The regression model is provided in Equation (8a). Along with sets of control variables, I use bottom indicator to measure control through pyramid ownership structure.

The results I present in Table 21 provide additional evidence supporting the alternative hypothesis (Hypothesis 3) that pyramid ownership structures are associated with higher agency costs. The estimated coefficient of dummy variable of bottom shows that pyramid ownership structures realize significantly higher abnormal returns between 0.59 and 0.66. The coefficient of bottom is significant at five percent level at three of models and significant at ten percent level at one model. The effect of bottom dummy on abnormal returns is economically significant because the average CAR for the whole sample is 0.18 percent.

In Table 22, I show results of regression in which the dependent variable is two days abnormal returns for event window $[-1;0]$ and the explanatory variable is the pyramid layer associated with the borrower. The regression model is provided in Equation (8b). Table 22 provides additional support for the findings reported in Table 21 by using pyramid layer variable. I find that the coefficient on pyramid layer is 0.31 to 0.34 percent and significant at 0.01 and 0.05 level depending on the type of model.

The main finding of this dissertation is provided in this chapter. Results provided in Table 18 and 19 enables me to make inferences about agency costs associated with business group firms. These agency costs reflect the agency problem between the

controlling shareholder and minority shareholders. Accordingly, Table 18 and 19 provides evidence against null hypothesis 2 and supports the alternative hypothesis 2.

Bottom variable and pyramid layer is associated with higher levels of control cash flow wedge therefore they show agency problem associated with pyramid ownership structures. Accordingly, Tables through 20 to 22 provides evidence in support of the alternative hypothesis. Market anticipates tunneling by the controlling shareholder if the business group firm is controlled through pyramid structures. Loans secured in international markets convey more valuable information regarding business groups within pyramids because these loans alleviate investors' concern for tunneling.

CHAPTER VIII

FACTORS THAT INCREASE AGENCY COSTS OF PYRAMID OWNERSHIP STRUCTURES

In this chapter, I further analyze my research question regarding whether pyramid ownership structures increase agency costs of business group controlled firms. My key objective in this chapter is testing Hypothesis 4. In Hypothesis 4, I consider factors in which tunneling incentives of the controlling shareholder is higher. I hypothesize that market anticipates tunneling in the presence of these factors together with pyramid ownership structures. As a result, international loans convey more valuable information when these factors are present for business group firms within pyramid ownership structures. Therefore, abnormal returns should be particularly high for those firms. The factors I examine are

- a) voting rights of the controlling shareholder exceeds 50 percent,
- b) the firm has lower quality of corporate governance,
- c) the firm bears informational opacity; that is firm is small or young,
- d) the firm has higher risk, measured by return volatility,
- e) there exists an economy wide crisis.

For each factor, I present four models. I use models 1 and 2 to examine bottom variable. I use models 3 and 4 to examine pyramid layer variable. Models 1 and 3 are the models

specified in Equation 8a and 8b respectively. In models 2 and 4, I provide estimated coefficients for models specified in Equation 9a and 9b respectively. Models 2 and 4 include the interaction of upper and lower values of each factor with bottom and pyramid layer variables. All multivariate models provided in this chapter consider all of the control variables such as borrower characteristics, loan characteristics, loan purpose, loan structure and lender characteristics.

8.1 The voting rights of the controlling shareholder exceed 50 percent

In this part, I investigate that if voting rights of the controlling shareholder exceeds 50 percent, agency costs associated with pyramid ownership structures increase accordingly. I consider 50 percent of voting rights as the threshold for effective control as McConnell & Servaes (1990) suggests. In order to understand how the impact of pyramid structure on abnormal returns varies above and below threshold, I define two dummy variables, “Voting rights<50%” and “Voting rights≥50%”. “Voting rights<50%” equals one if voting rights of the controlling shareholder below 50 percent. “Voting rights≥50%” equals one if voting rights of the controlling shareholder exceeds 50 percent.

Table 23 reports results of this investigation. Table 23 provides four models in which the dependent variable is $CAR(-1;0)$. Models 1 and 3 are the models specified in Equation 8a and 8b respectively. I introduce an additional explanatory variable “voting rights” which measures the extent of control by the controlling shareholder. In models 2 and 4, I provide the estimation for Equation 9a and 9b respectively. Models 2 and 4 includes the interaction of “Voting rights<50%” and “Voting rights≥50%” with bottom and pyramid

layer variables. In each model, I control for sets of variables that reflect borrower characteristics, loan characteristics, loan purpose, loan structure, lender characteristics and year fixed effects.

In all models, the estimated coefficient on the “voting rights” equals to 0.02 implying that each percentage increase in voting rights of the controlling shareholder leads to significant 0.02 percent increase in CAR(-1;0). In these specifications, linear relation between the controlling shareholder’s fraction of voting rights and firm value imply that agency costs increase as the controlling shareholder’s fraction of voting rights increases. One standard deviation increase in (17.6%) in voting rights of the controlling shareholder leads to 0.35 percent significant increase in realized abnormal returns. This finding gives a support to negative relation between firm value and the controlling shareholder’s fraction of voting rights (McConnell & Servaes, 1990; Morck et al., 1988; Stulz, 1988). The source of agency costs in Turkish publicly listed firms is the conflict between the controlling shareholder and minority shareholders.

In model 1, the estimated coefficient for bottom is 0.72 percent. Model 2 separates this impact into two. Model 2 shows that the estimated coefficients of interacted variables “Bottom*Voting rights<50%” and “Bottom*Voting rights $\geq$ 50%” are 0.20 and 0.90 respectively. The estimated coefficient for “Bottom*Voting rights $\geq$ 50%” is statistically significant at 0.05 level. Model 3 and 4 corroborates this result. In model 3 the coefficient of pyramid layer is 0.39 percent. In model 4 the estimated coefficients of interacted variables “Pyramid Layer*Voting rights<50%” and “Pyramid Layer*Voting rights $\geq$ 50%” are 0.01 and 0.42 respectively. The estimated coefficient for “Pyramid Layer*Voting rights $\geq$ 50%” is statistically significant at 0.01 level. Realized abnormal

announcement returns is higher for firms that are controlled through pyramid ownership structures when voting rights of the controlling shareholder exceeds 50 percent.

The result gives support to the alternative hypothesis which implies that pyramid ownership structures lead to higher anticipation of tunneling for investors. The negative effect of pyramid ownership structures on firm value is particularly strong when the control right of the controlling shareholder exceeds 50 percent. Investors anticipate tunneling especially when business group firm is controlled through pyramid ownership structures and control power of business group exercised on the firm is high. As a result, international loans convey more valuable information for those firms.

8.2 The firm has lower quality of corporate governance

In this part, I investigate whether agency costs of pyramid ownership structures are higher for firms with lower quality of corporate governance. I measure the quality of corporate governance by using XKUR dummy which equals to one if a firm is included in corporate governance index of BIST. I define additional two dummy variables by using XKUR. First dummy, LowQualityGovernance, equals to one if XKUR takes value of zero which implies that the firm has low quality of corporate governance. Second dummy, HighQualityGovernance, equals to one if XKUR takes value of one which implies that the firm has high quality of corporate governance.

In Table 24, I provide four models. Models 1 and 3 are the models specified in Equation 8a and 8b respectively. Model 2 is specified in Equation 9a which includes the interaction of LowQualityGovernance and HighQualityGovernance with bottom

variable. Model 4 is specified in Equation 9b which includes the interaction of LowQualityGovernance and HighQualityGovernance with pyramid layer variable. Each model uses all of sets of control variables: borrower characteristics, loan characteristics, loan purpose, loan structure and lender characteristics and year dummies.

The estimated coefficient of bottom is 0.59 in model 1 which is statistically and economically significant. In Model 2 the estimated coefficient of interacted variables Bottom*LowQualityGovernance is 0.93 which is significant at 0.01 level whereas the estimated coefficient of interacted variables Bottom*HighQualityGovernance is insignificant and turns to negative. Models 3 and 4 provide the similar results for pyramid layer variable. The estimated coefficient of Pyramid Layer is 0.31 in model 3 which is statistically and economically significant. In Model 4 the estimated coefficient of interacted variables Pyramid Layer*LowQualityGovernance is 0.45 which is significant at 0.01 level whereas the estimated coefficient of interacted variables Pyramid Layer*HighQualityGovernance is insignificant and turns to negative.

The estimated coefficient of XKUR in model 1 and model 3 indicates that the sole impact of quality of corporate governance on abnormal returns is statistically and economically insignificant. But the quality of corporate governance becomes important when a firm is controlled through pyramid ownership structure. Investors anticipate tunneling especially when business group firm is controlled through pyramid ownership structures and the firm has low quality of corporate governance. As a result, international loans convey more valuable information for firms with low quality of corporate governance and controlled through pyramid structures. Therefore, abnormal returns associated with pyramid ownership structures is more related to firms with low

quality of corporate governance than to firms with high quality of corporate governance. The result is compatible with the alternative hypothesis which implies that pyramid ownership structures lead to higher agency costs.

8.2.1.1 Subsample of banks

I further investigate whether agency costs of pyramid ownership structures are higher for firms with lower quality of corporate governance. I provide additional evidence by assuming that in Turkey banking firms has higher quality of corporate governance than non-banking firms. Ugur & Ararat(2006) and Ararat et al.(2017) state that in Turkey corporate governance has been a concern for banking firms mostly. They document that after banking crisis of in Turkey in 2001, due to high losses suffered from the relations between the banks and their owner's, corporate governance for banks are strongly encouraged by banking and capital market regulatory authorities. I redo empirical analysis provided in Table 24 by using the differences between banking firms and non-banking firms to control for quality of corporate governance. I use bank dummy and non-bank dummy variables. Bank dummy equals to one if the firm is banking firm. Non-bank dummy equals to one if the firm is not banking firm.

In all of four models, the estimated coefficients of bank dummy is between -0.19 and -0.35 but statistically insignificant. In model (2) and (4), I find that the being bank or not becomes more important when the borrower has potential for agency problem. In model (2), estimated coefficients of "Bottom*Non-Bank dummy" and "Bottom*Bank dummy" are 0.68 and 0.49 respectively. Both are statistically insignificant. This gives result gives partial evidence that bottom firms realize higher abnormal returns when they are non-banking firms. In model (3), estimated coefficients of Pyramid layer*Non-Bank

dummy” and “Pyramid layer*Bank dummy” are 0.55 and 0.24 respectively. The coefficients are statistically significant. This result indicates that being a non-banking firm brings 0.55 percent higher abnormal returns for each level of pyramid layer. For banking firms this amount is only 0.24 percent.

As a result, assuming that banking firms has higher quality of corporate governance, Table 25 provides evidence that abnormal returns associated with pyramid ownership structures is more related to firms with low quality of corporate governance than to firms with high quality of corporate governance. This evidence supports alternative hypothesis that pyramid ownership structures lead to higher agency costs.

8.3 The firm has informational opacity; that is firm is small or young

Table 26 and 27 present evidence whether agency costs of pyramid ownership structures are higher for firms with higher informational opaqueness. I control of the level of informational opacity of the borrower by size and age variables. I partition firms into those with high informational opacity and those with low informational opacity. I use 25th percentile of size and age variable as threshold to make this grouping. The borrowers below 25th percentile size and 25th percentile age are assumed to have higher informational opacity than other borrowers.

Model 1 and 3 in Tables 26 and 27 give predictions when I regress CAR on size and age. Consistent with theoretical predictions of Diamond (1984) and empirical findings of Slovin et al. (1992) size and age are negatively related with abnormal returns. The new information provided by international loans is more valuable when a borrower has more

informational problems. Nevertheless, the impact of size and age in my sample is economically and statistically insignificant. On the contrary, I find that informational opacity is important when the borrower is controlled thorough pyramid structure.

In model 1 of Table 26 the estimated coefficient of bottom is 0.59 which implies that bottom firms realize 0.59 percent higher abnormal returns around international loans. In model 2 of Table 26 the estimated coefficient of “Bottom*Size below 25thPercentile” is 0.81 which is statistically significant at 0.1 level. The estimated coefficient of “Bottom*Size above 25thPercentile” is 0.40 and statistically insignificant. Therefore, Model (2) in Table 27 provides evidence that if they have high informational opacity, bottom firms realize higher abnormal returns.

Model 3 and 4 of Table 26 provides similar results for pyramid layer variable. Model 3 shows that each pyramid layer is associated with significantly positive 0.31 percent abnormal returns. In model 4 coefficients of “Pyramid Layer*Size below 25thPercentile” and “Pyramid Layer*Size above 25thPercentile” are 0.59 and 0.23 respectively. Both of them are statistically significant. Model 4 in Table 27 provides evidence that high informational opacity leads to higher abnormal returns for each layer of pyramid structure.

Table 27 shows that when I use age as a proxy for informational opacity, I find more strong relation between opacity and abnormal returns for firms with pyramid structure. Model 1 provides evidence that bottom firms realize 0.59 percent higher abnormal returns. Model 2 shows that bottom firms with high informational opacity realizes 3.00 percent significant abnormal returns. Abnormal returns associated with other bottom

firms are 0.55 percent. Similarly, Model 3 shows that each pyramid layer leads to 0.31 higher abnormal returns. Model 4 provides evidence that realized abnormal returns for each pyramid layer is 2.94 percent if borrower has high informational opacity. For other borrowers abnormal returns around loan announcements averages 0.30 percent.

Table 26 and 27 provides evidence that investors anticipate higher incentives of tunneling for opaque firms that are controlled through pyramid ownership structures.

Therefore, new information conveyed by international loans is more valuable for the firms with pyramid structure if they have higher informational opacity (both for smaller and younger firms). This evidence gives a support for alternative hypothesis.

8.4 The firm has higher risk

I measure the level of risk of the borrower by return volatility. I compute return volatility by standard deviation of stock returns in one year window. I partition firms into those with high risk and those with low risk. The borrowers below median return volatility are assumed to have low risk and the borrowers above median return volatility are assumed to have high risk.

Models 1 and 3 in Table 28 shows that return volatility have positive but insignificant impact on abnormal returns. Consistent with Billett et al. (1995), Focarelli et al. (2008); Ongena & Roscovan (2013), and Li & Ongena (2015) riskiness of borrowers are positively related with abnormal returns they realize around loan announcements. On the other, the effect of risk is not statistically significant.

