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# Stock return comovement and Korean business groups<sup>☆</sup>

Chan Ho Cho<sup>a</sup>, Tim Mooney<sup>b,\*</sup>

- <sup>a</sup> University of South Dakota, United States
- <sup>b</sup> Pacific Lutheran University, United States

#### **Abstract**

This paper explores whether business group affiliations affect the covariance structure of stock returns in Korea. We find that the stock returns of firms belonging to the same business group show positive and significant comovement. The strong comovement between group returns and firm returns is explained by correlated fundamentals. We find strong comovement among business group affiliate earnings. Moreover, variance decomposition of returns shows that cash flow news plays a relatively more important role in explaining group comovement than discount rate news, suggesting a link between stock return comovement and the "tunneling" and "propping" behaviors of business groups. Finally, return comovement increases when a firm joins a business group.

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#### 1. Introduction

Large, diversified business groups are a prominent feature of the economic landscape in many countries, particularly in Asia. A business group is a consortium of firms that are connected, often through common share ownership of member firms. It is common for a single individual or family to control all member firms, and cross holdings among member firms are also typical. The role of business groups has attracted considerable academic attention, with researchers presenting evidence in favor of both value-creating and value-destructive functions of business groups. However, relatively little attention has been paid to correlations among member firm stock returns.

In this study, we explore whether business group affiliations impact the covariance structure of stock returns for business

*E-mail address:* mooneytk@plu.edu (T. Mooney). Peer review under responsibility of Africagrowth Institute. groups in South Korea. Focusing only on Korean business groups (known as *chaebol*) provides two advantages. First, chaebol firms are clearly defined. The Korea Fair Trade Commission (KFTC) publishes business group membership each year, identifying member firms and ranking groups by total assets. Second, focusing on Korean markets helps to control for differences in country-level institutional environments that may introduce endogeneity issues and confound results (Joh, 2003).

Using stock returns and business group composition data for Korean firms during the period 2002–2011, we find that stock returns for firms within the same business group exhibit significant comovement, beyond market-wide movements. Furthermore, when we control for industry-wide movement, the effect of group affiliation on chaebol firm comovement remains positive and significant. Our findings are consistent with related studies which suggest that corporate governance mechanisms permitting concentrated ownership over member firms is associated with increased stock return comovement (Morck et al., 2000; Jin and Myers, 2006; Fernandes and Ferreira, 2009).

We next examine the sources of the business group return comovement. Vijh (1994) shows evidence that return comovement could arise from fundamental (economic) or sentimental (noneconomic) factors. It is likely that stock return comovement within Korean business groups stems from the correlation

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<sup>\*</sup> Corresponding author at: Pacific Lutheran University, 12180 Park Avenue South, Tacoma, WA 98447, United States. Tel.: +1 917 676 6316.

of the affiliates' fundamentals. Firms within Korean business groups are connected by mutual cross holding agreements. These cross holding arrangements might be an underlying factor affecting return comovement, because even though a controlling shareholder does not have an incentive to manipulate the performance of affiliates, the fundamentals of affiliates may be affected through equity cross holdings (Bae et al., 2008). Thus, if strong return comovement of business group affiliates is significantly influenced by these activities, then the fundamentals of affiliates would also exhibit strong comovement. To test the link between return comovement and fundamentals, we measure comovement in group members' earnings. We find strong positive comovement in business group firm earnings, consistent with the fundamental explanation of business group return comovement.

We further explore the sources of chaebol stock return comovement by evaluating the relative importance of two fundamental components of stock returns, cash flow news and discount rate news (Campbell, 1991). Stock returns change due to innovations in expected future cash flows-which measures real activity-and innovations in the discount rate applied to those cash flows, which measures financial activity. Therefore, we decompose unexpected stock returns into expected cash flow and discount rate news by utilizing the return decomposition framework in Vuolteenaho (2002). We find that stock return comovement is, on average, more strongly related to cash flow news comovement than discount rate news comovement, suggesting that real activity is more important than financial activity in explaining chaebol stock return comovement.

To validate our evidence that the comovement of stock returns of affiliates is attributable to the chaebol group affiliation effect, we examine a subsample of affiliates that changed their group affiliation during the sample period. Our investigation is motivated by recent studies that have explored the "index inclusion effect" on the comovement of stock returns. For example, Barberis et al. (2005) find that corporations newly added to the S&P 500 index experience a significant increase in stock return comovement with the rest of the index. Empirical analysis of firms that are newly added to (or removed from) a Korean business group would provide a more rigorous setting for verifying robustness of the group affiliation effect on the comovement of stock returns. We find that stock returns of firms that newly join a Korean business group comove positively with the returns of the group they join. Prior to joining the chaebol, these firms exhibit an insignificant degree of comovement with returns of that group.

Our study is related to Kim et al. (2015), who focus on comovement before and after the 1997 Asian financial crisis. The authors find that business group comovement increased following the crisis, which they attribute to being in investors' preferred "habitat" along the lines of Barberis et al. (2005). In addition, Kim et al. find that comovement is not related to simple fundamental measures such as ROA, cash flow, and related party transactions. We extend Kim et al.'s results by decomposing business group comovement into cash flow news and discount rate news. Our results contrast with those of Kim et al. in that we find substantial evidence that business group comovement is

related to fundamental factors, as evidenced by group earnings comovement as well as our evidence from the decomposition of group returns.

Our results contribute to the literature on return comovement in three areas. First, our results provide new insight into the relationship between business group affiliations and the covariance structure of stock returns. Second, we show evidence that stock return comovement among chaebol firms is driven by comovement in fundamental factors of member firms. Finally, our study makes an important distinction between cash flow news and discount rate news, and provides compelling evidence that cash flow news is more relevant than discount rate news in the comovement of stock returns among chaebol members.

The rest of the paper is organized as follows. Section 2 briefly reviews relevant literature. Section 3 describes the data employed in our study. Section 4 documents the group comovement of stock returns for firms that are affiliated with Korean business groups. In Section 5 we explain the decomposition framework of stock returns, and we test whether group returns comovement is more strongly associated with cash flow or discount rate news comovement. Section 6 examines changes in business group affiliation, and Section 7 concludes.

#### 2. Literature review

Existing literature has examined the value implications of business groups. One collection of studies suggests that business groups have the potential to perform a value creating function among member firms. For example, in countries where external capital markets are not well developed and have severe information asymmetry, business groups can facilitate more efficient allocation of internal capital or sharing of resources and risks. Khanna (2000) reviews the literature on business groups in emerging markets and reports that they can enhance social welfare in countries that lack certain institutions. Khanna argues that business groups may partially replace contract and property rights enforcement mechanisms that are more established in developed countries. Khanna and Palepu (2000) study business groups in India and find similar results, that business groups can help overcome imperfect markets.

Other studies find evidence that business groups may exploit the weaker institutions of the countries in which they operate, taking advantage of minority shareholders. This stream focuses on the agency problems that arise from the separation of cash flow and control rights, a defining feature of many business groups. This discrepancy in cash flow and control rights can create incentives for the controlling shareholder of the group to expropriate wealth from member firms, which researchers have termed "tunneling." Johnson et al. (2000) review the legal treatment of tunneling and find that it is prevalent in both developed and emerging countries. Furthermore, the authors find that it is often conducted legally, despite being in conflict with minority shareholder interests. Examples of such legal tunneling cited by Johnson et al. include the sale of assets from a firm to its controlling owner at below-market prices, loan guarantees collateralized by the firm's assets, and excessive executive compensation. Bertrand et al. (2002) find evidence of tunneling in

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