Executive Talent Allocation across Family Business Group Affiliates *

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Abstract

Utilizing novel data on the executive movements across listed firms around the world, this study investigates how a family business group allocates human capital among their affiliated firms. We show that groups actively leverage their internal labor markets (ILMs) to source executive talent, with 30% of executive movements originating from other affiliated firms. Despite having overall greater demands for executive talent, group firms hire significantly fewer executives from the external labor market than comparable standalone firms. Such external hiring only rises in periods of poor performance. Within a group, the reallocation of talent is mainly directed towards younger and bottom-of-pyramid member firms, and those with relatively weaker performance and affiliates that receive within-group investments. Overall, this study implies that family business groups maintain active ILMs, through which critical human capital can be reallocated to support the development of group members.

Keywords: Family Business Groups, Executive Human Capital, Resource Allocation, Internal Labor Markets

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1 Introduction

Business groups play a significant role in many economies across the globe. 19% of listed firms in 45 major national economies are controlled by family business groups[1] and this proportion rises to more than 40% for some emerging markets (Masulis et al., 2011). Such dominance of business groups in many economies around the world raises critical questions regarding how groups accumulate and allocate vast resources under their control. Research on business groups has primarily focused on the allocation and transfer of financial capital among affiliates.[2] However, the allocation of critical human capital has received much less attention. This is a significant omission since the economic dominance of groups allows them to have substantial control over a pool of human capital. For example, workers in group firms account for approximately 20% of the global labor force[3] in Europe and Central Asia and North America and 5% in East Asia and Pacific (Aguilera et al., 2023).

This paper fills this gap by exploring the role of business groups in allocating executives and senior managers, collectively referred to as executive talent. We focus on this particular type of human capital because executive talent plays a pivotal role in a company's success. More importantly, compared to rank-and-file employees, executive talent is considerably more identifiable and tightly linked to individual organizations. While employees' movements can be driven by general labor market forces, the movements of executives are much more dependent on a group's allocation decisions.

Examining the movements of executive talent therefore allows us to explore two important research questions: what factors influence the extent to which the business groups rely on both internal and external labor markets to obtain access to executive talent and how do groups use internal labor markets to allocate executive talent among group affiliates? In this study, the term "internal labor market" (ILM)[4] refers to jobs and employment within a business group

[1]There are two major classes of business groups, namely, family and non-family groups. We define groups controlled by wealthy families or individuals as family business groups. Non-family groups are defined as those that are government-owned or widely held.

[2]For example, Almeida et al. (2015); Buchuk et al. (2014); Masulis et al. (2011, 2020, 2023); Larrain et al. (2019). Capital allocations through internal capital markets (ICMs) inside group firms are examined in studies such as Stein (1997, 2002); Duchin and Sosyura (2013); Giroud and Mueller (2015).

[3]As of 2016, the total global labor force amounted to 3,340,000,000 individuals, as reported in the World Development Indicators database, accessible via: https://data.worldbank.org/indicator/SL.TLF.TOTL.IN.

[4]The concept of ILMs traditionally refers to labor markets within a firm or other organization (*e.g.*business groups) that are governed by a complex set of labor allocation and labor pricing rules and procedures (Althauser, 1989; Doeringer and Piore, 1971; Dunlop, 1966; Baker et al., 1994a,b).

that are determined and managed under group labor allocation and labor pricing rules, while "external labor market" (ELM) refers to all executive positions held in organizations outside of a particular business group.

Prior literature has offered conflicting views regarding the extent to which business groups source and reallocate internal executive talent. The institutional void view suggests that business groups primarily rely on their ILMs to optimize human capital allocation when the ELMs are less efficient. These ILMs have similar functions to ICMs, in that they reduce group firms' dependence on external markets. Existing labor within a group organization creates a talent pool potentially accessible through a group's ILM. ILMs offer several advantages for a business group, encompassing the development of group-specific skills and knowledge(Becker, 1962; Bidwell and Keller, 2014; Bidwell, 2011), improved job matching through access to internal information about managerial capabilities (Doeringer and Piore, 1971; Williamson et al., 1975; Hermalin and Weisbach, 2017), enhanced job security and reputation benefits(Chan, 1996; Williamson et al., 1975; Doeringer and Piore, 1971), and reduced recruitment and dismissal costs Belenzon and Tsolmon (2016). Therefore, business groups can effectively optimize human capital utilization by reallocating talent to align with changing organizational needs, resulting in significantly more executive hires from ILMs and fewer from ELMs. ELM hiring is more likely to occur during periods of poor firm performance when the available internal group talent may be insufficient to meet the firm's needs.

