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# Disappearing internal capital markets: Evidence from diversified business groups in Korea

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ABSTRACT

This paper examines how the onset of a financial crisis affects the operation of internal capital markets among firms within a diversified business group. We find that active internal capital markets within Korean business groups (*chaebols*) attenuate the financial constraints of the group-affiliated firms, allowing them to make efficient capital allocations during the early 1990s. However, these markets barely function after the financial crisis of 1997. Instead, we observe public debt markets serving as a substitute for internal capital markets. Our results suggest that *chaebol* firms' coordinated attempts to achieve healthier financial structures in the wake of the crisis have taken place at the expense of investment efficiency.


## 1. Introduction

A number of recent studies show that corporate divisions of a diversified firm are not financially independent. Accordingly, internal capital markets play a major role in allocating capital in diversified firms and numerous papers have investigated the benefits and costs of these markets during the past few years.[1] In this paper, we examine capital investment decisions of diversified firms and the operation of internal capital markets using a unique dataset from Korean large business groups (*chaebols*) during the period 1993–2005. We further examine how the onset of a financial crisis affects the operation of internal capital markets and the efficiency of capital allocation among firms within a diversified business group. In particular, we analyze whether the capital expenditures of *chaebol*-affiliated firms (hereafter *chaebol* firms) are justified by the investment opportunities and resources available to them. Our sample period encompasses the Korean financial crisis that erupted in late 1997, an event that is a natural structural break for examination. Since the crisis, the Korean government carried out a series of restructuring programs for *chaebol* groups.[2] We investigate whether *chaebol* firms' capital allocation and investment activities were different before and after the crisis.

This study makes several contributions to the literature. First, up until lately, the empirical studies on corporate diversification and internal capital markets have mainly focused on US conglomerates (Lamont, 1997; Shin and Stulz, 1998; Khanna and Tice, 2001; Jandik and Makhija, 2005), and our findings add to this growing body of literature, providing international evidence that can be used to make future generalizations.[3] Korean *chaebols* are similar to US conglomerates in two fundamental ways: (1) being

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[1] Evidence on the existence of internal capital markets within a diversified firm is provided by Lamont (1997) and Shin and Stulz (1998). See also Stein (2003) for a detailed discussion of the benefits and costs of internal capital markets.

[2] After the onset of the financial crisis, *chaebols* were commonly criticized by the media for debt overhang problems along with excessive diversification and over-investment. The *chaebol* restructuring programs typically comprise five major tasks: (1) business consolidation into core competence areas; (2) improvement of financial structure; (3) elimination of cross-debt guarantees; (4) enhancement of transparency; and (5) improvement of accountability.

[3] A few recent papers such as Islam and Mozumdar (2007), Guariglia (2008), and Ratti et al. (2008) show international evidence on the relationship between financial constraints and investment choice, while little attention is given to the operation of internal capital markets in these studies.

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well-diversified, they both allocate funds according to the needs of each group firm (or division); (2) they share similarities in corporate strategic planning. Second, we analyze the impact of a financial crisis on the operation of internal capital markets. Given that *chaebols* were at the core of the crisis, they represent an interesting case study on the impact of a financial crisis on capital allocation behavior. To our knowledge, the current paper is the first to comprehensively examine the function of post-crisis internal capital markets, and how these markets affect the efficiency of capital allocation among *chaebol* firms.[4]

Finally, by using firm-level data, our study is not subject to the segment-level data limitations reported in prior studies (Lamont, 1997; Shin and Stulz, 1998). Our firm-level dataset has several advantages over the US segment-level (or division-level) dataset. First, as discussed in Scharfstein (1998) and Shin and Park (1999), US conglomerates often allocate capital expenditures and assets arbitrarily across segments. In contrast, *chaebols* have less latitude in doing so since they are comprised of independent firms. We therefore should expect our *chaebol* dataset to provide less arbitrary accounting information. Second, divisional Tobin's *Q*, a proxy for a division's investment opportunities, is not available in the US dataset. Hence, Lamont (1997), Shin and Stulz (1998), and Scharfstein (1998) use industry *Q* instead of divisional *Q*. A raised concern of using industry *Q* is that it may not be related to a division's actual investment prospects. In contrast, using our dataset, we can compute a firm-specific *Q* for each public *chaebol* firm and thus mitigate the concern over industry *Q*.

In contrast to anecdotal evidence, our results show that during the early 1990s active internal capital markets exist within *chaebols*. Along with the *chaebols*' easier access to external financing, the internal capital markets attenuate the financial constraints of group-affiliated firms, allowing capital to be allocated to its best use. These results of our study in the pre-crisis period are close to those of Khanna and Tice (2001), who document that in the discount retail industry, investments of diversified firms in the discount retail division are more sensitive to performance than those of focused firms. Jandik and Makhija (2005) also report similar results from the US electric utility industry.