In each model, bottom and pyramid layer variables are associated with positive and significant abnormal loan announcement returns of 0.57 percent and 0.31 percent respectively. Model 2 and 4 shows that return volatility of a borrower is important in abnormal returns when the borrower has pyramid structure. Model 2 in Table 28 predicts that for the borrowers with high return volatility, being bottom increases abnormal returns by 1.11 percent. This impact is statistically significant at 0.01 level. For borrowers with low return volatility being bottom increases abnormal returns by only 0.18 percent which is not statistically significant. Model 4 in Table 28 predicts the same result. For the borrowers with high return volatility, increasing pyramid layer by one level increases abnormal returns by 0.51 percent. This result is significant at 0.01 level. For borrowers with low return volatility increasing pyramid layer by one level increases abnormal returns by 0.05 percent.

Table 28 presents evidence that investors anticipate higher incentives of tunneling for riskier firms that are controlled through pyramid ownership structures. Therefore, new information conveyed by international loans is more valuable for the firms with pyramid structure if they have higher risk. Abnormal returns associated with pyramid ownership structures are more related to firms with high levels of risk than to firms with low levels of risk. The result is compatible with the alternative hypothesis which implies that pyramid ownership structures lead to higher agency costs.

8.5 There exists an economy wide crisis

I consider the impact of the global financial crisis on Turkish economy during years 2009 and 2010. I generate dummy variables of crisis and non-crisis. Crisis dummy is

equal to one if the initiation date of international loan is in 2009 or 2010. Non-crisis dummy is equal to one if the initiation date of international loans is in years other than 2009 and 2010. By using crisis and non-crisis dummy variables, I partition international loans into those that are extended in crisis times and those extended in remaining period.

In models 1 and 3, multivariate evidence states that during economy wide crisis the value of information conveyed by loan announcements is higher for investors. This evidence supports previous evidence provided by Maddaloni & Peydró (2011) which shows that bank monitoring is inefficient in credit booms and becomes more efficient in credit contraction. Crisis dummy is associated between 0.07 and 0.22 percent higher abnormal returns. But neither of the coefficient estimates of crisis dummy is statistically significant.

I find that international loans extended in crisis times convey more positive information when the borrower is controlled through pyramid ownership structure. Model 2 in Table 29 predicts that for the loans extended in crisis, being bottom increases abnormal returns by 0.95 percent. For other time periods, international loans increase abnormal returns by 0.45 percent for bottom firms. Both impacts are not statistically significant. Model 3 in Table 29 predicts the same result. For loans extended in crisis times, increasing pyramid layer by one level increases abnormal returns by 0.50 percent. This result is significant at 0.05 level. For other time periods, increasing pyramid layer by one level increases abnormal returns by 0.16 percent which is statistically insignificant.

The result gives partial support to the alternative hypothesis which implies that pyramid ownership structures lead to higher agency costs. The negative effect of pyramid

ownership structures on firm value is particularly strong during economy wide crisis. Investors anticipate higher incentives of tunneling for business group firms that are controlled through pyramid ownership structures under economy wide crisis. Therefore, international loans extended to firms with pyramid structures convey more information in economy wide crisis.



CHAPTER IX

ANALYSIS OF AGENCY COSTS WITH A SPECIAL FOCUS ON NON-FINANCIAL FIRMS

In this chapter, I investigate agency costs associated with business group control and pyramid ownership structures by restricting my sample to loan announcements in which borrowers are non-financial firms.

9.1 Abnormal returns in different event windows

Table 30 reports cumulative abnormal returns for different event windows around loans secured from international market. Shareholders earn positive abnormal returns around international loan announcements. I report t-statistics and p-values for one sided test of alternative hypothesis that abnormal returns are greater than zero. Computed abnormal returns are statistically significant for the most of event windows. For event windows $[-5;0]$, $[-3;0]$ and $[-1;0]$ abnormal returns are 0.90 percent, 0.68 percent and 0.47 percent and all of them are statistically significant at 0.05 level. This evidence gives strong support to reject null Hypothesis 1.

9.2 Business Group Control

Table 31 reports univariate statistics for non-financial firms to investigate alternative hypothesis provided in Hypothesis 2. Alternative hypothesis implies that around international loan announcements, business group firms realize higher abnormal returns than stand-alone firms. Table 31 splits cumulative abnormal returns for two groups: when the borrower is stand-alone firm (Group 1) and the borrower is business controlled firm (Group 2). The number of observations for these groups equals 14 and 61 respectively. The table lists the mean for each group and differences between means of each group. The table also reports the t-statistic and p-value of a one-tailed test that the difference between groups is higher than zero. This one-tailed test investigates alternative hypothesis provided in Hypothesis 2 which implies that abnormal returns realized by business group firms is higher than those realized by stand-alone firms. For event window $[-1;0]$ the difference is positive with 0.18 percent. Nevertheless, the difference is not statistically significant. This finding provides no evidence to reject null hypothesis for non-financial firms.

Table 32 reports multivariate analysis to investigate alternative hypothesis provided in alternative hypothesis (Hypothesis 2) which implies that, around international loan announcements, business group firms realize higher abnormal returns than stand-alone firms. In Table 32, I regress two days abnormal returns ($CAR[-1;0]$) on the business group dummy controlling for different characteristics that affect abnormal returns: borrower characteristics, loan characteristics, loan purpose, loan structure, lender characteristics and year fixed effects. The regression model is provided in Equation 7.

In Table 32, I also control for financial statements of borrowers such as leverage measured by long term debt/total assets, profitability measured by return on assets, Tobin's q and tangible assets/total assets. These financial statements are used by other studies to control for abnormal returns. Billett et al. (1995), Harvey et al. (2004), Focarelli et al. (2008), Byers et al. (2008), Ongena & Roscovan (2013), and Li & Ongena (2015) uses leverage ratio. Billett et al. (1995), Byers et al. (2008), Ongena & Roscovan (2013), Li & Ongena (2015), and Focarelli et al. (2008) uses profitability. Billett et al. (1995), Harvey et al. (2004), Byers et al. (2008), Ongena & Roscovan (2013) uses Tobin' q. Harvey et al. (2004) uses tangible assets over total assets.

I provide four models. First model include only business group dummy and XKUR dummy which reflects the quality of the corporate governance. Second model includes only borrower characteristics. Third model includes borrower characteristics, loan characteristics, loan structure and loan purpose variables. Fourth model includes all sets of the control variables. For third and fourth model I exclude XKUR dummy, because within 75 loan announcement observations for non-financial firms 26 of them are associated with borrowers that has XKUR variable of one. From these 26 observations none of them belongs to stand alone firms. Therefore XKUR dummy does not explain variation according to business group control.

The estimated coefficient on the business group dummy differs between 1.67 to 2.2 percent. The coefficient of business group dummy is statistically significant for models from 2 to 4. This is an economically significant effect given the whole sample average of realized two days abnormal returns for non-financial firms are 0.47 percent.

Multivariate analysis for restricted sample of non-financial firms supports alternative

hypothesis which states that business group control is associated with higher agency costs. Market anticipates tunneling for non-financial firms controlled by business groups. Loans secured in international markets convey more valuable information regarding business group firms.

9.2.1 Control variables

For the sample that are restricted to non-financial firms, the direction of estimated coefficients on control variables mostly similar to that of provided for the whole sample. In this section I am going point out if any differences exist.

I find that the coefficient of return volatility is still positive for the restricted sample which means that risky firms realize higher abnormal returns around loan announcements (Billett et al., 1995; Focarelli et al., 2008; Li & Ongena, 2015; Ongena & Roscovan, 2013). Each percent increase in standard deviation of borrower returns is associated with 0.89-0.93 percent higher abnormal returns, but has no statistical significance.

The coefficient of size in Model 4 predicts that abnormal returns increase as the size of the borrower increases. This finding is incompatible with empirical evidence provided by Slovin et al. (1992), Harvey et al. (2004), Byers et al. (2008), Focarelli et al. 2008, Ongena & Roscovan (2013), and Li & Ongena (2015).

For non-financial firms I find that profitability is negatively related with abnormal returns. One percent increase in RoA is associated between 0.15 and 0.16 percentage decrease in abnormal returns. This finding is compatible with previous loan

announcement studies which state that profitability is a proxy for the borrower's creditworthiness (Billett et al., 1995; Byers et al., 2008; Li & Ongena, 2015; Ongena & Roscovan, 2013). Negative association between profitability and abnormal returns is reported by previous studies (Byers et al., 2008; Li & Ongena, 2015; Ongena & Roscovan, 2013).

Each percent increase in tangible assets over assets increases abnormal announcement returns by 0.04 and 0.05 percent. This impact is statistically significant at 5 percent level. This finding is compatible with Harvey et al. (2004) which suggest that assets in place generate cash flow that can lead outright diversion of the resources of the firm(based on Bolton & Scharfstein, 1990; Hart & Moore, 1998; Jensen, 1986).

Long term debt has no significant impact on abnormal returns around loan announcements realized by non-financial firms. Tobin's q has insignificant and negative coefficient.

For the restricted sample, I find that the "capital expenditure" group realizes 0.37-0.65 percent lower abnormal returns around loan announcements then "general corporate purposes" realizes. The "debt repayment" group realizes 0.71-1.03 percent lower abnormal returns around loan announcements then "general corporate purposes" realizes. The impact of loan purpose is different for the restricted sample when compared to total sample multivariate analysis.

For the restricted sample, the coefficient of loan size is negative which is incompatible with the evidence reported by Li & Ongena (2015) predictions proposed by Khalil & Parigi (1998) and Lin et al. (2012). Moreover, in restricted sample short term loans are

associated with lower abnormal returns around loan announcements. This result suggests that long maturity signals higher risk associated with the borrower, therefore bank exerts increased monitoring effort. This monitoring effort is reflected in the magnitude of abnormal returns.

In restricted sample, past lending experience of lead lenders in Turkish market still explains the variation in abnormal returns. Moreover, amount extended by lead lenders in past five years has more pronounced impact. For each billion USD previous loan size abnormal returns increases by 2.48 percent, but this impact is not statistically significant. As a result of this pronounced impact the coefficient of the variable which shows whether lead lender has active subsidiary turns to negative.

9.3 Pyramid Ownership Structures

Table 33 reports univariate statistics to investigate alternative hypothesis provided in Hypothesis 3. This hypothesis implies that around international loan announcements, business group firms controlled through pyramid ownership structures realize higher abnormal returns than stand-alone firms and other business group firms realize.

Therefore, in Table 33 I compare the average cumulative abnormal returns around two groups: the borrower is non-bottom business group firm or stand-alone firm (Group 1); the borrower is business group firm controlled through pyramid structure (Group 2). The number of observations for these groups equals 52 and 23 respectively. I provide the mean abnormal return for each group and differences between means of each group. I also provide the t-statistic and p-value associated with a one-tailed test that the difference between groups is higher than zero.

Table 33 reports weak empirical evidence compatible with alternative hypothesis. For five out of all seven different event windows, abnormal returns realized is higher for business group firms controlled through pyramid ownership structures. Nevertheless, in none of the event windows the positive difference is statistically significant. For $[-1,0]$ the difference is statistically insignificant 0.57 percent. The results indicate no strong evidence that business group firms controlled through pyramid structures has higher agency costs than other business group firms and stand-alone firms.

I turn to a multivariate analysis of the relation between announcement returns and pyramid ownership structures, using the $CAR(-1;0)$ as the dependent variable in Table 34 and Table 35. Four different models specified in each table control for different sets of borrower characteristics, loan characteristics, loan purpose, loan structure, lender characteristics and year fixed effects. To investigate the impact of pyramid ownership structures I include two different explanatory variables: bottom and pyramid layer.

In Table 34, I employ multivariate regression analysis for the full sample of 75 loan announcements in which borrowers are non-financial firms. I use the two-day announcement period $(-1,0)$ abnormal returns as the dependent variable. The regression model is provided in Equation (8a). Along with sets of control variables, I use bottom indicator to measure control through pyramid ownership structure.

The results I present in Table 34 provide evidence supporting the alternative hypothesis provided in alternative hypothesis that pyramid ownership structures are associated with higher agency costs. The estimated coefficient of dummy variable of bottom shows that

pyramid ownership structures realize significantly higher abnormal returns between 0.55 and 1.26. The coefficient of bottom is statistically insignificant for all specifications.

In Table 35, I present results of the complementary multivariate analysis for non-financial firms to test alternative hypothesis (Hypothesis 3). I use pyramid layer as an explanatory variable and two days abnormal returns for event window $[-1;0]$ as the dependent variable. The regression model is provided in Equation (8b). Table 35 provides additional support for the findings reported in Table 34. I find that the estimated coefficient of pyramid layer is between 0.55 and 0.95. Model 4 in which I use all sets of control variables, shows that each pyramid layer is associated with 0.95 percent higher abnormal returns around loan announcements. This effect is significant at 0.05 level. The average $CAR(-1;0)$ for the whole sample of loan announcements in which borrowers are non-financial is 0.47 percent. Therefore the realized abnormal returns of 0.95 percent for each pyramid layer are economically significant.

Results indicate that investors anticipate tunneling by the controlling shareholder if the business group firm is controlled through pyramid structures. Loans secured in international markets convey more valuable information regarding business groups within pyramids because these loans alleviate investors' concern for tunneling.

9.4 Interaction Analysis

In Tables 30 to 35, I provide evidence for non-financial firms that supports alternative hypothesis (Hypothesis 2 and 3). Now I turn to multivariate analysis to investigate Hypothesis 4. Hypothesis 4 implies that for non-financial firms, realized abnormal

returns around international loans for firms that has pyramid structure does not increase with factors that intensify tunneling incentives. Those factors are the firm has higher profitability, the firm has higher Tobin's Q and the firm has lower leverage. The alternative hypothesis 4 implies that realized abnormal returns around international loans for firms that have pyramid structure increase with higher profitability, higher Tobin's q and lower long term debt.

For each factor, I present four models in which $CAR(-1;0)$ is dependent variable. I use models 1 and 2 to examine bottom variable. I use models 3 and 4 to examine pyramid layer variable. Models 1 and 3 are the models specified in Equation 8a and 8b respectively. In models 2 and 4, I provide the estimation for Equation 9a and 9b respectively. All multivariate models provided in this chapter consider all of the control variables such as borrower characteristics, loan characteristics, loan purpose, loan structure and lender characteristics.

9.4.1 Non-financial firms have higher profitability

In this part I investigate whether agency costs of pyramid ownership structures are higher for non-financial firms with higher level of profitability. Table 36 presents the evidence of this investigation. I partition non-financial firms into those with high profitability and those with low profitability. The borrowers below median RoA are assumed to have low profitability and the borrowers above median RoA are assumed to have high profitability.