On the other hand, the entrenchment view of business groups (*e.g.* Morck et al., 2005) predicts that business groups grow to absorb a significant portion of the available labor force in the economy, leaving limited opportunities for the growth of standalone firms. While ILMs offer several benefits, they also bring added costs such as internal training expenses, a limited pool of talented candidates (Zhang and Rajagopalan, 2004; Bidwell, 2017), and management entrenchment problems (Shleifer and Vishny, 1989). Business groups may attempt to mitigate these problems by sourcing talent from ELMs. If this hypothesis holds true, group firms are expected to hire more from ELMs for their workforce needs, while contributing less to the labor supply of ELMs.[5] This is because increased job security and promotion incentives associated with active ILM movements often motivate workers to remain within the group.

Anecdotal evidence on business group executives' tenure and mobility also adds to these

[5]For instance, beginning in the late 1990s, a growing number of workers in Taiwan were employed by large business groups. This trend has led to Taiwan's economic structure becoming increasingly centered around these large business groups (Chung and Mahmood, 2010).

contrasting perspectives. While some executives tend to hold long-term positions within a single firm,[6] others frequently move to different affiliated firms within the same group over their careers. One typical case is Japanese *keiretsus* whose human resource management practices are characterized by a lifetime employment system and frequent rotations of career workers and managers (Odagiri, 1994; Belderbos and Heijltjes, 2005).

To explore the allocation of executive talent within family business groups, we assemble a novel dataset that combines comprehensive employer-employee data drawn from the Directors, Managers, and Contacts (DMC) dataset in the Bureau van Dijk (BvD) Orbis People Database for listed firms (and their private subsidiaries). This study specifically focuses on the executive labor movements across listed firms, with a particular emphasis on firms affiliated with business groups. By investigating executive labor markets beyond the boundaries of firms that are legally independent entities, this study is pioneering the exploration of such movements in an international setting.

For the classification of firms into family or non-family group categories, as well as into standalone firms, we rely on the international business group affiliation dataset compiled by Masulis et al. (2011, 2020, 2023). The combined dataset allows us to accurately track the employee movements (inflows and outflows) over time at firms within and outside business groups. Our primary focus lies on executives and senior managers, as the ILM benefits are particularly pronounced for their recruitment due to their strategic importance. Additionally, it is more costly for a firm to assess executive ability, provide training, offer job security and incentives, and fire them, compared to lower-level employees. By comparing the movements of family group firms and standalone firms, and with a particular focus on movements within the same group, we are able to provide new insights into the executive labor markets operating within family business groups.

We start by showing that family groups actively use ILMs to reallocate executive talent among their listed member firms. With centralized control over these member firms, family business groups have the ability and incentives to move executives across their affiliated firms. In contrast, standalone firms rely on ELMs for additions to their labor supply. The institutional void view supports the idea that family groups are motivated to actively leverage their ILMs.

[6]For example, in 2023 the executive directors of Swire Pacific Limited had been employees of Swire Group for at least 20 years. Executive directors of Mitsubishi Corporation were employees for at least 36 years. The executives of Tata Corporation and Rio Tinto Limited have an average tenure of 27 years and 12 years respectively.

However, the entrenchment view predicts more hires from ELMs, while the resource allocation view suggests a reduced reliance on ELMs for executive recruitment.

Our results show that compared with standalone firms, family group firms hire fewer executives from firms outside the group, despite hiring more executives overall, holding other factors constant. This implies that they hire more executives than standalone firms, and do so mainly by relying on the group's ILM. If family group firms and standalone firms have similar demands for executive talent after controlling for firm characteristics, then observing less ELM activity would imply more internal hiring, presumably from its ILM. Compared to an average standalone firm, family group firms have 14% fewer hires from the ELM. Nonetheless, when ILMs and ELMs are both taken into account, these family group firms demonstrate an aggregate 17% greater number of new hires compared to standalone firms. In addition, the results for executive outflows at listed firms suggest that family group firms supply more executives to their group affiliates relative to firms outside the group.

