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Financial constraints and negative spillovers in business groups: Evidence from Korea

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ABSTRACT

We examine the negative spillover from one group-affiliated firm to other group-affiliated firms in the same business group, using credit rating downgrade announcement data in Korea. We hypothesize that the existence of controlling shareholders and internal capital markets is a major cause of the negative spillover. We find that the financial constraints of a group-affiliated firm negatively affect the value of other group affiliates. Furthermore, we show that both the parent–subsidiary relationship and the credit rating difference between a downgrade firm and its group-affiliated firms affect the extent of negative spillover. In addition, our robustness test results support the argument that the internal capital market within a business group is a key factor in understanding negative spillovers.

1. Introduction

In many emerging markets, controlling shareholders control one or more firms at the same time without sufficient direct ownership even though they are listed firms. Controlling shareholders may control the operation of many group-affiliated firms through pyramidal ownership structures and cross-holdings (Almeida et al., 2011). During the high-growth stage of the economy, business groups improve investment efficiency by sharing resources among themselves because emerging markets have poorly functioning external capital markets compared with developed markets (Chang and Hong, 2000). The internal capital markets of these groups are thus an effective tool for both diversifying the business into new areas and extending the existing business. As a result, such groups' internal capital markets have fostered the growth of group-affiliated firms. Indeed, the internal capital market structure still influences business group affiliates, for example, even though inefficient use of internal capital markets (i.e., cross-loan guarantees) was prohibited by the corporate governance reform following the Asian financial crisis of 1997 in Korea (Almeida et al. forthcoming).

However, few studies report on the double-edged sword of groups' internal capital markets when one or more group-affiliated firms become financially distressed or enter into bankruptcy (Khanna and Yafeh, 2005; Gopalan et al., 2007). This financial constraint of group-affiliated firms may spread across all other group-affiliated firms through groups' internal capital markets. Thus, group-affiliated firms are exposed to financial risk regardless of their own financial conditions (Bae et al., 2008). For example, Gopalan et al. (2007) find, using Indian business group samples, that providing financial support to group-affiliated firms can

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have a negative spillover into other group-affiliated firms. Similarly, Kim (2016) shows, using Korean business group data, that high group leverage weakens the competitiveness of group-affiliated firms because it inhibits investment.

In this study, we examine the negative spillover effect in Korean business groups by using credit rating downgrade announcement data. We examine how ownership and managerial structure as well as the parent–subsidiary relationship and credit rating differences among group-affiliated firms affect variations in the negative spillover. We measure the change in firms' value using cumulative abnormal returns (CARs) and weighted average cumulative returns (WCARs). Simple CARs are useful in determining how the characteristics of each group-affiliated firm affect the extent of negative spillover.[1] On the other hand, WCARs are portfolio returns constructed from business group-affiliated firms based on weights for firm size considering that business groups are composed of a number of public firms of different sizes. Thus, WCARs are relatively more useful to measure changes in the total value of business groups.

More specifically, we test the following hypotheses. First, we test the existence of a negative spillover in the business group using credit rating downgrade data. Bae et al. (2008) measure the financial condition of firms by using the positive and negative reactions of CARs and WCARs on earnings announcements in Korean business groups to test the spillover effect. However, CARs or WCARs on earnings announcements may not be clearly classified as having a positive or negative impact on the firm because of the subjective nature of perceived earnings quality (Fan and Wong, 2002).[2] We address this shortcoming using credit rating change announcements, because credit rating changes can be clearly classified into positive (upgrade) and negative (downgrade). Furthermore, previous studies have shown that a credit rating downgrade announcement affects common stock returns because credit rating downgrade announcements are informative to investors, unlike a credit rating upgrade (Hand et al., 1992; Goh and Ederington, 1993).[3] A credit rating downgrade increases the probability of bankruptcy and decreases the ability to secure financing in public capital markets. Thus, we estimate that external financial constraints from credit rating downgrade pressure the groups' internal capital markets within the business group. As a result, a credit rating downgrade is a better estimator of financial constraints than is an earnings announcement, as used in the literature, for business groups. In addition, previous studies show that a credit rating downgrade is an unexpected event and that the value of firms that receive a downgrade announcement (*downgrade firms* hereafter) decreases significantly (Goh and Ederington, 2003).