In Table 36, for all of the models I find that profitability is negatively related with abnormal returns. One percent increase in RoA is associated between 0.14 and 0.17

percentage decrease in abnormal returns. In model 2 the coefficient for RoA is statistically significant. This result is consistent with previous literature that profitability is a proxy for credibility of borrower. Starting by Billett et al. (1995) previous literature uses profitability as a proxy for the borrower's creditworthiness (Byers et al., 2008; Li & Ongena, 2015; Ongena & Roscovan, 2013). Therefore, the value of bank information production regarding borrowers is higher for borrowers with lower levels of credibility.

Model (2) in Table 36 shows that for the borrowers with high profitability, being bottom increases abnormal returns by 1.93 percent. This impact is statistically significant at 0.05 level. For borrowers with low profitability, being bottom increases abnormal returns by 0.63 percent which is statistically insignificant. Model (4) in Table 36 predicts the same result. For the borrowers with high profitability, increasing pyramid layer by one level increases abnormal returns by 1.14 percent. This result is significant at 0.01 level. For the borrowers with low profitability, increasing pyramid layer by one level increases abnormal returns by insignificant 0.70 percent.

Table 36 provides evidence that investors anticipate higher incentives of tunneling for business group firms that are controlled through pyramid ownership structures and have high levels of profitability. Therefore, new information conveyed by international loans is more valuable for the firms with pyramid structure if they have higher profitability. Firms controlled through pyramid structures realize higher abnormal returns when they have higher profitability. This evidence gives a support for alternative hypothesis which implies higher agency costs associated with pyramid ownership structures.

9.4.2 Non-financial firms have lower long term debt

In Table 37, I further investigate whether agency costs of pyramid ownership structures are higher for firms with lower levels of long term debt. I consider the median level of long term debt over total assets to partition firms into those with lower levels of long term debt and those with higher levels of long term debt.

All of the models in Table 37 show that long term debt have no significant impact on abnormal returns. Model 2 in Table 37 predicts that for the borrowers with low long term debt, being bottom increases abnormal returns by 2.27 percent. This impact is statistically significant at 0.1 level. For borrowers with high long term debt, being bottom increases abnormal returns by 0.51 percent with no statistical significance. Model 4 in Table 37 provides similar results by using pyramid layer variable. For the borrowers with low long term debt, increasing pyramid layer by one level increases abnormal returns by 1.71 percent. This result is significant at 0.05 level. For the borrowers with high long term debt, increasing pyramid layer by one level increases abnormal returns by 0.49 percent.

Table 37 provides evidence that borrowers that have pyramid ownership structure realize higher abnormal returns around international loan announcements if they have low levels of long term debt. This evidence gives a support for alternative hypothesis which implies that pyramid ownership structures are associated with higher agency costs.

9.4.3 Non-financial firms have higher Tobin's q

In Table 38, I present evidence that searches for whether agency costs of pyramid ownership structures are higher for non-financial firms with higher levels of Tobin's q. I partition non-financial firms into those with lower level of Tobin's q and those with higher level of Tobin's q by considering the median of empirical distribution of Tobin's q.

In all models of Table 37, Tobin's q has insignificant and negative coefficient. Model 4 in Table 37 predicts that for the borrowers with high Tobin's q being a bottom firm increases abnormal returns by 1.43 percent. For the borrowers with low Tobin's q, being a bottom firm increases abnormal returns by 0.79 percent. Both coefficients are statistically insignificant. Model 4 in Table 37 predicts that for the borrowers with high Tobin's q, increasing pyramid layer by one level increases abnormal returns by 1.20 percent. This impact is statistically significant at 0.05 level. For the borrowers with low Tobin's q, increasing pyramid layer by one level increases abnormal returns by 0.44 percent.

Table 38 indicates that investors consider potential for business group firms if they have high growth potential. Nonetheless, they anticipate tunneling for business group firms especially if they are controlled through pyramid ownership structures. The anticipation of tunneling diminishes the growth potential of these firms. Therefore, new information conveyed by international loans is more valuable for the firms with pyramid structure if they have higher growth potential. International loans extended to firms within pyramid structures bring higher value if the borrower has high Tobin's q. These results support

for alternative hypothesis which implies higher agency costs associated with pyramid ownership structures.



CHAPTER X

CONCLUSION

10.1 Summary of findings

This study investigates market responses to information conveyed around bank loan announcements regarding agency costs associated with publicly listed business group firms in emerging markets. I address two research questions. Do listed firms controlled by business groups have higher agency costs when compared to stand-alone firms? Does control through pyramid ownership structures increase agency costs of business group listed firms?

10.1.1 Findings about agency costs associated with business group firms

Controlled for other factors, abnormal returns around loan announcements measure agency costs associated with borrowers. Accordingly, that abnormal announcement returns is significantly higher for business group controlled firms compared to the null hypothesis. In my sample of 313 international loan announcements two days abnormal returns around loan announcements $[CAR(-1,0)]$, averages 0.18 percent and not statistically significant.

In business group firms, agency costs are related to the tunneling incentives of the controlling shareholder. If investors do not anticipate tunneling by the controlling shareholder within business group firms, the average abnormal return around loan announcements that business group firms realizes should not be different than 0.18 percent. Univariate analysis indicate that loans extended to business group firms are associated with 0.61 percent higher two days abnormal returns ($CAR[-1,0]$) which is statistically significant at 5 percent level.

Multivariate analysis of borrower CARs around loan announcements control for six set of controls with 14 different independent variables therefore they provide sharper evidence on testing my null hypothesis. The null hypothesis of business group control does not lead to abnormal returns implies that the coefficient of the variable that measures business group control should not be significantly different from zero. I find that after controlled for other factors, business group control is associated with 0.57-0.64 percent higher abnormal returns which is statistically significant in all of the specifications but one.

I redo my analysis for the sample of 75 international loan announcements restricted to the non-financial borrowers. In restricted sample, two days abnormal returns around loan announcements [$CAR(-1,0)$], averages 0.47 percent and statistically significant at five percent level.

Univariate analysis does not provide strong evidence to reject null hypothesis that investors do not attribute higher agency costs to business group firms. I find that non-financial business group firms are associated with insignificant 0.18 percent higher two

days abnormal returns ($CAR[-1,0]$) when benchmarked against non-financial stand-alone firms.

In multivariate analysis of borrower CARs for restricted sample, I use additional controls of financial statements. I find that after controlled for other factors, business group control is associated with 2.14-2.20 percent higher abnormal returns which are statistically significant at one percent level.

10.1.2 Findings about agency costs associated with pyramid ownership structures

Next, abnormal announcement returns is significantly higher for firms controlled through pyramid ownership structures compared to the null hypothesis. If investors do not attribute higher agency costs to pyramid ownership structures, the average abnormal return around loan announcements realized by business group firms controlled through pyramid structures (bottom firms) should not be different than full sample average of 0.18 percent. I find that bottom firms are associated with 0.60 percent higher two days abnormal returns ($CAR[-1,0]$) which is statistically significant at 10 percent level.

In multivariate analysis, I use bottom dummy and pyramid layer variables to measure pyramid ownership structures. My alternative hypothesis that agency costs increase for higher levels of bottom and pyramid layer predicts coefficients of bottom and pyramid layer is significantly positive when regressed against abnormal returns. I find that being bottom firm leads to 0.59-0.66 percent higher abnormal returns and each pyramid layer brings 0.31-0.34 percent higher abnormal returns. For restricted sample of non-financial firms I find statistically significant impact that each pyramid layer increases abnormal returns by 0.55-0.97 percent.

10.1.3 Findings about enhanced agency costs associated with interaction of pyramids and tunneling incentives

Controlled for other factors, abnormal returns around loan announcements should be more pronounced if the controlling shareholder's tunneling incentives are higher and the firm has pyramid structure is compared to the null hypothesis. I consider that higher control exercised on firm by business group, lower quality of corporate governance of the firm, higher levels of information opacity, higher risk of the borrower, presence of economy-wide crisis, higher levels of profitability, lower levels of long term debt and higher growth opportunities measured by Tobin's q increase tunneling incentives of the controlling shareholder.

I find that pyramid ownership structures lead to significantly higher abnormal returns when interacted with the following factors: voting rights of the controlling shareholder exceeds 50 percent, the firm has lower quality of corporate governance, the firm is small or young, the firm has higher risk, there exists an economy wide crisis, the firm has higher profitability, the firm has lower long term debt, and the firm has higher Tobin's Q.

10.2 Implications of our findings and directions for future research

Researchers investigate reasons behind several empirical facts regarding ownership of corporations in emerging markets. These facts are (1) the majority of corporations are not widely held but controlled by large ownership blocks; (2) the ultimate controllers are mainly business groups that are bound together with ownership links or informal social ties; (3) the majority of corporations are controlled through pyramid structures.

There exists two alternative hypothesis regarding business group control and pyramid ownership structures in emerging markets. First hypothesis focuses on the market failure (Guillén, 2000) or institutional voids (Yiu et al., 2007). Poor institutions, undeveloped markets and inefficient regulations dominate emerging markets. Business groups serve as substitutes for these institutions, markets and regulations when the efficient allocation function of inputs fails (Leff, 1978).

Alternative hypothesis focuses on the benefits of control at the expense of investors. This view suggests that distorted incentives emerge from agency problems between business groups and investors leads to agency costs in financial markets. Researchers mostly investigate agency costs emerge from tunneling of resources out of the firm by its controlling shareholder.

Two alternative theories on business group control also have different views on formation of pyramid ownership structures. First view assumes that pyramids are means of enhancing control without increasing cash flow rights. The wedge between cash flow rights and control obtained by pyramid structures increases the incentives of tunneling of resources to business groups. On the other hand, second view proposes that pyramid structures are formed to use advantages of indirect equity finance by leveraging the retained earnings of listed firms (H. Almeida et al., 2011; H. V. Almeida & Wolfenzon, 2006; Bena & Ortiz-Molina, 2013; Masulis et al., 2011).

Researchers compare alternative hypotheses on business group control and pyramid ownership structures by measuring benefits and costs by accounting measures and market values. This study uses an alternative approach depends on information problem

intrinsic to the agency costs. Investors do not have perfect information regarding the behavior of the controlling shareholder. Moreover, it is difficult for investors to establish a contract that requires a commitment for the controlling shareholder not to tunnel. Therefore, banks can provide useful information that alleviates information problem. Moreover, they can monitor the controlling shareholder to prevent future moral hazard.

Information conveyed around loan announcements is previously used to analyze the agency problem between managers and shareholders. It is more robust approach to use this mechanism to investigate the agency problem between the controlling shareholder and minority shareholders. Banks confront with higher default risk and lower recovery rates when borrowers have controlling shareholders. Therefore, banks monitoring incentives are higher in that kind of agency problem.

My results indicate that besides benefits of business groups there exist agency costs associated with business groups. When investors anticipate higher tunneling incentives of the controlling shareholder they price the firms accordingly. Therefore, abnormal returns around loan announcements show the level of agency costs. I show that agency costs associated with business groups do not distributed uniformly, there exists cross sectional variation and times series variation regarding agency costs of business group firms.

The most important factor in cross sectional variation is ownership structure. Business group firms controlled through pyramid ownership structures are associated with control cash flow wedge. Therefore, market anticipates that tunneling incentives are higher for business group firms that are controlled through pyramid structures. International loans

extended to business group firms within pyramid structures alleviate tunneling concerns of investors. In compatible with this prediction, I find that abnormal returns around loan announcements are higher for firms within pyramid ownership structures when benchmarked against stand-alone firms and other business group firms.

Lastly and more importantly I find that for business group firms within pyramids tunneling concerns of investors are not distributed uniformly. Investors anticipate higher tunneling incentives when control power of the business group exercised on the firm is high, when the firm has lower quality of corporate governance, when the firm is opaque and when the firms has high risk. For those firms international loan announcements convey more valuable information because they alleviate tunneling concerns of investors. Similarly, I find that investors anticipate higher tunneling incentives when the economy is in economic crisis. Abnormal returns around international loans are higher for business group firms in the presence of economy wide crisis.

For non-financial firms, investors anticipate higher tunneling for high profitability firms and firms with high growth opportunities. As a result, loan announcements convey more important for those firms in order to alleviate tunneling concerns. I find that abnormal returns are higher when business groups firms within pyramids have higher profitability and higher Tobin's q . For non-financial firms long term debt over total assets show level of existing monitoring of the firm by lenders. Therefore, international loan announcements convey less valuable information for investors to alleviate their tunneling concerns. As a result, I find that if the business group firm within pyramids has high long terms debt abnormal returns around international loan announcements is lower.

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APPENDIX: TABLES

Table 1 Forms of tunneling the controlling shareholder (Atanasov et al. 2014)

This table provides main forms of tunneling. Table is provided by (Atanasov et al. 2014).

Transaction Type	Details and Variations
PANEL A: CASH FLOW TUNNELING	
Transfer Pricing	Overpaying for inputs, undercharging for outputs
Executive compensation	Excessive cash compensation and “perks”
Other payments to insiders	Excessive payments for services; loans at below-market interest rates
Small scale asset purchases and sales (inventory etc.)	Overpaying for purchases; undercharging for sales
PANEL B: ASSET TUNNELING	
Transactions involving tangible assets	Sales of assets at discounts; purchasing of assets at inflated prices; granting use of productive assets at below-market rent/lease rates
Transactions involving intangible assets	Providing intellectual property for below fair value; acquiring intellectual property for more than fair value; diverting business opportunities to related parties
Investments in affiliates	Equity investments in affiliates

PANEL C: EQUITY TUNNELING

Equity dilution	Issuance of shares or securities convertible into shares for less than fair value; repurchases of shares for more than fair value; excessive equity-based executive compensation; insider trading
Freeze-outs	Freeze-out of minority shareholders for less than fair value; going dark/delisting
Sales of control	Sales of control with preferential terms for controlling shareholders; excessive golden parachutes

Table 2 Studies on the agency problem due to the concentrated ownership

Sampling frame refers to how the authors compiled the sample used in the different studies. Empirical methodology describes how the agency problem is analyzed. Findings summarize the main results of the different studies.

Authors	Sample	Empirical Methodology	Findings
Panel A - Studies analyzes the link between concentrated ownership and firm value			
Claessens, Djankov, Fan and Lang (2002)	1,301 firms from eight East Asian economies	They use regression analysis where market to book ratio is dependent variable; cash flow rights of the largest shareholder and the control cash flow wedge of the largest shareholder are explanatory variables.	They find that increase in ownership of the largest shareholder increases firm value whereas control cash flow wedge decreases firm value. The negative relation between firm value and the control cash flow wedge is more pronounced when the large shareholder is family owned business group.
Lins (2003)	1433 firms from 18 emerging markets.	They use regression analysis where Tobin's Q is dependent variable; control rights of the largest managing shareholder and the control cash flow wedge of the largest managing shareholder are explanatory variables.	He finds that control cash flow wedge is negatively related to Tobin's Q. Control in the 5% to 20% range is also negatively related to Q.