One empirical challenge for our analysis is that the high rate of internal movements could arise simply because of dominance or concentration in certain industries, as business groups typically consist of a large collection of industry-related firms (Yiu et al., 2007). Moreover, group firms and standalone firms typically have different financial characteristics (Masulis et al., 2011), which could partially explain a group firm's greater ability to attract executives from ELMs. We tackle this empirical challenge of exploring differences between group ILMs and ELMs by using two separate approaches.

First, we use the nearest neighbor matching method for family group firms to select their best-matched standalone firms in order to compare group firms to standalone firms from the same country and industries with similar demands for executive employees.[7] Similar to the results on the unmatched sample, results from our matching estimators confirm that family group firms overall hire new executives more frequently than standalone firms, but they rely less on ELMs for their hiring needs, although these group firms are otherwise similar to the matched standalone firms in a host of dimensions.

Second, we construct a "pseudo-group" matched to each actual family business group in the sample and run regressions of executive movement measures for these pseudo-group firms

[7]To control for differences between family group firms and standalone firms, we impose exact matching on country, year, and industry in selecting the standalone firm with the closest covariate distance to that of the family group firm. The covariates we match on are firm size, firm age, annual stock returns, Tobin's q, capital expenditures, tangibility, liquidity, and financial leverage.

compared to the actual group firms. To mimic the actual group's composition, each pseudo-group consists of standalone firms that match each affiliated firm in the actual business group, based on the aforementioned matching procedure. Without resource reallocation decisions determined by the group, we expected to observe a lower frequency of executive movements across the listed firms of pseudo-groups compared to the actual groups. The pseudo-group analysis shows that the additional inflows of executive employees at family group firms are mainly from internal markets: actual family group firms have 0.7% more internal movements than pseudo-group firms, nearly double the sample mean for internal executive inflows of 0.36%.

Next, we explore how business groups use ILMs to reallocate executive talent with regard to a firm's performance. With their typically greater economic power, family business groups may enjoy a competitive labor market advantage in attracting talent from ELMs and retaining them within their ILMs. If this advantage holds, then family group firms may hire more from ELMs, especially when they are performing well. However, when family business groups actively reallocate human capital within the group to meet specific needs, they may exhibit frequent internal movements within their ILMs and resort to ELMs primarily during periods of affiliate underperformance.

We find that family groups appear to be actively optimizing the allocation of their human resources based on firm performance, with ILMs and ELMs complementing each other. Results on the unmatched sample show that executive movements are negatively related to firm performance. When an affiliated firm within a business group performs poorly (e.g., low stock returns), more executives will be hired. The pseudo-group analysis confirms that poorly performing firms within actual business groups tend to attract more executive talent, both internally and externally, compared to pseudo-group firms. Firms that underperform are more likely to have an intense demand for new executive talent to address their challenges and improve performance. As a result, they also have a greater need to tap the ELMs to recruit additional executive talent. These results indicate that, while family groups rely on ILMs to redeploy executive talent, they also tap into ELMs for additional talent when needed.

After comparing group firms to standalone firms, we shift our focus to group affiliates only and examine how ILMs operate to reallocate important managerial capital within the group. We find that the pyramidal structure supports more active and efficient internal movements than does a horizontal group structure. Additionally, for firms at different layers of the control chain in pyramidal business groups,[8] our analysis reveals certain patterns of executive flows inside

[8]Within a pyramid group, there are *Apex* firms that are at the very top of a pyramidal chain, *Bottom* firms

pyramidal groups through which a family can maintain operating control, and also strategically satisfy the weaker firm's demands for executive talent. First, apex firms have relatively more stable executive teams as they are the closest to the controlling family and provide common administrative, financial, or managerial coordination (Aguilera et al., 2023; Khanna and Rivkin, 2001; Leff, 1978). As a result, there are less active executive hiring from their ILMs, compared to middle and bottom firms. Second, high-growth bottom firms draw more executives from their ILMs, while drawing fewer executives from ELMs. These growing bottom firms have a greater demand for executive talent, especially for executives with group-specific skills so as to leverage group synergies. The high growth of bottom firms creates greater demands for executive talent, especially those who have internal group experience, to manage that growth effectively. They understand group internal dynamics, culture, and operational nuances, which can be invaluable for optimizing performance and collaboration.