Second, we test whether the ownership structure of the business group affects the extent of negative spillover. In particular, we use the ownership variables of controlling shareholders' ownership, individual controlling shareholders' ownership (individual ownership hereafter), and non-individual controlling shareholders' ownership (non-individual ownership hereafter). Previous studies show that low controlling shareholders' ownership induces a potential expropriation of firm resources, which benefits controlling shareholders (Joh, 2003; Chen et al., 2005). Indeed, firms with a pyramidal ownership structure transfer their resources regardless of whether they benefit from such an action because controlling shareholders intend to bail out the group-affiliated firm from bankruptcy (Bae et al., 2002; Riyanto and Toolsema, 2008). Bae et al. (2008) also show that earnings growth by one group-affiliated firm affects the stock returns of other group-affiliated firms and that ownership structures affect the extent of the spillover effect. In a similar vein, we hypothesize that ownership structure determines the probability of financial support for *downgrade firms* by other group-affiliated firms in the same business group (*other affiliates* hereafter).

Furthermore, Morck and Yeung (2003) suggest that the business group has serious agency problems because the owner-manager represents the controlling shareholders' interests in general. In previous research, controlling managers who are related to controlling shareholders have been shown to represent the interests of the latter (Jensen and Meckling, 1976; Anderson et al., 2003; Yeh and Woidtke, 2005; Villalonga and Amit, 2009; Chen et al., 2013). In the business group structure, controlling managers may expropriate from minority shareholders by transferring financial resources to support financially constrained firm(s). Thus, we hypothesize that the prevalence of controlling managers affects the extent of negative spillover.

Third, we test whether both the parent–subsidiary relationship and the credit rating difference between a *downgrade firm* and *other affiliates* affect the extent of negative spillover. Almeida and Wolfenzon (2006) suggest that the pyramidal ownership structure is a useful tool for controlling shareholders to dominate the business group. In such a pyramidal ownership structure, controlling shareholders do not have enough direct ownership to dominate all group-affiliated firms, and one group-affiliated firm generally has ownership of other group-affiliated firms. In this context, Shin and Park (1999) argue that parent companies provide financial aid to their subsidiaries by guaranteeing cross-payments. In addition, we show that some group-affiliated firms, but not others, have investment-grade ratings. Thus, we expect *other affiliates* with investment-grade ratings to play the role of capital providers, while *other affiliates* with ratings below investment grade play the role of capital demanders in groups' internal capital markets.

To test the research hypotheses above, we use Korean business groups. This approach is appropriate for examining the negative spillover in the business group for the following three reasons. First, Korean business groups, which dominate the Korean economy, generally have interconnections among firms through cross-holdings within the group,[4] providing a valuable empirical

[1] For a firm with a credit rating change announcement, WCARs are value-weighted portfolio returns of other firms in the same business group. Bae et al. (2008) use WCARs corresponding to each event to compute a single return for the group.

[2] Fan and Wong (2002) find low earnings informativeness in seven East Asian countries (Hong Kong, Indonesia, Malaysia, Singapore, South Korea, Taiwan and Thailand). They suggest that because controlling shareholders manage earnings for self-interested purposes, reported earnings lose credibility in the stock market.

[3] Previous studies show that the negative effect of a credit rating downgrade on market value is widely accepted. However, there are inconsistent empirical findings on credit rating upgrades. For example, Hand et al. (1992) and Goh and Ederington (1993) show that the announcement of an upgraded credit rating does not significantly affect the abnormal returns of a firm. However, Cornell et al. (1989) find that upgrade announcements show positive reactions measured over a three-day window (days −1 to +1).

[4] Almeida and Wolfenzon (2006) argue that Korean business groups often form a pyramidal ownership structure, which causes the cross-holding structure, to allow family members to control firms.