Authors	Sample	Empirical Methodology	Findings
Joh (2003)	5,829 firms from Korea.	They use regression analysis where return on assets is dependent variable; the control cash flow wedge and business group dummy is explanatory variable.	They find that both business group dummy and the control cash flow wedge are negatively related to return on assets.
Villalonga and Amit (2006)	508 Fortune 500 U.S. firms	They use regression analysis where Tobin's q is dependent variable; pyramid dummy and the control cash flow wedge of the largest managing shareholder are explanatory variables.	They find that both pyramid dummy and the control cash flow wedge are negatively related to Tobin's q.
Atanasov, Black, Ciccotello, Gyoshev (2010)	1,040 firms from Bulgaria.	They analyze the impact of new law enacted to prohibit equity tunneling of listed firms. They use regression analysis where Tobin's q after the law enacted is dependent variable; the computed propensity to tunnel and concentrated ownership dummies are explanatory variables.	They find that both propensity to tunnel and concentrated ownership dummies are positively related to Tobin's q after the law enacted.
Connelly et al. (2012)	216 firms from Thailand.	They use regression analysis where Tobin's q is dependent variable; the control cash flow wedge dummy is explanatory variable.	They find that control cash flow wedge dummy is negatively related to Tobin's q.

Authors	Sample	Empirical Methodology	Findings
Panel B - Studies investigates the tunneling by ultimate controller			
Bernard, Mehta and Mullainathan (2002)	Sample of 18,600 Indian firms	They use regression analysis where profitability of respective group firms is dependent variable; the profitability of other group firms and industry profitability shock are explanatory variables.	They find that group firms' profitability show lower sensitivity to industry shocks. Moreover, they show group firms with low control cash flow wedge is more sensitive to their own group's shocks.
Bae, Kang and Kim (2002)	Sample of 107 mergers in Korea	They use event study methodology to analyze market reactions around mergers. Around intra group mergers, they analyze market reactions both to bidders and other member firms.	They find a positive announcement effect for the shareholders of the acquiring firms for non-group bidders. On the other hand, they show group bidders realize significant negative announcement returns and the concentrated ownership in group bidders is negatively related to bidder announcement returns, but positively related to announcement returns of the value-weighted portfolio of other firms in the same group.

Authors	Sample	Empirical Methodology	Findings
Baek, Kang and Lee (2006)	Sample of 262 private placements of equity linked securities in Korea	They use regression analysis where the difference between offer price and market price is dependent variable; respective ownership rights of the controlling shareholder for issuer and acquirer group firms are explanatory variables. Moreover, they use event study methodology to analyze market reactions around equity offerings.	They find that in intragroup deals, prices set at premium or discount to ensure that controlling shareholder gains to the injury of minority shareholders. Moreover, they show that market rewards the group firms that gain and penalizes the group firms that loose after the deal is accomplished.
Jiang, Lue and Yue (2010)	Sample of 1377 Chinese firms	They use regression analysis where market value over assets and return on assets are dependent variable for different models; the proxy for amount of tunneling (the amount of loans disguised under other receivables) is an explanatory variable for each model. Moreover, they use another regression where the proxy for amount of tunneling is dependent variable and the cash flow right of the controlling shareholder is the explanatory variable.	They find that disguised intragroup loans are extended to controlling shareholders or their affiliates. The tunneling is more severe when control rights exceed cash flow rights. Moreover, they show that market discounts the value of the firms that extend loans extensively and has high profitability. Consistently, the accounting performance of lending firms sharply decreases due to tunneling activities.

Table 3 Variables that Control for Borrower Characteristics

This table describes borrower characteristics that explain cross sectional variation in abnormal returns around bank loan announcements. Definition column provides the definition of the variable used in the study. Each variable is used by different studies provided in authors column.

Variable	Definition	Authors
Internal monitoring quality	Binary variable of XKUR that differentiates between good governance and bad governance	Byers et al.(2008)
Size	Total Assets	Slovin et al.(1992), Harvey et al.(2004), Focarelli et al.(2008), Byers et al.(2008), Ongena & Roscovan(2013), and Li & Ongena(2015)
Risk	Standard deviation of daily returns of the borrower's traded shares within one year of estimation window	Billett et al.(1995), Focarelli et al.(2008), Byers et al.(2008), Ongena & Roscovan(2013), and Li & Ongena(2015)
For non-financial firms only		
Debt	Long term debt/Total assets	Billett et al.(1995), Harvey et al.(2004), Focarelli et al.(2008), Byers et al.(2008), Ongena & Roscovan(2013), and Li & Ongena(2015)
Tobin's Q	(book value of debt + market value of equity) / total assets	Billett et al.(1995), Harvey et al.(2004), Byers et al.(2008), and Ongena & Roscovan(2013)

Profitability	Return on Assets	Billett et al.(1995), Focarelli et al.(2008), Byers et al.(2008), Ongena & Roscovan(2013), and Li & Ongena(2015)
Tangible assets	Tangible assets / Total assets	Harvey et al.(2004)



Table 4 Variables that Control for Loan Characteristics

This table describes loan characteristics that explain cross sectional variation in abnormal returns around bank loan announcements. Definition column provides the definition of the variable used in the study. Each variable is used by different studies provided in authors column.

Variable	Definition	Authors
Purpose of the loan	five exhaustive dummy variables that categorize loan announcements according to the purpose of the loan: capital investment, general corporate purposes, restructuring, debt repayment, no purpose identified	James (1987), Slovin et al.(1992), and Boscaljon & Ho(2005)
Loan size	Loan size in million USD	Slovin et al.(1992), Billett et al.(1995), Focarelli et al.(2008), Ongena & Roscovan(2013), and Li & Ongena(2015)
Maturity	Dummy variable of short term which is equal to one if the maturity of the loan is shorter than one year and no maturity is specified	James (1987), Slovin et al.(1992), and Billett et al.(1995)
Secured	Dummy variable which is equal to one if a collateral pledged against loan	Lummer & McConnell(1989), Slovin et al.(1992)
Term loan vs. lines-of-credit	Dummy variable which is equal to one if a loan is line of credit	Lummer & McConnell(1989), Slovin et al.(1992), and Li & Ongena(2015)

Table 5 Variables that Control Loan Structure

This table describes loan structure characteristics that explain cross sectional variation in abnormal returns around bank loan announcements. Definition column provides the definition of the variable used in the study. Each variable is used by different studies provided in authors column.

Variable	Definition	Authors
Syndicated Loan	Syndicated dummy variable which is equal to one if the number of lenders is higher than one	Billett et al.(1995), Preece & Mullineaux(1996), Li & Ongena(2015)
The share retained by lead lenders	For syndicates, size of the loan that retained by all of lead lenders / Total Size of the loan For non-syndicates it is 100%	Focarelli et al.(2008)
Whether loan is subsequent	Subsequent dummy variable which is equal to one if the borrower get another loan from international market in previous five years	Lummer & McConnell(1989), Slovin et al.(1992), Harvey et al.(2004)

Table 6 Variables that Control Lender Characteristics

This table describes lender characteristics that explain cross sectional variation in abnormal returns around bank loan announcements. Definition column provides the definition of the variable used in the study. Each variable is used by different studies provided in authors column.

Variable	Definition	Authors
Lending experience in Emerging market	Total amount of loans extended by the bank to emerging market in last five years. For syndicated loans, I consider the portion retained by lead lenders.	(De Haas & Van Horen, 2013)
Lending experience in Emerging market	Subsidiary dummy variable which is equal to one if the bank owns a bank subsidiary in the emerging market active in last five years.	(De Haas & Van Horen, 2013)

Table 7 Firm Specific Factors that Affect Agency Costs in Hypothesis 4

This table presents predictions of Hypothesis 4 through variables and estimated coefficients of models in Equation (8a) and (8b). Hypothesis 4 predicts the interaction of factors that influences agency costs with Bottom and Pyramid Layer variables. β_1 and β_2 are coefficients of interests which shows how interaction variables affect abnormal returns. β_1 estimates the interaction of Bottom and Pyramid Layer variables with upper values of the factor. β_2 estimates the interaction of Bottom and Pyramid Layer variables with lower values of the factor. The last column of the table provides the prediction of Hypothesis 4 on the difference between β_1 and β_2 considering the level of agency costs associated with the upper and lower values of the factor.

Factor (F) that influences agency costs	Variable associated with the factor	Threshold value if the variable is not binary	Upper Values of Factor($\bar{F}$) for each borrower j	Lower Values of Factor($\underline{F}$) for each borrower j	Predicted difference between coefficients $\beta_1 - \beta_2$
Voting rights of the controlling shareholder	Total cash flow rights of the controlling shareholder (1-total cash flow rights of minority shareholders)	Voting rights of the controlling shareholder is 50 percent	Voting rights of the controlling shareholder ≥ 50 percent	Voting rights of the controlling shareholder < 50 percent	+ (higher control power increases moral hazard incentives)
The quality of corporate governance	XKUR that differentiates between good governance and bad governance	binary	XKUR=1 (firm has high quality of corporate governance)	XKUR=0 (firm has low quality of corporate governance)	- (good governance decreases moral hazard incentives)

Factor (F) that influences agency costs	Variable associated with the factor	Threshold value if the variable is not binary	Upper Values of Factor($\bar{F}$) for each borrower j	Lower Values of Factor($\underline{F}$) for each borrower j	Predicted difference between coefficients $\beta_1 - \beta_2$
The quality of corporate governance	Banking firm dummy	binary	BANK=1 (firm has high quality of corporate governance)	BANK=0 (firm has low quality of corporate governance)	- (good governance decreases moral hazard incentives)
Informational opacity of the firm	Total assets	25 th percentile of the empirical distribution	Total assets of the borrower $\geq 25^{\text{th}}$ percentile of empirical distribution	Total assets of the borrower $< 25^{\text{th}}$ percentile of empirical distribution	+ (informational opacity increases moral hazard incentives)
Informational opacity of the firm	Age at the issue of the loan in days (loan issue date – incorporation date)	25 th percentile of the empirical distribution	Age of the borrower $\geq 25^{\text{th}}$ percentile of empirical distribution	Age of the borrower $< 25^{\text{th}}$ percentile of empirical distribution	+ (informational opacity increases moral hazard incentives)

Factor (F) that influences agency costs	Variable associated with the factor	Threshold value if the variable is not binary	Upper Values of Factor($\bar{F}$) for each borrower j	Lower Values of Factor($\underline{F}$) for each borrower j	Predicted difference between coefficients $\beta_1 - \beta_2$
Risk of the firm	Return volatility (st.dev. of the borrower's returns within one year of estimation window)	Median of the empirical distribution	Return volatility $\geq$ Median of empirical distribution	Return volatility $<$ Median of empirical distribution	+ (riskiness of the firm increases moral hazard incentives)
Whether there exists an economy wide crisis	Binary variable of Crisis takes value of one if the issue date is in 2009 or 2010	binary	Binary variable takes value of one if the issue date is in 2009 or 2010	Binary variable takes value of one if the issue date is <u>not</u> in 2009 or 2010	+ (economy wide crisis increases moral hazard incentives)
Profitability of non-financial firms	Return on Assets (RoA)	Median of the empirical distribution	RoA of the borrower $\geq$ Median of empirical distribution	RoA of the borrower $<$ Median of empirical distribution	+ (because higher cash flows increases moral hazard incentives)

Factor (F) that influences agency costs	Variable associated with the factor	Threshold value if the variable is not binary	Upper Values of Factor($\bar{F}$) for each borrower j	Lower Values of Factor($\underline{F}$) for each borrower j	Predicted difference between coefficients $\beta_1 - \beta_2$
Tobin's q of nonfinancial firms	(book value of debt + market value of equity) / total assets	Median of the empirical distribution	Tobin's Q of the borrower $\geq$ Median of empirical distribution	Tobin's Q of the borrower $<$ Median of empirical distribution	+ (because higher Tobin's Q increases moral hazard incentives)
Long term debt of nonfinancial firms	Long term debt/total assets	Median of the empirical distribution	Long term debt of the borrower $\geq$ Median of empirical distribution	Long term debt of the borrower $<$ Median of empirical distribution	- (because higher leverage decreases moral hazard incentives)

Table 8 Ownership structure identification at business group level by Year

This table reports annual descriptive statistics on firms in the ownership structure sample for the period between 2003 and 2016. Summary statistics for each variable are calculated by examining averages across business groups.

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Tot. No. of Groups	250	250	250	250	256	271	274	274	277	280	284	284	284	284
Ave. No. of Firms	8.2	8.2	8.1	8.1	8.4	11.4	12.0	13.3	13.3	14.6	16.4	16.4	17.9	17.9
Ave. No. of Listed	0.8	0.8	0.8	0.8	0.8	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Ave. No. of Bottom	1.4	1.4	1.4	1.4	1.4	3.3	3.6	4.3	4.2	5.1	5.5	5.5	6.0	6.0
Ave. Pyramid Layer	0.1	0.1	0.1	0.1	0.1	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3

Table 9 Loans secured from international loan market between 2003 and 2016

This table reports borrower identifiers and deal amount statistics of loans secured by Turkish firms from international loan market between 2003 and 2016.

	Frequency	Mean	SD	Distribution		
				10th	50th	90th
Borrower Identifiers						
State Dummy	646	0.183	0.387	0	0	1
Listed Firm Dummy	646	0.484	0.500	0	0	1
Bank Dummy	646	0.498	0.500	0	0	1
Other Financial Ins. Dummy	646	0.042	0.200	0	0	0
Other						
Deal Amount (in Mil. USDs)	646	537.2	651.7	50	300	1,342

Table 10 International Loan Deals to the Firms listed in BIST

This table provides descriptive statics for the sample that provide the base for my univariate and multivariate analysis.