Having compared firm-level ILM and ELM executive movements, this study delves deeper into the internal movements across firms within family groups. We narrow our sample down to firm pairs involved in executive movements. Specifically, we analyze the characteristics of each pair of firms that receive talent and firms that supply talent for the family group firm sample. The results indicate that family business groups use their ILMs to provide assistance to foster growth at weaker group members. Executives within the group tend to move from better-performing to poorer-performing firms, and from older to younger member firms that have less cash holdings and less capital investments. This suggests that these groups strategically reallocate their human capital resources so as to better support their member firms, which may otherwise realize lower growth rates. In terms of the group's ability to attract human capital from ELMs, we find that stronger group firms are more successful in drawing executive talent from ELMs. Executives who depart from standalone firms tend to move to larger, older, and better-performing group firms.

To mitigate the selection bias of the firm pair analysis on observed executive movements, we next focus on the sample of executives who hold key positions at publicly listed group firms at the parent level. By comparing the firm characteristics of all possible sender firms for executive appointments at a group firm, we find that when an executive comes from a firm with better performance, this is more likely to be an ILM hire. This highlights how groups tend to direct executive talent within their ILMs. Moreover, a comparison between the possible senders

at the base of the pyramid, and *Middle* firms between the top and the bottom layers.

and the observed movements to group firms reveals that executives who join group firms are more likely to come from within the group if their former group employer has stronger stock performance.

We further ask whether the allocation of executive talent aligns with internal capital flows by investigating if group firms that provide more capital to other group affiliates also supply executives to these other group affiliates. We analyze this question by using a proxy based on changes in a firm's external investments in affiliated firms. We form a sample of all possible sender-receiver firm pairs of business group members. The results show that an increase in a sender firm's investments in affiliated firms positively and significantly impacts the likelihood of executive movements from the sender to the receiver firm within a family business group. This effect holds even when considering ownership and operational relationships. In addition, direct ownership relationships and supplier-customer relationships also increase the likelihood of internal movements of executives.

Our results also highlight the important role played by controlling families in the strategic allocation of executive talent through ILMs within business groups. The controlling family is motivated to capture the benefits of capital transfers, resource allocations, and strategic deployment of executives to enhance the overall operations of the business group. Non-family business groups are more loosely affiliated and, hence, lack the incentives to look after their weaker affiliates and support them through ILM activity. We find no evidence of reallocations of executive talent in non-family business groups.[9] We also do not find that labor movements and capital movements are aligned in non-family business groups.

Overall, our findings demonstrate that family business groups reallocate important human capital, specifically executive talent, through ILMs. Our analysis of the direction of executive labor flows within business groups indicates that these groups strategically deploy executives to underperforming affiliated firms, while high-performing group firms attract executives from standalone firms through ELMs. Firms that provide capital to other affiliates also tend to supply executives to these same affiliates, which shows an alignment in internal capital flows and internal executive labor flows. We also find that within a pyramidal group, more executives move towards bottom firms with high growth potential.

Our results advance the current literature on business groups. There are extensive studies

[9]The internal movements of executives in non-family groups are from larger firms that have deeper pools of executives to smaller firms.

that highlight the important role played by ICMs in business groups[10], but business groups' ILMs have generally been overlooked, at least until recently. Previous research suggests that groups have advantages not only in terms of ICMs, but also in terms of ILMs. For example, Khanna and Palepu (1997) use Tata Group's case to show how groups offer management training in an economy where such resources are limited. Khanna and Palepu (1999) attribute the post-policy reform increase in group activity in Chile and India to group advantages in product and labor markets. A series of recent single economy studies investigate business group ILMs. For instance, Huneeus et al. (2021) and Cestone et al. (2018) use employer-employee matched data in Chile and France to show labor mobility inside business groups as a response to changes in economic conditions. The results of the other two cross-country studies, which use firm-level employment data, indicate that ILMs provide employment stability and labor flexibility in the face of economy-wide shocks and market frictions (Belenzon and Tsolmon, 2016; Faccio and O'Brien, 2021).

Distinct from these other papers, our study primarily focuses on executives, who are key employees holding important management and operating roles, for two reasons. First, movements of executive labor respond differently to firm performance compared to regular firm employees which is the focus of the previous literature. Reich et al.'s (1973) theory identifies two labor market segments: high-wage, high-advancement jobs (primary) and low-wage, limited-advancement jobs (secondary), with significant barriers to mobility between them. In this study, we focus on individuals in the primary segment.[11] These senior executives play a crucial role in steering a firm's strategies, performance, innovation, and social responsibilities, as evidenced by studies such as Agarwal et al. (2021); Bertrand and Schoar (2003); Bloom et al. (2013); Malmendier and Tate (2008); Islam and Zein (2020). Second, the employment histories of these senior executives are relatively transparent due to public firm disclosure requirements. This transparency allows us to construct employer-employee data across different economies and examine job-to-job movements of this executive talent over time, both within and outside the business groups.