These studies do not, however, investigate the link between a crisis of the domestic financial sector and the operation of internal capital markets. In contrast, our study makes a step forward in addressing this link. The pre-crisis efficiency of these internal capital markets seems to have been at a barely functional level after the onset of the financial crisis in 1997. It appears that *chaebol* firms were discouraged from making large investments, a reversal mainly driven by the government-initiated corporate restructuring program set in place after the crisis. On the contrary, size maximization is one of stated strategic goals of *chaebol* firms during the pre-crisis period as addressed in Ferris et al. (2003).

In this study, we further investigate the efficiency of cross-subsidization since internal capital markets are argued to have both bright and dark sides. In an efficient internal capital market, a business group directs corporate resources to their best use. We thus expect firms with better investment opportunities to have higher priority in accessing group resources (Shin and Stulz, 1998). Our empirical results suggest that *chaebol* groups' headquarters are indeed successful at picking winner firms and making efficient reallocations of group funds across affiliated firms. This implication is consistent with the studies of Stein (1997) and Villalonga (2004), which posit the positive perspective of diversification.

Following the crisis, however, as a central part of the structural reforms by the government, *chaebol* firms were required to lower their debt-to-equity ratios to less than 200%. Cross-subsidization seems to disappear; we find that *chaebol* firms' investment decisions become little affected by the cash flow of other group firms. Instead, public debt markets seem to be functioning as a substitute for internal capital markets after the crisis. It would appear that the malfunctioning of internal capital markets as a result of the crisis, along with the reduced level of leverage, drove *chaebol* firms to be financially constrained, preventing them from fully exploiting subsequent investment opportunities. Taken together, our results suggest that as the crisis unfolded, *chaebol* firms underwent drastic changes in their investment decisions, tending toward improved financial structures and enhanced transparency at the expense of efficiency. Our post-crisis findings are closely related to the findings of Kim et al. (2004), in that they provide evidence of the post-crisis market's disciplining of *chaebols*. They document that main banks have gained power by charging higher interest rates to their client *chaebol* firms after the onset of the crisis.[5]

This paper is organized as follows. In Section 2, we describe those structural weaknesses of *chaebol* firms that seem to be related to the eruption of the Korean financial crisis. Section 3 discusses the data and methodology used in our paper. Section 4 presents and discusses the empirical results. Section 5 presents the concluding remarks.

## 2. Korean *chaebols* and the financial crisis

*Chaebols* are large business conglomerates in South Korea. Since the 1960s, they have played a major role in developing the Korean economy. At the same time, however, their corporate activities are criticized as one of the primary causes of the 1997 financial crisis.[6] According to Chang et al. (1998), financial liberalization is further argued to be a major cause of the crisis. From the early 1990s, the Korean government has started removing controls over the financial sector and accelerated liberalization.

Among many liberalization plans, capital account liberalization is the most important and has the greatest impact on the economy. By 1995, the government has significantly reduced its regulation on foreign borrowings, which has increased from $44 billion in 1993 to $120 billion in 1997. Korea's foreign debt however has a problem of maturity structure mismatching. The share of short-term debt in total debt is too high because short-term debt does not require detailed information and permission from the Ministry of Finance and Economy. Furthermore, the demise of industrial policy has allowed several companies to over-invest in already overcrowded industries such as the steel industry by *Hanbo* and the automobile industry by *Samsung*. This exacerbates the 1997 financial crisis.

Large foreign banks, which have been lending heavily to Asian corporations, experience a surge in non-performing loans during the Asian financial crisis. In response they withdraw short-term loans from Korean merchant banks and large corporations all at once. During that time, Korean merchant banks largely provide long-term credits to financial firms in other crisis-hit Asian countries and large Korean corporations have significant investments in long-term tangible assets such as land and buildings. A number of Korean banks and corporations are bankrupted during the Asian financial crisis, and it has motivated the establishment of

[4] Hong et al. (2007) and Rousseau and Kim (2008) also document the corporate investment activities of Korean firms before and after the 1997 financial crisis. They however do not explore the changing role of internal capital markets within *chaebols* over time.

[5] In a related study by Byun et al. (2008), it is however suggested that *chaebol* firms with sound corporate governance practices have greater access to low-cost financing.

[6] Three stylized facts in the *chaebol* firms appear to be related to the financial crisis: (1) high leverage empowered by the government's favored influence on credit allocation; (2) overinvestment apparently facilitated by high leverage; and (3) the weak corporate governance structure.