	Freq.	Mean	SD	Distribution		
				10th	50th	90th
Panel A: Type of Borrower						
Bank Dummy	313	0.748	0.435	0	1	1
Other Financial Ins. Dummy	313	0.013	0.113	0	0	0
Non-Financial Dummy	313	0.240	0.428	0	0	1
Panel B: Ownership Structure						
State Controlled Dummy	313	0.128	0.334	0	0	1
Group Dummy	313	0.623	0.485	0	1	1
Bottom Dummy	313	0.198	0.399	0	0	1
Pyramid Layer	313	0.36	0.83	0	0	1
Voting Rights (%)	313	63.2	17.6	43.2	66.8	83.4
Panel C: Loan Characteristics						
Size (in Million \$)	313	656.3	560.2	100.0	500.0	1482.5
Number of tranches	313	1.6	0.7	1	2	2
Maturity (days)	279	943	1074	364	365	2679
Short Term	313	0.454	0.499	0	0	1
Credit Line	313	0.198	0.399	0	0	1
Secured	313	0.316	0.466	0	0	1
Panel D: Loan Purpose						
Capital Expenditure	313	0.070	0.256	0	0	0
General Corporate Purposes	313	0.818	0.387	0	1	1
Debt repayment	313	0.096	0.295	0	0	0
Restructuring	313	0.006	0.080	0	0	0
Other purposes	313	0.010	0.098	0	0	0

	Freq.	Mean	SD	Distribution		
				10th	50th	90th
Panel E: Loan Structure						
Syndicated	313	0.821	0.384	0	1	1
Number of Lenders	313	19	18	1	14	46
Number of Lead Lenders	313	11	10	1	9	25
Lead Retained (%)	313	76.5	26.8	39.7	88.9	100
Subsequent	313	0.911	0.286	1	1	1
Panel F: Lender Characteristics						
Lead’s Previous Amo.(in Mil. \$)	313	272.2	382.6	0.0	120.1	830.0
Lead’s Previous Number of Loans	313	8	10	0	5	20
Lead has subsidiary in Turkey	313	0.690	0.463	0	1	1
Panel G: Borrower Characteristics						
XKUR	313	0.281	0.450	0	0	1
Return volatility(%)	313	2.52	0.65	1.79	2.37	3.46
Assets(in Billion \$)	313	35.5	34.0	2.2	23.2	88.5
Age	313	53.3	24.5	16.7	60.9	82.3
Panel H: Non-financial Borrower Characteristics						
Long term debt/total assets (%)	75	22.6	14.9	6.4	19.0	45.7
RoA (%)	75	4.2	5.7	-0.2	3.3	11.9
Tobin’s q	75	1.4	0.6	0.7	1.3	2.2
Tangible assets/total assets(%)	75	37.5	19.4	13.9	39.9	65.0

Table 11 International Loan Deals to the Firms listed in BIST

This table presents descriptive statistics calculated at the loan level. It compares stand-alone firms and business group firms.

	Stand-alone Firms			Business group firms		
	Freq.	Mean	SD	Freq.	Mean	SD
Panel A: Loan Characteristics						
Size (in Million \$)	118	619.4	43.1	195	678.6	43.6
Number of tranches	118	1.58	0.06	195	1.62	0.05
Maturity (days)	100	754.8	106.1	179	1048.7**	80.0
Short Term	118	0.517	0.046	195	0.415	0.035
Credit Line	118	0.212	0.038	195	0.190	0.028
Secured	118	0.288	0.042	195	0.333	0.034
Panel B: Loan Structure						
Syndicated	118	0.856	0.032	195	0.800*	0.029
Number of Lenders	118	20.7	1.7	195	18.5	1.3
Number of Lead Lenders	118	11.7	0.8	195	11.3	0.7
Lead Retained (%)	118	73.3	2.4	195	78.5*	1.9
Subsequent	118	0.958	0.019	195	0.882*	0.023

	Stand-alone Firms			Business group firms		
	Freq.	Mean	SD	Freq.	Mean	SD
Panel C: Lender Characteristics						
Lead's Previous Amo. (in Mil. \$)	118	265.8	31.0	195	276.0	29.3
Lead's Previous Number of Loans	118	8.1	0.8	195	8.6	0.8
Lead has subsidiary in Turkey	118	0.669	0.043	195	0.703	0.033
Panel D: Borrower Characteristics						
XKUR	118	0.186	0.036	195	0.338***	0.034
Return volatility (%)	118	2.5	0.1	195	2.5	0.0
Assets(in Billion \$)	118	38.0	3.1	195	34.0	2.5
Age	118	56.7	2.5	195	51.3**	1.6
Panel E: Non-financial Borrower Characteristics						
Long term debt/total assets (%)	14	33.8	3.5	61	20.0***	1.8
RoA (%)	14	1.1	0.6	61	4.9**	0.8
Tobin's q	14	1.0	0.0	61	1.5***	0.1
Tangible assets/total assets(%)	14	45.3	6.8	61	35.7**	2.3

Table 12 CARs around Loans (%)

This table reports cumulative abnormal returns in percentages for different event windows around international loan announcements.

	Freq.	Mean	SD	10th	50th	Distribution 90th	H _A :Mean>0 t-stat	p-value
Panel A: Total Sample								
CAR(-5;5)	313	0.34	5.90	-5.86	-0.38	6.67	1.01	0.156
CAR(-3;3)	313	0.02	4.48	-4.71	-0.34	4.74	0.10	0.462
CAR(-2;2)	313	0.17	3.96	-3.83	-0.30	4.59	0.75	0.228
CAR(-1;1)	313	0.16	3.24	-3.35	-0.13	3.67	0.87	0.192
CAR(-5;0)	313	0.31	4.52	-4.20	-0.13	4.87	1.20	0.116
CAR(-3;0)	313	0.12	3.41	-3.53	-0.34	3.90	0.61	0.271
CAR(-1;0)	313	0.18	2.80	-2.38	-0.16	3.04	1.11	0.133
Panel B: Business Group firms								
CAR(-5;5)	195	0.45	5.88	-6.11	-0.49	7.01	1.08	0.141
CAR(-3;3)	195	0.18	4.61	-4.80	-0.27	4.74	0.55	0.291
CAR(-2;2)	195	0.27	4.01	-3.94	-0.08	4.60	0.94	0.172
CAR(-1;1)	195	0.38	2.96	-3.22	0.12	4.19	1.81**	0.035
CAR(-5;0)	195	0.27	4.36	-4.63	0.18	4.84	0.85	0.197
CAR(-3;0)	195	0.26	3.37	-3.65	-0.39	4.24	1.07	0.143
CAR(-1;0)	195	0.41	2.37	-2.20	0.13	3.24	2.39***	0.009
Panel C: Bottom firms								
CAR(-5;5)	62	1.21	6.62	-6.11	0.03	7.36	1.44*	0.077
CAR(-3;3)	62	0.83	5.56	-4.80	0.62	4.63	1.18	0.122
CAR(-2;2)	62	0.78	4.85	-3.35	0.16	5.33	1.27	0.104
CAR(-1;1)	62	0.58	3.74	-3.75	0.10	4.43	1.23	0.112
CAR(-5;0)	62	0.57	4.66	-5.35	0.54	5.57	0.97	0.168
CAR(-3;0)	62	0.32	3.15	-3.58	0.06	4.41	0.79	0.216
CAR(-1;0)	62	0.66	2.50	-1.78	0.34	3.17	2.08**	0.021

Table 13 CARs according to borrower characteristics

This table investigates borrower characteristics as a source of two days abnormal returns (CAR[-1,0]) around international loan announcements.

	Sample	CAR (%)	Diff. (high-low sorts)	HA: Difference>0 t-stat	p-value
Borrower is in XKUR	225	0.28	0.36	1.02	0.154
Borrower is not in XKUR	88	- 0.08			
Above median Return Volatility	156	0.35	0.34	1.07	0.143
Below median Return Volatility	157	0.01			
Below median Size	156	0.25	0.15	0.48	0.315
Above median Size	157	0.10			

Table 14 CARs according to loan characteristics

This table investigates loan characteristics as a source of two days abnormal returns (CAR[-1,0]) around international loan announcements.

	Sample	CAR (%)	Diff. (high-low sorts)	H _A : Difference>0 t-stat	p-value
Above median Amount	157	0.29	0.23	0.74	0.230
Below median Amount	156	0.06			
Short Term	142	0.36	0.34	1.08	0.140
Not Short Term	171	0.02			
Credit Line	62	0.47	0.36	0.90	0.185
Not Credit Line	251	0.11			
Unsecured	214	0.31	0.42	1.24	0.108
Secured	99	- 0.11			
Purpose of Loan					
Capital Expenditure	22	0.25	7.66	0.12	0.451
Not Capital Expenditure	291	0.17			
General Corporate	256	0.21	0.21	0.52	0.303
Not General Corporate	57	0.00			
Not Restructuring	311	0.19	1.93	0.97	0.166
Restructuring	2	-1.74			
Not Debt Repayment	283	0.22	0.50	0.94	0.175
Debt Repayment	30	-0.28			
Other Purpose	3	2.18	2.02	1.25	0.106
Not Other Purpose	310	0.16			

Table 15 CARs according to loan structure

This table investigates loan structure as a source of two days abnormal returns (CAR[-1,0]) around international loan announcements.

	Sample	CAR (%)	Diff. (high- low sorts)	H _A : Difference>0 t-stat	p-value
Not Syndicated	56	0.28	0.13	0.32	0.375
Syndicated	257	0.15			
Below Med. No. of Lenders	159	0.18	0.01	0.03	0.486
Above Med. No. of Lenders	154	0.17			
Below Med. No. of Lead Lenders	165	0.31	0.28	0.89	0.187
Above Med. No. of Lead Lenders	148	0.03			
Above Med. Lead Retained	157	0.40	0.45	1.42*	0.079
Below Med. Lead Retained	156	-0.05			
Initial	28	0.74	0.62	1.12	0.132
Subsequent	285	0.12			

Table 16 CARs according to lender characteristics

This table investigates lender characteristics as a source of two days abnormal returns (CAR[-1,0]) around international loan announcements.

	Sample	CAR (%)	Diff. (high- low sorts)	H _A : Difference>0 t-stat	p-value
Above Med. Prev. Lent Amount	156	0.27	0.19	0.60	0.275
Below Med. Prev. Lent Amount	157	0.08			
Above Med. Prev. Lent Number	174	0.25	0.18	0.56	0.288
Below Med. Prev. Lent Number	139	0.08			
Lead Lender has Subs. in Turkey	216	0.26	0.28	0.83	0.205
Lead Lender has no Subs. in Turkey	97	-0.02			

Table 17 Analyzing CARs before, during and after the global crisis

This table investigates years before, during and after the global crisis as a source of two days abnormal returns (CAR[-1,0]) around international loan announcements.

	Sample	CAR (%)	Difference (high-low sorts)	H _A : Difference>0 t-stat	p-value
Not 2007	296	0.20	0.50	0.72	0.235
2007	17	-0.30			
2008	22	0.71	0.57	0.93	0.178
Not 2008	291	0.14			
2009	22	0.55	0.40	0.65	0.257
Not 2009	291	0.15			
2010	28	0.82	0.71	1.28	0.102
Not 2010	285	0.11			
Not 2011	286	0.29	1.37	2.47***	0.007
2011	27	-1.08			

Table 18 Realized CARs of business group firms around international loans (%)

This table partitions realized cumulative abnormal returns around international loans according to whether the borrower is controlled by business group or not.

	Stand-Alone Borrowers (I)		Borrowers controlled by Business Groups (II)		Difference (II) - (I)	H _a : Difference > 0	
	Freq.	Mean	Freq.	Mean		t-stat	p-value
CAR(-1;0)	118	-0.20	195	0.41	0.61**	1.88	0.031

Table 19 Multivariate investigation of realized CARs of business group firms

This table presents the results of different specifications of regression model in which the dependent variable is two days average cumulative return [CAR(-1;0)]. Group dummy is the explanatory variable that measures business group control. Robust standard errors are provided in parentheses. ***, **, * stand for p-values lower than 0.01, 0.05, 0.1 for null hypothesis that each coefficient is equal to zero.

	(1)	(2)	(3)	(4)
	CAR	CAR	CAR	CAR
VARIABLES	(%)	(%)	(%)	(%)
Group dummy	0.59*	0.64*	0.61*	0.57
	(0.31)	(0.34)	(0.36)	(0.36)
XKUR dummy		-0.23	-0.26	-0.21
		(0.45)	(0.44)	(0.45)
Total Assets(in 100 billion USD)		-0.02	-0.36	-0.42
		(0.44)	(0.62)	(0.55)
Return Volatility		0.06	0.09	0.09
		(0.37)	(0.37)	(0.38)
Loan size (in Billion USD)			0.46	0.33
			(0.41)	(0.45)
Credit-line dummy			0.36	0.32
			(0.47)	(0.48)
Short term dummy			0.44	0.45
			(0.41)	(0.41)
Secured dummy			-0.69*	-0.71**
			(0.34)	(0.34)
Capital Expenditure Purpose			0.41	0.42
			(0.70)	(0.70)

Debt Repayment Purpose		-1.46	-1.45	
		(0.89)	(0.89)	
Syndicated dummy		-0.20	-0.49	
		(0.41)	(0.52)	
Lead Retained (in 10%)		0.04	0.04	
		(0.06)	(0.05)	
Subsequent dummy		-0.58	-0.63	
		(0.88)	(0.89)	
Prev. amount of lead lenders (billion USD)			0.32	
			(0.46)	
Lead lenders subsidiary dummy			0.37	
			(0.49)	
Constant	0.06	-0.20	-0.11	0.47
	(0.46)	(1.46)	(1.85)	(1.96)
Observations	313	313	313	313
R-squared	0.05	0.06	0.08	0.09
Year Dummies	YES	YES	YES	YES

Table 20 Realized CARs of bottom firms around international loans (%)

This table partitions realized cumulative abnormal returns around international loans according to whether the borrower is bottom firm or not. Bottom variable measures the business group control through pyramid ownership structure.

	Borrowers that are stand alone or non-bottom business group firms		Borrowers that are bottom business group firms		Diff.	H _A : Difference>0	
	Freq.	Mean	Freq.	Mean		t-stat	p-value
CAR(-1;0)	251	0.06	62	0.66	0.60*	1.52	0.065

Table 21 Multivariate investigation of realized CARs of bottom firms

This table presents the results of different specifications of regression model in which the dependent variable is two days average cumulative return [CAR(-1;0)]. Bottom dummy is equal to one if the firm is controlled by business group through pyramid ownership structure. Robust standard errors are provided in parentheses. ***, **, * stand for p-values lower than 0.01, 0.05, 0.1 for null hypothesis that each coefficient is equal to zero.