Furthermore, we look inside the business groups and document the directions of executive movements within a group. While firm-level aggregate employment data does not allow us

[10](e.g., Belenzon et al., 2013; Boutin et al., 2013; Almeida et al., 2015; Buchuk et al., 2014; Masulis et al., 2011, 2020, 2023; Larrain et al., 2019)

[11]Our employment sample comprises CEOs (or other top executives, depending on the terminology in different countries), other C-suite members, executives, managers, and other management employees of the listed firms; it also includes these top management employees in their private subsidiaries.

to track the direct relationships between two firms in the labor markets, our unique dataset permits direct observation and examination of the receiver and sender firms associated with each executive movement. This enables us to identify a previously undocumented process through which family business groups provide support to their weaker affiliates through the allocation of group resources.

In addition, our findings have important implications for the study of ILMs in the labor economics literature more broadly. This study extends the internal labor markets research in most prior literature, which discusses ILMs from the vantage point of cross-plant and within-firm labor movements (*e.g.* Doeringer and Piore, 1971; Tate and Yang, 2015), by delving into executive labor markets that go beyond the boundaries of individual firms. This is the first study exploring executive movements across listed firms in an international setting as well as presenting empirical evidence of such movements in ILMs within the boundary of business groups.

2 Related Literature

2.1 Business Groups

Scholars have studied the bright and dark sides of business groups since the late 20th century from the perspective of group advantages in capital, labor, and product markets. ICMs of business groups have attracted considerable interest. On the other hand, there is little empirical research specifically relating to the ILMs of business groups until very recently. Carney et al. (2018) summarize theories explaining the prevalence of business groups into two broad categories entrenchment/exploitation (Morck et al., 2005) and the institutional void view Carney et al. (2018).

According to some of the extant literature, firms form business groups because the controlling family can expropriate minority shareholders through resource tunneling activities (Johnson et al., 2000; Bertrand et al., 2002), often in the context of Korean chaebols (Bae et al., 2002; Baek et al., 2004, 2006).[12] This exploitation motives of business groups gives rise to group entrenchment issues, conflict of interest agency problems and economy-wide resource misallocation (Morck et al., 2005; Hamdani et al., 2020). Studies such as Almeida and Wolfenzon

[12]Other work on tunneling and expropriation in business group literature includes Fisman and Wang (2010); Claessens et al. (2000); Lemmon and Lins (2003); La Porta et al. (1999, 2002).

(2006); Boutin et al. (2013); Masulis et al. (2023) provide theoretical models and empirical evidence warning of such economic entrenchment issues in large business groups.

Some other research explains the prevalence of business groups in many emerging economies as a response to institutional underdevelopment, such as undersized capital markets and weak legal systems (Khanna and Yafeh, 2007; Morck, 2010). Almeida and Wolfenzon (2006) argue that business groups can better support new firms' funding requirements in underdeveloped external capital markets. This echoes the financing advantage explanation of the pyramidal structure of business groups proposed by Hoshi et al. (1991). Subsequent research has also reported empirical evidence consistent with the internal financing motives of business group formation (Belenzon and Berkovitz, 2010; Fisman and Wang, 2010; Gopalan et al., 2007; Almeida et al., 2011; Masulis et al., 2011, 2020, 2023).

2.2 Internal Labor Markets

The concept of ILMs has been thoroughly explored in the fields of labor economics and human resource management.[13] ILMs are typically characterized by organizational systems in which employers offer career advancement opportunities to their existing employees, rather than relying on external recruitment, thus distinguishing them from ELMs. Starting with the seminal works of Doeringer and Piore (1971) and Baker et al. (1994a,b) in the late 20th century, there has been extensive research on the functioning of ILMs within organizations, as evidenced, for instance, by Lazear and Oyer (2003) and Martins (2021). Some studies focus on employee mobility within ILMs. For example, Bidwell and Mollick (2015) compare the roles of internal and external mobility in managerial careers and show that internal mobility is more likely than external mobility to lead to promotions and career advancement.