VARIABLES	(1) CAR (%)	(2) CAR (%)	(3) CAR (%)	(4) CAR (%)
Bottom dummy	0.66** (0.28)	0.66** (0.28)	0.64** (0.30)	0.59* (0.31)
XKUR dummy		-0.08 (0.46)	-0.14 (0.46)	-0.08 (0.47)
Total Assets(in 100 billion USD)		-0.02 (0.48)	-0.48 (0.59)	-0.53 (0.54)
Return Volatility		0.02 (0.36)	0.04 (0.36)	0.05 (0.37)
Loan size (in Billion USD)			0.59 (0.40)	0.44 (0.43)
Credit-line dummy			0.33 (0.51)	0.29 (0.52)
Short term dummy			0.39 (0.41)	0.41 (0.41)
Secured dummy			-0.62* (0.31)	-0.64** (0.31)
Capital Expenditure Purpose			0.31 (0.66)	0.33 (0.66)
Debt Repayment Purpose			-1.39 (0.90)	-1.39 (0.90)

Syndicated dummy			-0.20	-0.52
			(0.40)	(0.52)
Lead Retained (in 10%)			0.05	0.05
			(0.06)	(0.06)
Subsequent dummy			-0.62	-0.67
			(0.87)	(0.88)
Prev. amount of lead lenders (billion USD)				0.29
				(0.48)
Lead lenders subsidiary dummy				0.42
				(0.51)
Constant	0.38	0.29	0.77	0.90
	(0.40)	(1.38)	(1.79)	(1.86)
Observations	313	313	313	313
R-squared	0.05	0.05	0.08	0.09
Year Dummies	YES	YES	YES	YES

Table 22 Multivariate investigation of realized CARs for pyramid layers

This table presents the results of different specifications of regression model in which the dependent variable is two days average cumulative return [CAR(-1;0)]. Pyramid layer shows the number of listed firms between the firm and the controlling shareholder in the control chain. Robust standard errors are provided in parentheses. ***, **, * stand for p-values lower than 0.01, 0.05, 0.1 for null hypothesis that each coefficient is equal to zero.

	(1)	(2)	(3)	(4)
	CAR	CAR	CAR	CAR
VARIABLES	(%)	(%)	(%)	(%)
Pyramid Layer	0.33***	0.34***	0.34***	0.31**
	(0.10)	(0.11)	(0.12)	(0.13)
XKUR dummy		-0.09	-0.15	-0.09
		(0.47)	(0.47)	(0.48)
Total Assets(in 100 billion USD)		-0.12	-0.53	-0.56
		(0.50)	(0.59)	(0.54)
Return Volatility		-0.01	0.01	0.01
		(0.35)	(0.35)	(0.36)
Loan size (in Billion USD)			0.54	0.41
			(0.41)	(0.43)
Credit-line dummy			0.26	0.22
			(0.52)	(0.53)
Short term dummy			0.45	0.46
			(0.42)	(0.42)
Secured dummy			-0.64**	-0.65**
			(0.30)	(0.31)
Capital Expenditure Purpose			0.33	0.34
			(0.64)	(0.64)
Debt Repayment Purpose			-1.41	-1.40
			(0.90)	(0.90)

Syndicated dummy			-0.14	-0.46
			(0.42)	(0.53)
Lead Retained (in 10%)			0.05	0.05
			(0.06)	(0.06)
Subsequent dummy			-0.68	-0.73
			(0.86)	(0.87)
Prev. amount of lead lenders (billion USD)				0.26
				(0.48)
Lead lenders subsidiary dummy				0.42
				(0.51)
Constant	0.41	0.46	0.95	1.07
	(0.40)	(1.36)	(1.74)	(1.81)
Observations	313	313	313	313
R-squared	0.05	0.05	0.09	0.09
Year Dummies	YES	YES	YES	YES

Table 23 Direct Voting Rights and CARs of firms in pyramid structure

This table presents the impact of direct voting rights and its interaction with bottom and pyramid layer. Robust standard errors are provided in parentheses. ***, **, * stand for p-values lower than 0.01, 0.05, 0.1 for null hypothesis that each coefficient is equal to zero.

VARIABLES	(1) CAR (%)	(2) CAR (%)	(3) CAR (%)	(4) CAR (%)
Voting rights	0.02** (0.01)	0.02* (0.01)	0.02** (0.01)	0.02* (0.01)
Bottom	0.72** (0.30)			
Bottom* Voting rights<50%		0.20 (0.61)		
Bottom*Voting rights≥50%		0.90** (0.37)		
Pyramid Layer			0.39*** (0.12)	
Pyramid Layer*Voting rights<50%				0.01 (0.52)
Pyramid Layer*Voting rights≥50%				0.42*** (0.13)
XKUR dummy	-0.10 (0.40)	-0.11 (0.40)	-0.11 (0.41)	-0.11 (0.41)
Total Assets(in 100 billion USD)	-0.29 (0.54)	-0.29 (0.53)	-0.33 (0.54)	-0.34 (0.53)
Return Volatility	0.05 (0.37)	0.03 (0.36)	0.01 (0.35)	-0.01 (0.35)
Loan size (in Billion USD)	0.32 (0.42)	0.27 (0.42)	0.27 (0.42)	0.23 (0.43)

Credit-line dummy	0.38	0.36	0.31	0.28
	(0.51)	(0.49)	(0.52)	(0.49)
Short term dummy	0.47	0.49	0.53	0.54
	(0.40)	(0.41)	(0.42)	(0.42)
Secured dummy	-0.63*	-0.61**	-0.65**	-0.63**
	(0.31)	(0.30)	(0.31)	(0.30)
Capital Expenditure Purpose	0.31	0.26	0.32	0.29
	(0.77)	(0.78)	(0.75)	(0.74)
Debt Repayment Purpose	-1.37	-1.35	-1.39	-1.38
	(0.88)	(0.87)	(0.88)	(0.87)
Syndicated dummy	-0.28	-0.23	-0.19	-0.17
	(0.50)	(0.51)	(0.51)	(0.51)
Lead Retained (in 10%)	0.05	0.05	0.05	0.05
	(0.06)	(0.06)	(0.06)	(0.06)
Subsequent dummy	-0.67	-0.64	-0.74	-0.73
	(0.89)	(0.86)	(0.89)	(0.87)
Prev. amount of lead lenders (billion USD)	0.38	0.36	0.34	0.33
	(0.45)	(0.45)	(0.46)	(0.45)
Lead lenders subsidiary dummy	0.20	0.22	0.20	0.23
	(0.42)	(0.42)	(0.41)	(0.40)
Constant	-0.63	-0.59	-0.46	-0.39
	(1.93)	(1.93)	(1.91)	(1.93)
Observations	313	313	313	313
R-squared	0.10	0.11	0.11	0.11
Year Dummies	YES	YES	YES	YES

Table 24 The quality of internal monitoring and CARs of firms in pyramid structure

This table provides the impact of the quality of corporate governance and its interaction with my proxy variables of bottom and pyramid layer. Robust standard errors are provided in parentheses. ***, **, * stand for p-values lower than 0.01, 0.05, 0.1 for null hypothesis that each coefficient is equal to zero.

	(1)	(2)	(3)	(4)
	CAR	CAR	CAR	CAR
VARIABLES	(%)	(%)	(%)	(%)
XKUR	-0.08	0.15	-0.09	0.10
	(0.47)	(0.52)	(0.48)	(0.53)
Bottom	0.59*			
	(0.31)			
Bottom*LowQualityGovernance		0.93***		
		(0.29)		
Bottom* HighQualityGovernance		-0.17		
		(0.68)		
Pyramid Layer			0.31**	
			(0.13)	
Pyramid Layer* LowQualityGovernance				0.45***
				(0.13)
Pyramid Layer* HighQualityGovernance				-0.05
				(0.33)
Total Assets(in 100 billion USD)	-0.53	-0.59	-0.56	-0.60
	(0.54)	(0.50)	(0.54)	(0.51)
Return Volatility	0.05	0.07	0.01	0.03
	(0.37)	(0.38)	(0.36)	(0.36)
Loan size (in Billion USD)	0.44	0.41	0.41	0.37
	(0.43)	(0.43)	(0.43)	(0.44)

Credit-line dummy	0.29	0.29	0.22	0.24
	(0.52)	(0.49)	(0.53)	(0.51)
Short term dummy	0.41	0.44	0.46	0.49
	(0.41)	(0.42)	(0.42)	(0.43)
Secured dummy	-0.64**	-0.64**	-0.65**	-0.65**
	(0.31)	(0.31)	(0.31)	(0.30)
Capital Expenditure Purpose	0.33	0.26	0.34	0.33
	(0.66)	(0.70)	(0.64)	(0.67)
Debt Repayment Purpose	-1.39	-1.38	-1.40	-1.41
	(0.90)	(0.90)	(0.90)	(0.89)
Syndicated dummy	-0.52	-0.54	-0.46	-0.45
	(0.52)	(0.51)	(0.53)	(0.53)
Lead Retained (in 10%)	0.05	0.05	0.05	0.06
	(0.06)	(0.06)	(0.06)	(0.06)
Subsequent dummy	-0.67	-0.70	-0.73	-0.76
	(0.88)	(0.88)	(0.87)	(0.88)
Prev. amount of lead lenders (billion USD)	0.29	0.34	0.26	0.36
	(0.48)	(0.47)	(0.48)	(0.49)
Lead lenders subsidiary dummy	0.42	0.49	0.42	0.47
	(0.51)	(0.51)	(0.51)	(0.50)
Constant	0.90	0.76	1.07	0.93
	(1.86)	(1.88)	(1.81)	(1.83)
Observations	313	313	313	313
R-squared	0.09	0.09	0.09	0.09
Year Dummies	YES	YES	YES	YES

Table 25 CARs of Banking firms in pyramid structure

This table provides the impact of bank dummy and its interaction with my proxy variables of bottom and pyramid layer. Robust standard errors are provided in parentheses. ***, **, * stand for p-values lower than 0.01, 0.05, 0.1 for null hypothesis that each coefficient is equal to zero.

	(1)	(2)	(3)	(4)
	CAR	CAR	CAR	CAR
VARIABLES	(%)	(%)	(%)	(%)
Bank dummy	-0.31 (0.48)	-0.25 (0.59)	-0.35 (0.49)	-0.19 (0.58)
Bottom	0.55* (0.29)			
Bottom*Non-Bank dummy		0.68 (0.57)		
Bottom* Bank dummy		0.49 (0.29)		
Pyramid Layer			0.30** (0.12)	
Pyramid Layer *Non-Bank dummy				0.55* (0.32)
Pyramid Layer *Bank dummy				0.24** (0.12)
XKUR dummy	-0.06 (0.47)	-0.07 (0.46)	-0.07 (0.47)	-0.08 (0.46)
Total Assets(in 100 billion USD)	-0.32 (0.63)	-0.33 (0.64)	-0.33 (0.64)	-0.35 (0.64)
Return Volatility	0.11 (0.37)	0.10 (0.37)	0.08 (0.35)	0.06 (0.35)

Loan size (in Billion USD)	0.40	0.41	0.36	0.39
	(0.43)	(0.42)	(0.43)	(0.42)
Credit-line dummy	0.30	0.31	0.25	0.26
	(0.52)	(0.52)	(0.53)	(0.52)
Short term dummy	0.49	0.48	0.54	0.52
	(0.38)	(0.38)	(0.39)	(0.38)
Secured dummy	-0.60*	-0.60*	-0.61*	-0.60*
	(0.33)	(0.32)	(0.32)	(0.32)
Capital Expenditure Purpose	0.21	0.22	0.21	0.24
	(0.63)	(0.64)	(0.61)	(0.63)
Debt Repayment Purpose	-1.39	-1.39	-1.41	-1.39
	(0.90)	(0.89)	(0.90)	(0.89)
Syndicated dummy	-0.48	-0.50	-0.41	-0.45
	(0.51)	(0.51)	(0.52)	(0.52)
Lead Retained (in 10%)	0.05	0.05	0.05	0.05
	(0.06)	(0.06)	(0.06)	(0.06)
Subsequent dummy	-0.58	-0.58	-0.62	-0.65
	(0.94)	(0.95)	(0.94)	(0.96)
Prev. amount of lead lenders (billion USD)	0.32	0.32	0.30	0.29
	(0.47)	(0.47)	(0.47)	(0.47)
Lead lenders subsidiary dummy	0.34	0.36	0.34	0.35
	(0.49)	(0.50)	(0.49)	(0.48)
Constant	0.81	0.77	0.95	0.89
	(1.86)	(1.86)	(1.81)	(1.81)
Observations	313	313	313	313
R-squared	0.09	0.09	0.09	0.09
Year Dummies	YES	YES	YES	YES

Table 26 Size and CARs of firms in pyramid structure

This table provides the impact of size of the borrower and its interaction with my proxy variables of bottom and pyramid layer. Robust standard errors are provided in parentheses. ***, **, * stand for p-values lower than 0.01, 0.05, 0.1 for null hypothesis that each coefficient is equal to zero.

	(1)	(2)	(3)	(4)
	CAR	CAR	CAR	CAR
VARIABLES	(%)	(%)	(%)	(%)
Total Assets(in 100 billion USD)	-0.53 (0.54)	-0.44 (0.58)	-0.56 (0.54)	-0.45 (0.56)
Bottom	0.59* (0.31)			
Bottom*Size below 25thPercentile		0.81* (0.44)		
Bottom* Size above 25thPercentile		0.40 (0.36)		
Pyramid Layer			0.31** (0.13)	
Pyramid Layer * Size below 25thPercentile				0.59** (0.24)
Pyramid Layer * Size above 25thPercentile				0.23* (0.13)
XKUR dummy	-0.08 (0.47)	-0.09 (0.46)	-0.09 (0.48)	-0.10 (0.47)
Return Volatility	0.05 (0.37)	0.05 (0.37)	0.01 (0.36)	0.02 (0.35)
Loan size (in Billion USD)	0.44 (0.43)	0.46 (0.43)	0.41 (0.43)	0.44 (0.43)

Credit-line dummy	0.29	0.32	0.22	0.27
	(0.52)	(0.51)	(0.53)	(0.52)
Short term dummy	0.41	0.41	0.46	0.46
	(0.41)	(0.41)	(0.42)	(0.42)
Secured dummy	-0.64**	-0.64**	-0.65**	-0.64**
	(0.31)	(0.31)	(0.31)	(0.31)
Capital Expenditure Purpose	0.33	0.34	0.34	0.36
	(0.66)	(0.67)	(0.64)	(0.65)
Debt Repayment Purpose	-1.39	-1.38	-1.40	-1.39
	(0.90)	(0.90)	(0.90)	(0.90)
Syndicated dummy	-0.52	-0.55	-0.46	-0.49
	(0.52)	(0.52)	(0.53)	(0.52)
Lead Retained (in 10%)	0.05	0.05	0.05	0.05
	(0.06)	(0.06)	(0.06)	(0.06)
Subsequent dummy	-0.67	-0.64	-0.73	-0.71
	(0.88)	(0.88)	(0.87)	(0.87)
Prev. amount of lead lenders (billion USD)	0.29	0.31	0.26	0.28
	(0.48)	(0.48)	(0.48)	(0.49)
Lead lenders subsidiary dummy	0.42	0.40	0.42	0.38
	(0.51)	(0.51)	(0.51)	(0.50)
Constant	0.90	0.86	1.07	1.00
	(1.86)	(1.86)	(1.81)	(1.81)
Observations	313	313	313	313
R-squared	0.09	0.09	0.09	0.09
Year Dummies	YES	YES	YES	YES

Table 27 Age and CARs of firms in pyramid structure

This table provides the impact of age of the borrower and its interaction with my proxy variables of bottom and pyramid layer. Robust standard errors are provided in parentheses. ***, **, * stand for p-values lower than 0.01, 0.05, 0.1 for null hypothesis that each coefficient is equal to zero.