The role of ILMs and labor mobility within conglomerates, which share many similarities with business groups in terms of diversification and organizational structure, has been examined by several scholars in recent years. Various studies investigate labor markets of the general labor force inside a firm (e.g., Giroud and Mueller, 2015; Tate and Yang, 2015, 2016; Silva, 2021), often in relation to the mobility and reallocation within conglomerate ILMs and their

[13]The concept of ILMs has transformed from its traditional definition, which refers to a collection of rules and procedures to establish labor pricing and allocation within the organization (Doeringer and Piore, 1971; Dunlop, 1966; Baker et al., 1994a,b). The allocation or movements may be temporary or permanent lateral transfers, promotions, demotions, or layoffs to the ELM (Dunlop, 1966). This concept has since evolved to describe some or all the clusters of jobs within a plant or a firm. It has further evolved to describe the phenomenon in some occupational labor markets, both within and across firms (Althauser, 1989; Osterman, 1984).

importance to the boundaries of a firm and corporate strategic diversification. Studies by Tate and Yang (2015) and Giroud and Mueller (2015) show that conglomerates respond to closures or financial constraints by reallocating employment and investment to more promising industries and plants.

Recently, some researchers have started exploring the ILMs of business group firms. For example, Faccio and O'Brien (2021), using employment and macroeconomic data from 50 countries, reports that business group firms display substantially less pronounced fluctuations in employment than non-group firms in response to economic shocks. In addition to the focus on executives, this study provides a more detailed and comprehensive definition of business groups, particularly family business groups in a similar cross-country setting. Other internal labor market research exploits employee-employer-matched data from a single country. Belenzon and Tsolmon (2016) highlight that the internal labor markets of the business group firms can be a source of competitive advantage. Affiliates benefit from internal labor markets because, unlike stand-alone firms, they can reallocate workers to other group affiliates without incurring employment protection law penalties. Cestone et al. (2018) argue that the internal labor market of group-affiliated firms can reduce the recruiting and training expenses associated with turnover decisions for firm owners. As a side-product, business group firms provide workers with implicit employment insurance through greater job stability within the group. Huneeus et al. (2021) provide micro evidence of labor mobility inside business groups using detailed employee and employer data from Chile.

3 Hypotheses Development

3.1 Cost-Benefit Analysis of ILMs

3.1.1 Benefits of ILMs

Group-specific human capital and internal management training One of the benefits of using ILMs for business groups is group-specific skills and knowledge. Unlike firm-specific skills, knowledge, and abilities that can only be acquired and utilized by working for a specific firm (Becker, 1962; Bidwell and Keller, 2014; Bidwell, 2011),[14] group-specific skills remain

[14]Firm-specific skills give existing employees a comparative advantage over potential candidates outside the firm, while restricting their exit choices by limiting the value of those skills to other employers (Althauser, 1989).

useful for other affiliated firms inside the group. These skills should be transferable across firms within the same group, such as familiarity with group-wide logistics systems and a deep understanding of group-level corporate culture and objectives. These group-specific skills typically are acquired and accumulated through internal management training and group-related work experience. Groups hence are motivated to maximize the synergies derived from their investments in training and mentoring group-specific skills through reallocating executives. In economies with underdeveloped external executive labor markets, business groups may invest more in internal recruitment, training, and fostering "group-specific human capital" among employees (Morck et al., 2005).

Reduced information asymmetry Based on job search and matching models (Jovanovic, 1984, 1979), ILMs allow business groups to access better information about managerial capabilities (Doeringer and Piore, 1971; Williamson et al., 1975; Hermalin and Weisbach, 2017). For instance, a group firm can learn about a candidate's experience and reputation in the affiliated firm, or obtain HR feedback that is not externally available.[15] In addition, the information is of higher quality than that available for external candidates as there are established trust, consistent data sources, and streamlined communication among firms in the same group. In this way, the director of an affiliated firm can assess managerial ability based on the internal signal (information), which facilitates the process of matching executive ability and a position in a business group.

More career opportunities for employees Compared to standalone firms, business groups can provide more career opportunities to employees. Such opportunities include job rotations, lateral moves, and professional advancements within the group. Workers can be reallocated to other group member firms without incurring employment protection law penalties, as a result, ILMs of business group firms can be a source of competitive advantage (Belenzon and Tsolmon, 2016).