	(1)	(2)	(3)	(4)
	CAR	CAR	CAR	CAR
VARIABLES	(%)	(%)	(%)	(%)
Age (in 10 years)	0.00 (0.11)	0.00 (0.11)	0.01 (0.11)	0.01 (0.11)
Bottom	0.59* (0.31)			
Bottom* Age below 25thPercentile		3.00** (1.11)		
Bottom* Age above 25thPercentile		0.55* (0.31)		
Pyramid Layer			0.31** (0.13)	
Pyramid Layer * Age below 25thPercentile				2.94** (1.10)
Pyramid Layer * Age above 25thPercentile				0.30** (0.12)
XKUR dummy	-0.08 (0.47)	-0.09 (0.47)	-0.09 (0.47)	-0.10 (0.47)
Total Assets(in 100 billion USD)	-0.54 (0.75)	-0.56 (0.74)	-0.60 (0.75)	-0.62 (0.75)
Return Volatility	0.05 (0.38)	0.06 (0.38)	0.01 (0.37)	0.03 (0.37)

Loan size (in Billion USD)	0.45	0.46	0.41	0.43
	(0.43)	(0.43)	(0.43)	(0.43)
Credit-line dummy	0.29	0.28	0.22	0.22
	(0.52)	(0.51)	(0.53)	(0.52)
Short term dummy	0.41	0.43	0.45	0.48
	(0.42)	(0.42)	(0.43)	(0.43)
Secured dummy	-0.64*	-0.63*	-0.66**	-0.65*
	(0.32)	(0.32)	(0.32)	(0.32)
Capital Expenditure Purpose	0.32	0.36	0.33	0.37
	(0.63)	(0.62)	(0.61)	(0.61)
Debt Repayment Purpose	-1.39	-1.40	-1.40	-1.41
	(0.90)	(0.90)	(0.89)	(0.89)
Syndicated dummy	-0.52	-0.59	-0.46	-0.53
	(0.53)	(0.55)	(0.54)	(0.56)
Lead Retained (in 10%)	0.05	0.05	0.05	0.05
	(0.06)	(0.06)	(0.06)	(0.06)
Subsequent dummy	-0.67	-0.59	-0.73	-0.64
	(0.90)	(0.93)	(0.89)	(0.92)
Prev. amount of lead lenders (billion USD)	0.29	0.28	0.26	0.25
	(0.47)	(0.47)	(0.48)	(0.48)
Lead lenders subsidiary dummy	0.42	0.46	0.42	0.47
	(0.53)	(0.53)	(0.52)	(0.53)
Constant	0.89	0.82	1.03	0.95
	(2.01)	(2.02)	(1.99)	(2.00)
Observations	313	313	313	313
R-squared	0.09	0.09	0.09	0.09
Year Dummies	YES	YES	YES	YES

Table 28 Risk and CARs of firms in pyramid structure

Table provides the impact of risk of the borrower measured by return volatility and its interaction with my proxy variables of bottom and pyramid layer. Robust standard errors are provided in parentheses. ***, **, * stand for p-values lower than 0.01, 0.05, 0.1 for null hypothesis that each coefficient is equal to zero.

	(1)	(2)	(3)	(4)
	CAR	CAR	CAR	CAR
VARIABLES	(%)	(%)	(%)	(%)
Return Volatility	0.05 (0.37)	-0.07 (0.34)	0.01 (0.36)	-0.09 (0.34)
Bottom	0.59* (0.31)			
Bottom* return volatility below median		0.18 (0.38)		
Bottom* return volatility above median		1.11*** (0.33)		
Pyramid Layer			0.31** (0.13)	
Pyramid Layer * return vol. below median				0.05 (0.20)
Pyramid Layer * return vol. above median				0.51*** (0.12)
XKUR dummy	-0.08 (0.47)	-0.13 (0.47)	-0.09 (0.48)	-0.13 (0.47)
Total Assets(in 100 billion USD)	-0.53 (0.54)	-0.56 (0.53)	-0.56 (0.54)	-0.60 (0.53)
Loan size (in Billion USD)	0.44 (0.43)	0.43 (0.43)	0.41 (0.43)	0.39 (0.44)

Credit-line dummy	0.29	0.28	0.22	0.24
	(0.52)	(0.50)	(0.53)	(0.51)
Short term dummy	0.41	0.45	0.46	0.48
	(0.41)	(0.42)	(0.42)	(0.43)
Secured dummy	-0.64**	-0.62*	-0.65**	-0.62**
	(0.31)	(0.31)	(0.31)	(0.31)
Capital Expenditure Purpose	0.33	0.41	0.34	0.39
	(0.66)	(0.63)	(0.64)	(0.62)
Debt Repayment Purpose	-1.39	-1.40	-1.40	-1.42
	(0.90)	(0.90)	(0.90)	(0.89)
Syndicated dummy	-0.52	-0.51	-0.46	-0.44
	(0.52)	(0.52)	(0.53)	(0.53)
Lead Retained (in 10%)	0.05	0.04	0.05	0.05
	(0.06)	(0.06)	(0.06)	(0.06)
Subsequent dummy	-0.67	-0.70	-0.73	-0.76
	(0.88)	(0.87)	(0.87)	(0.87)
Prev. amount of lead lenders (billion USD)	0.29	0.41	0.26	0.41
	(0.48)	(0.48)	(0.48)	(0.49)
Lead lenders subsidiary dummy	0.42	0.37	0.42	0.38
	(0.51)	(0.51)	(0.51)	(0.51)
Constant	0.90	1.33	1.07	1.45
	(1.86)	(1.80)	(1.81)	(1.79)
Observations	313	313	313	313
R-squared	0.09	0.09	0.09	0.09
Year Dummies	YES	YES	YES	YES

Table 29 Economy wide crisis and CARs of firms in pyramid structure

This table provides the impact of the global crisis and its interaction with my proxy variables of bottom and pyramid layer. Robust standard errors are provided in parentheses.

***, **, * stand for p-values lower than 0.01, 0.05, 0.1 for null hypothesis that each coefficient is equal to zero.

	(1)	(2)	(3)	(4)
	CAR	CAR	CAR	CAR
VARIABLES	(%)	(%)	(%)	(%)
Crisis	0.76 (0.47)	0.62 (0.60)	0.72 (0.47)	0.54 (0.57)
Bottom	0.51* (0.26)			
Bottom* non-Crisis		0.35 (0.34)		
Bottom* Crisis		0.91 (0.56)		
Pyramid Layer			0.28** (0.11)	
Pyramid Layer * non-Crisis				0.11 (0.18)
Pyramid Layer * Crisis				0.49*** (0.17)
XKUR dummy	-0.73 (0.52)	-0.72 (0.52)	-0.77 (0.52)	-0.77 (0.52)
Total Assets(in 100 billion USD)	0.11 (0.25)	0.11 (0.25)	0.08 (0.24)	0.06 (0.23)
Loan size (in Billion USD)	0.39 (0.45)	0.38 (0.45)	0.36 (0.45)	0.37 (0.45)

Credit-line dummy	0.50	0.50	0.46	0.48
	(0.59)	(0.59)	(0.59)	(0.59)
Short term dummy	0.67*	0.71*	0.70*	0.76*
	(0.37)	(0.39)	(0.38)	(0.40)
Secured dummy	-0.88**	-0.89**	-0.90**	-0.90**
	(0.34)	(0.34)	(0.34)	(0.34)
Capital Expenditure Purpose	0.47	0.50	0.49	0.52
	(0.59)	(0.58)	(0.58)	(0.57)
Debt Repayment Purpose	-1.10	-1.12	-1.10	-1.14
	(0.74)	(0.75)	(0.74)	(0.74)
Syndicated dummy	-0.52	-0.51	-0.48	-0.46
	(0.45)	(0.45)	(0.45)	(0.46)
Lead Retained (in 10%)	0.03	0.03	0.03	0.04
	(0.05)	(0.05)	(0.05)	(0.05)
Subsequent dummy	-0.67	-0.73	-0.72	-0.79
	(0.85)	(0.87)	(0.84)	(0.86)
Prev. amount of lead lenders (billion USD)	0.24	0.26	0.21	0.24
	(0.42)	(0.41)	(0.43)	(0.41)
Lead lenders subsidiary dummy	0.44	0.43	0.44	0.44
	(0.49)	(0.49)	(0.49)	(0.49)
Constant	0.08	0.11	0.21	0.25
	(1.19)	(1.17)	(1.15)	(1.13)
Observations	313	313	313	313
R-squared	0.09	0.09	0.09	0.09
Year Dummies	NO	NO	NO	NO

Table 30 CARs around international loans to non-financial firms (%)

This table reports cumulative abnormal returns for different event windows realized by non-financial borrowers around international loan announcements.

	Distribution						H _A :Mean>0	
	Freq.	Mean	SD	10th	50th	90th	t-stat	p-value
CAR(-5;5)	75	0.97*	5.68	-5.40	-0.08	7.36	1.48	0.072
CAR(-3;3)	75	0.53	4.42	-3.62	0.03	5.83	1.03	0.153
CAR(-2;2)	75	0.22	3.87	-4.27	0.00	5.23	0.49	0.313
CAR(-1;1)	75	0.44*	2.70	-2.74	0.52	3.85	1.42	0.079
CAR(-5;0)	75	0.90**	3.66	-2.97	0.69	5.54	2.12	0.019
CAR(-3;0)	75	0.68**	3.33	-2.62	0.26	4.63	1.78	0.040
CAR(-1;0)	75	0.47**	2.28	-2.21	0.08	3.12	1.80	0.038

Table 31 CARs of non-financial business group firms around international loans

This table partitions realized cumulative abnormal returns of non-financial firms around international loans according to whether the borrower is controlled by business group or not. Reported CARs are two days abnormal returns (CAR[-1,0]).

	Stand-Alone Borrowers		Borrowers controlled by Business Groups			t-stat	p-value
	Freq.	Mean	Freq.	Mean	Difference		
CAR(-1;0)	14	0.33	61	0.51	0.18	0.27	0.395

Table 32 Multivariate investigation of realized CARs of business group firms

This table presents the results of different specifications of regression model in which the dependent variable is two days average cumulative return [CAR(-1;0)]. Group dummy is the explanatory variable that measures business group control. Robust standard errors are provided in parentheses. ***, **, * stand for p-values lower than 0.01, 0.05, 0.1 for null hypothesis that each coefficient is equal to zero.

	(1)	(2)	(3)	(4)
	CAR	CAR	CAR	CAR
VARIABLES	(%)	(%)	(%)	(%)
Group	0.96 (0.90)	1.67** (0.59)	2.20* (1.09)	2.14* (1.06)
XKUR dummy	-0.47 (0.77)	2.06** (0.85)		
Total Assets(in 100 billion USD)		2.40 (2.08)	1.42 (1.86)	0.73 (2.55)
Return Volatility		1.48* (0.82)	0.93 (0.93)	0.89 (0.84)
Long term debt/Total Assets (%)		-0.01 (0.02)	0.00 (0.03)	0.00 (0.03)
Return on Assets (%)		-0.13* (0.07)	-0.16 (0.10)	-0.15 (0.10)
Tobin's q		-1.34* (0.74)	-0.90 (0.97)	-1.17 (1.12)
Tangible Assets / Total Assets (%)		0.04*** (0.01)	0.04** (0.02)	0.05** (0.02)
Loan size (in Billion USD)			-0.02 (0.79)	-0.33 (0.92)

Credit-line dummy			1.85	2.19
			(1.26)	(1.35)
Short term dummy			-0.99	-1.14
			(0.98)	(1.02)
Secured dummy			-0.26	-0.70
			(1.16)	(1.07)
Capital Expenditure Purpose			-0.65	-0.37
			(0.76)	(0.87)
Debt Repayment Purpose			0.71	1.03
			(0.54)	(0.71)
Syndicated dummy			-0.89	-1.12
			(0.66)	(0.72)
Lead Retained (in 10%)			-0.01	-0.03
			(0.11)	(0.11)
Subsequent dummy				-0.31
				(0.54)
Prev. amount of lead lenders (billion USD)				2.48
				(1.76)
Lead lenders subsidiary dummy				-0.04
				(0.60)
Constant	-0.72	-4.48	-3.38	-2.84
	(0.92)	(2.98)	(4.55)	(4.25)
Observations	75	75	75	75
R-squared	0.12	0.43	0.45	0.48
Year Dummies	YES	YES	YES	YES

Table 33 CARs of non-financial bottom firms around international loans (%)

This table partitions realized cumulative abnormal returns of non-financial firms around international loans according to whether the borrower is bottom firm or not. Bottom is the explanatory variable that measures the business group control through pyramid ownership structure. Reported CARs are two days abnormal returns (CAR[-1,0]).

	Borrowers that are stand alone or non-bottom business group firms		Borrowers that are bottom business group firms		Diff.	t-stat	p-value
	Freq.	Mean	Freq.	Mean			
CAR(-1;0)	52	0.30	23	0.87	0.57	0.99	0.162

Table 34 Multivariate investigation of CARs realized by non-financial bottom firms

This table presents the results of different specifications of regression model in which the dependent variable is two days average cumulative return [CAR(-1;0)]. Bottom dummy is equal to one if the firm is controlled by business group through pyramid ownership structure. Robust standard errors are provided in parentheses. ***, **, * stand for p-values lower than 0.01, 0.05, 0.1 for null hypothesis that each coefficient is equal to zero.