[15]Job market theories such as that of Spence (1973); Jovanovic (1979), suggest that the employer can gradually learn the abilities of a worker after he or she is hired. In the labor movement game, there is information asymmetry among the worker, the previous employer (the *Sender*) and the hiring employer (the *Receiver*), whereby the worker and the *Sender* expect to know more about each other than the *Receiver* (Bidwell, 2011; Greenwald, 1986; Waldman, 1984).

Increased job security Through internal mobility, business groups can retain workers by providing job security and career advancement possibilities (Chan, 1996; Williamson et al., 1975; Doeringer and Piore, 1971).[16] Another reason for business groups offering greater job security is their lower likelihood of default and their greater resilience in the face of adverse economic shocks, which can be attributed to the financing advantages provided by their ICMs (Masulis et al., 2023; Faccio and O'Brien, 2021; Cestone et al., 2018). By offering greater job security and career advancement opportunities, the business group can enhance its reputation as a good employer, which increases its attractiveness in the labor market.

Family controls Holding a controlling stake in the firm, families possess strong incentives for influencing and overseeing the company's operations (Demsetz and Lehn, 1985). Typically, they maintain a long-term presence within the firm, reflecting extended investment horizons (Anderson and Reeb, 2003). As a result, family ownership leads to enhanced monitoring and longer term horizons, thus reinforcing incentives for managers to perform diligently and avoid shirking. Groups owned by families offer increased job security. They are motivated to retain existing employees to maintain the family-based corporate culture and socio-emotional wealth such as the fulfillment of family values and preservation of the family legacy (Gómez-Mejía et al., 2007).

3.1.2 Costs of ILMs in Business Groups

Internal training and mentoring costs Despite these benefits, ILMs also come with some costs, including internal training and mentoring costs (Zhang and Rajagopalan, 2004; Bidwell, 2017). For instance, group firms may invest in leadership development initiatives, including executive coaching and management training, to equip their employees with the skills and knowledge required for career advancement within the group. These initiatives require financial resources and time commitments from both the company and its employees, contributing to the overall costs associated with ILMs.

Management entrenchment problems Relying on ILMs may give rise to management entrenchment problems (Shleifer and Vishny, 1989). Executives who have long tenure within

[16]The key features of ILMs, as theorized in Milgrom (1992), involve long-term employment, limited external hiring, and established internal promotion structures such as job ladders (Baron et al., 1986). These features send signals that instill a sense of job security for the workers in ILMs.

the organization may be inclined to pursue their private benefits. Moreover, there could be nepotism, where family members receive preferential treatment, that potentially curtails the career opportunities of professional executives. These biases can have adverse consequences for the firm's long-term performance, as underperforming family executives may continue to occupy their positions or receive undeserved promotions.

Limited talent pool While business groups can partially mitigate recruitment and training expenses through intragroup labor movements, a limited internal talent pool can still present challenges for firms seeking top talent to excel in a competitive industry, regardless of their group-specific skills (Bidwell, 2017). Narrowing the executive selection to firms within the same group reduces the pool from which managerial talent is drawn. Such a situation can potentially detrimentally impact the firm. As indicated by Huitfeldt et al. (2023), ILMs can create bottlenecks and constraints on worker mobility, which, in turn, may result in productivity losses.

Limited access to new knowledge, skills, and relationships Relying on ILMs can also limit a firm's access to crucial new knowledge, skills, and relationships, especially in areas related to government, politics, and supply chain dynamics. This limitation can become particularly challenging for firms that are actively investing in and navigating emerging technologies and markets. Such firms often require external insights, partnerships, and expertise to effectively address the complex and rapidly evolving business landscape, which can significantly impact their strategic initiatives and competitive advantage. To mitigate these costs, firms can leverage ELMs to acquire new knowledge and skills (March, 1991), and to build relationships Dokko and Rosenkopf (2010), through external hiring, which are unavailable in ILMs.

3.1.3 Cost-Benefit Analysis

The significance of these costs remains uncertain and can vary significantly from one firm to another. In cases where the costs associated with ILMs begin to outweigh the benefits, business group firms have the option to go to ELMs for executive talent. It is crucial to emphasize that business groups do not have to rely solely on ILMs; instead, they have the flexibility to do so when it proves advantageous (i.e., when the benefits outweigh the costs). Based on the outline of the benefits and costs of ILMs, family business groups have incentives to use both ILMs and ELMs to acquire and allocate human capital, which yields the following predictions.