	(1)	(2)	(3)	(4)
	CAR	CAR	CAR	CAR
VARIABLES	(%)	(%)	(%)	(%)
Bottom	1.03 (0.66)	0.55 (0.57)	1.12 (0.76)	1.26 (0.76)
Total Assets(in 100 billion USD)		2.08 (2.87)	1.11 (2.01)	0.44 (2.69)
Return Volatility		0.97 (0.81)	0.55 (0.82)	0.50 (0.73)
Long term debt/Total Assets (%)		-0.02 (0.03)	-0.01 (0.03)	-0.01 (0.03)
Return on Assets (%)		-0.12 (0.09)	-0.16* (0.09)	-0.14 (0.09)
Tobin's q		-0.10 (0.72)	-0.59 (0.82)	-0.90 (0.99)
Tangible Assets / Total Assets (%)		0.03 (0.02)	0.05*** (0.02)	0.06*** (0.02)
Loan size (in Billion USD)			0.41 (0.92)	0.12 (1.05)

Credit-line dummy	1.67	2.04		
	(1.12)	(1.25)		
Short term dummy	-2.29**	-2.33*		
	(0.90)	(1.13)		
Secured dummy	-0.87	-1.32		
	(1.20)	(1.21)		
Capital Expenditure Purpose	-1.17	-0.83		
	(0.68)	(0.85)		
Debt Repayment Purpose	0.92	1.31*		
	(0.55)	(0.68)		
Syndicated dummy	-0.86	-1.21		
	(0.70)	(0.78)		
Lead Retained (in 10%)	0.07	0.04		
	(0.13)	(0.12)		
Subsequent dummy		-0.46		
		(0.59)		
Prev. amount of lead lenders (billion USD)		2.69		
		(1.78)		
Lead lenders subsidiary dummy		0.08		
		(0.56)		
Constant	-0.76	-3.35	-1.44	-1.04
	(0.68)	(3.17)	(4.23)	(3.95)
Observations	75	75	75	75
R-squared	0.14	0.31	0.44	0.49
Year Dummies	YES	YES	YES	YES

Table 35 Multivariate investigation of CARs for pyramid layers of non-financial firms

This table presents the results of different specifications of regression model in which the dependent variable is two days average cumulative return [CAR(-1;0)]. Pyramid layer shows the number of listed firms between the firm and the controlling shareholder in the control chain. Robust standard errors are provided in parentheses. ***, **, * stand for p-values lower than 0.01, 0.05, 0.1 for null hypothesis that each coefficient is equal to zero.

	(1)	(2)	(3)	(4)
	CAR	CAR	CAR	CAR
VARIABLES	(%)	(%)	(%)	(%)
Pyramid Layer	0.87** (0.34)	0.55* (0.30)	0.87** (0.41)	0.95** (0.40)
Total Assets(in 100 billion USD)		2.26 (2.97)	1.29 (2.22)	0.97 (2.80)
Return Volatility		0.88 (0.78)	0.43 (0.81)	0.44 (0.73)
Long term debt/Total Assets (%)		-0.02 (0.03)	-0.01 (0.03)	-0.01 (0.03)
Return on Assets (%)		-0.12 (0.09)	-0.16* (0.09)	-0.14 (0.09)
Tobin's q		-0.08 (0.72)	-0.55 (0.81)	-0.81 (0.97)
Tangible Assets / Total Assets (%)		0.03 (0.02)	0.05*** (0.02)	0.06*** (0.02)
Loan size (in Billion USD)			0.55 (0.92)	0.27 (1.01)

Credit-line dummy			1.52	1.84
			(1.13)	(1.27)
Short term dummy			-2.19**	-2.14*
			(0.92)	(1.13)
Secured dummy			-0.92	-1.36
			(1.16)	(1.20)
Capital Expenditure Purpose			-1.12	-0.80
			(0.71)	(0.88)
Debt Repayment Purpose			0.93*	1.25*
			(0.53)	(0.72)
Syndicated dummy			-0.88	-1.23
			(0.68)	(0.80)
Lead Retained (in 10%)			0.06	0.03
			(0.12)	(0.12)
Subsequent dummy				-0.65
				(0.60)
Prev. amount of lead lenders (billion USD)				2.49
				(1.74)
Lead lenders subsidiary dummy				0.10
				(0.59)
Constant	-0.68	-3.09	-0.91	-0.71
	(0.72)	(3.10)	(3.88)	(3.64)
Observations	75	75	75	75
R-squared	0.16	0.32	0.46	0.50
Year Dummies	YES	YES	YES	YES

Table 36 Profitability and CARs of non-financial firms in pyramid structure

This table provides the impact of the profitability and its interaction with my proxy variables of bottom and pyramid layer. Robust standard errors are provided in parentheses. ***, **, * stand for p-values lower than 0.01, 0.05, 0.1 for null hypothesis that each coefficient is equal to zero.

	(1)	(2)	(3)	(4)
VARIABLES	CAR (%)	CAR (%)	CAR (%)	CAR (%)
Return on Assets (%)	-0.14 (0.09)	-0.17* (0.10)	-0.14 (0.09)	-0.16 (0.09)
Bottom	1.26 (0.76)			
Bottom*RoABelowMedian		0.63 (1.27)		
Bottom*RoAAboveMedian		1.93** (0.68)		
Pyramid Layer			0.95** (0.40)	
Pyramid Layer*RoABelowMedian				0.70 (0.74)
Pyramid Layer*RoAAboveMedian				1.14*** (0.38)
Total Assets(in 100 billion USD)	0.44 (2.69)	0.68 (2.59)	0.97 (2.80)	1.05 (2.72)
Return Volatility	0.50 (0.73)	0.33 (0.83)	0.44 (0.73)	0.37 (0.80)
Long term debt/Total Assets (%)	-0.01 (0.03)	-0.02 (0.03)	-0.01 (0.03)	-0.01 (0.03)
Tobin's q	-0.90 (0.99)	-0.88 (1.04)	-0.81 (0.97)	-0.77 (1.00)

Tangible Assets / Total Assets (%)	0.06***	0.07***	0.06***	0.06***
	(0.02)	(0.02)	(0.02)	(0.02)
Loan size (in Billion USD)	0.12	0.23	0.27	0.32
	(1.05)	(1.01)	(1.01)	(1.01)
Credit-line dummy	2.04	2.07	1.84	1.80
	(1.25)	(1.35)	(1.27)	(1.33)
Short term dummy	-2.33*	-2.75**	-2.14*	-2.25*
	(1.13)	(1.26)	(1.13)	(1.18)
Secured dummy	-1.32	-1.26	-1.36	-1.31
	(1.21)	(1.28)	(1.20)	(1.26)
Capital Expenditure Purpose	-0.83	-0.86	-0.80	-0.81
	(0.85)	(0.88)	(0.88)	(0.89)
Debt Repayment Purpose	1.31*	1.22*	1.25*	1.23*
	(0.68)	(0.67)	(0.72)	(0.70)
Syndicated dummy	-1.21	-1.21	-1.23	-1.27
	(0.78)	(0.80)	(0.80)	(0.85)
Lead Retained (in 10%)	0.04	0.07	0.03	0.03
	(0.12)	(0.11)	(0.12)	(0.11)
Subsequent dummy	-0.46	-0.49	-0.65	-0.67
	(0.59)	(0.61)	(0.60)	(0.62)
Prev. amount of lead lenders (billion USD)	2.69	2.69	2.49	2.46
	(1.78)	(1.72)	(1.74)	(1.75)
Lead lenders subsidiary dummy	0.08	0.03	0.10	0.09
	(0.56)	(0.56)	(0.59)	(0.59)
Constant	-1.04	0.10	-0.71	-0.27
	(3.95)	(4.68)	(3.64)	(4.15)
Observations	75	75	75	75
R-squared	0.49	0.50	0.50	0.50
Year Dummies	YES	YES	YES	YES

Table 37 Long term debt and CARs of non-financial firms in pyramid structure

This table provides the impact of the long term debt and its interaction with my proxy variables of bottom and pyramid layer. Robust standard errors are provided in parentheses. ***, **, * stand for p-values lower than 0.01, 0.05, 0.1 for null hypothesis that each coefficient is equal to zero.

	(1)	(2)	(3)	(4)
	CAR	CAR	CAR	CAR
VARIABLES	(%)	(%)	(%)	(%)
Long term debt/Total Assets (%)	-0.01	0.01	-0.01	0.01
	(0.03)	(0.03)	(0.03)	(0.03)
Bottom	1.26			
	(0.76)			
Bottom* LongTermDebtBelowMedian		2.27*		
		(1.12)		
Bottom* LongTermDebtAboveMedian		0.51		
		(0.96)		
Pyramid Layer			0.95**	
			(0.40)	
Pyramid Layer*LongTermDebtBelowMedian				1.71**
				(0.61)
Pyramid Layer*LongTermDebtAboveMedian				0.49
				(0.50)
Total Assets(in 100 billion USD)	0.44	0.06	0.97	0.75
	(2.69)	(2.45)	(2.80)	(2.49)
Return Volatility	0.50	0.51	0.44	0.37
	(0.73)	(0.74)	(0.73)	(0.74)
Return on Assets (%)	-0.14	-0.12	-0.14	-0.11
	(0.09)	(0.09)	(0.09)	(0.09)
Tobin's q	-0.90	-1.10	-0.81	-1.04
	(0.99)	(1.00)	(0.97)	(0.92)

Tangible Assets / Total Assets (%)	0.06***	0.07***	0.06***	0.06***
	(0.02)	(0.02)	(0.02)	(0.02)
Loan size (in Billion USD)	0.12	0.37	0.27	0.53
	(1.05)	(1.09)	(1.01)	(1.02)
Credit-line dummy	2.04	2.38	1.84	2.24
	(1.25)	(1.38)	(1.27)	(1.37)
Short term dummy	-2.33*	-2.50**	-2.14*	-2.40*
	(1.13)	(1.19)	(1.13)	(1.18)
Secured dummy	-1.32	-1.96	-1.36	-2.12
	(1.21)	(1.36)	(1.20)	(1.29)
Capital Expenditure Purpose	-0.83	-0.82	-0.80	-0.74
	(0.85)	(0.83)	(0.88)	(0.87)
Debt Repayment Purpose	1.31*	1.15*	1.25*	1.01
	(0.68)	(0.60)	(0.72)	(0.62)
Syndicated dummy	-1.21	-1.23	-1.23	-1.12
	(0.78)	(0.73)	(0.80)	(0.77)
Lead Retained (in 10%)	0.04	0.02	0.03	-0.00
	(0.12)	(0.12)	(0.12)	(0.11)
Subsequent dummy	-0.46	-0.49	-0.65	-0.75
	(0.59)	(0.55)	(0.60)	(0.55)
Prev. amount of lead lenders (billion USD)	2.69	2.49	2.49	2.29
	(1.78)	(1.70)	(1.74)	(1.67)
Lead lenders subsidiary dummy	0.08	0.28	0.10	0.20
	(0.56)	(0.52)	(0.59)	(0.56)
Constant	-1.04	-1.78	-0.71	-1.03
	(3.95)	(4.01)	(3.64)	(3.70)
Observations	75	75	75	75
R-squared	0.49	0.50	0.50	0.52
Year Dummies	YES	YES	YES	YES

Table 38 Tobin' q and CARs of non-financial firms in pyramid structure

This table provides the impact of the Tobin's q and its interaction with my proxy variables of bottom and pyramid layer. Robust standard errors are provided in parentheses. ***, **, * stand for p-values lower than 0.01, 0.05, 0.1 for null hypothesis that each coefficient is equal to zero.

	(1)	(2)	(3)	(4)
VARIABLES	CAR (%)	CAR (%)	CAR (%)	CAR (%)
Tobin's q	-0.90 (0.99)	-1.03 (1.03)	-0.81 (0.97)	-1.10 (1.00)
Bottom	1.26 (0.76)			
Bottom* Tobin'sQBelowMedian		0.79 (0.60)		
Bottom* Tobin'sQAboveMedian		1.43 (1.04)		
Pyramid Layer			0.95** (0.40)	
Pyramid Layer* Tobin'sQBelowMedian				0.44 (0.40)
Pyramid Layer* Tobin'sQAboveMedian				1.20** (0.54)
Total Assets(in 100 billion USD)	0.44 (2.69)	0.74 (2.64)	0.97 (2.80)	1.07 (2.63)
Return Volatility	0.50 (0.73)	0.45 (0.71)	0.44 (0.73)	0.37 (0.74)
Long term debt/Total Assets (%)	-0.01 (0.03)	-0.02 (0.02)	-0.01 (0.03)	-0.01 (0.02)
Return on Assets (%)	-0.14 (0.09)	-0.13 (0.09)	-0.14 (0.09)	-0.13 (0.09)

Tangible Assets / Total Assets (%)	0.06***	0.07***	0.06***	0.07***
	(0.02)	(0.02)	(0.02)	(0.02)
Loan size (in Billion USD)	0.12	0.11	0.27	0.27
	(1.05)	(1.07)	(1.01)	(1.04)
Credit-line dummy	2.04	2.05	1.84	1.84
	(1.25)	(1.28)	(1.27)	(1.31)
Short term dummy	-2.33*	-2.35*	-2.14*	-2.22*
	(1.13)	(1.12)	(1.13)	(1.11)
Secured dummy	-1.32	-1.34	-1.36	-1.47
	(1.21)	(1.25)	(1.20)	(1.24)
Capital Expenditure Purpose	-0.83	-0.92	-0.80	-0.93
	(0.85)	(0.86)	(0.88)	(0.90)
Debt Repayment Purpose	1.31*	1.32*	1.25*	1.31
	(0.68)	(0.70)	(0.72)	(0.76)
Syndicated dummy	-1.21	-1.23	-1.23	-1.31
	(0.78)	(0.77)	(0.80)	(0.78)
Lead Retained (in 10%)	0.04	0.05	0.03	0.04
	(0.12)	(0.13)	(0.12)	(0.12)
Subsequent dummy	-0.46	-0.40	-0.65	-0.55
	(0.59)	(0.63)	(0.60)	(0.63)
Prev. amount of lead lenders (billion USD)	2.69	2.67	2.49	2.49
	(1.78)	(1.83)	(1.74)	(1.79)
Lead lenders subsidiary dummy	0.08	0.17	0.10	0.27
	(0.56)	(0.57)	(0.59)	(0.58)
Constant	-1.04	-0.84	-0.71	-0.34
	(3.95)	(3.83)	(3.64)	(3.62)
Observations	75	75	75	75
R-squared	0.49	0.49	0.50	0.51
Year Dummies	YES	YES	YES	YES