H1a. Family business groups actively use ILMs to obtain and reallocate executives.

H1b. Family business groups rely on ELMs to obtain and reallocate executives.

The entrenchment view argues that the dominance of family business groups stems from their motivation to retain control over the group, partially influencing the country's markets and policies. As business groups maintain their economic dominance to expand their operations and absorb a significant share of economic activity, they effectively reduce the available executive job opportunities in the ELMs. Therefore, when a substantial portion of the labor force is already employed within these groups, there are fewer positions left for standalone firms to fill. The enhanced job security and opportunities for career advancement serve as additional incentives that contribute to a higher retention rate of executive talent within the group. Therefore, the entrenchment view predicts that the family business groups obtain more executive human capital from ELMs, especially when they are performing well and have expanding prospects in their businesses.

The institutional void view suggests that internal markets exist when external markets are ineffective in acquiring and allocating resources. The reallocation of executive talent through ILMs thus leads to more frequent executive movements in ILMs and less frequent reliance on ELMs. In contrast, during periods of poor performance when the internal talent pool may not be sufficient to meet a firm's labor demands, business groups may resort to ELMs to acquire the necessary executive talent. This strategy suggests that ILMs and ELMs serve as substitutes for each other, with ILMs being the preferred choice for talent allocation within business groups. However, in challenging times or when internal resources are insufficient, business groups may turn to ELMs to fulfill their executive talent requirements.

H2. Family business groups use ELMs for the acquisition of additional skilled labor, particularly when group firm performance is poor.

3.2 The Role of Pyramidal Structure

The ultimate owner's control over group firms is exerted either through direct ownership (horizontal groups) or through a network of intermediate companies (pyramidal groups). Pyramidal groups are characterized by the control of at least one listed group member (other than the ultimate owner) over another firm. Horizontal groups are those in which the family directly controls all the member firms. The pyramidal structure plays a critical role in utilizing

internal capital within the group to support its capital-intensive subsidiary companies (Masulis et al., 2011). In line with this, Almeida and Wolfenzon (2006)'s model emphasizes the financing advantage of the pyramidal structure for the controlling family, particularly in financing new firms. With higher capital allocation efficiency in pyramidal group firms, it is possible for the human capital allocation efficiency to also be higher.

On the other hand, horizontal groups may have reduced information asymmetry compared to pyramidal groups, as all the firms within a horizontal group are directly linked to the controlling shareholders. The direct linkages between the controlling shareholders and horizontal group firms facilitate a more transparent flow of information, enabling a better understanding of the capabilities and performance of executives within the group. This improved matching process allows for a quicker and more efficient search for better firm-employee matching compared to pyramidal groups and leads to a lower frequency of labor movements within horizontal groups compared to pyramidal groups. Since horizontal groups are better equipped to identify and match employees with suitable positions, there is less need for frequent job changes to find a better match.

H3. The pyramidal group firms have greater internal movements of executives compared to horizontal group firms.

In a pyramidal group, families have direct shareholding and voting rights in the *Apex* firms. These families or individuals at the top of the ownership chain typically hold a significant portion of the shares and can exercise control over the decision-making processes of the group. As a result, families can exert their influence and maintain control over the overall strategic direction and management of the pyramidal group.[17] By leveraging their shareholdings, families or controlling shareholders can also exercise indirect control over the lower-layer firms in the pyramidal chain through their ownership of *Apex* firms. This allows them to extend their influence and control throughout the entire pyramidal group structure, while minimizing potential financial or operational risks for themselves. Given the strategic importance of apex firms for control over the other group affiliates, the controlling family has strong incentives to maintain a stable management structure and to thoroughly scrutinize the qualifications and loyalty of potential executive candidates.

[17]The direct shareholding and voting rights give families the power to make important decisions, such as the appointment or removal of top executives, approval of major investments or acquisitions, setting dividend policies, and shaping the corporate culture and values. These decisions directly impact the overall performance and trajectory of the pyramidal group.

H4. Within a pyramidal family business group, *Apex* firms have a more stable management structure. Thus, they exhibit lower executive inflows and outflows.

Bottom firms are typically smaller, younger, more capital-intensive, and have higher idiosyncratic risk (Masulis et al., 2011). These characteristics mean that if they were standalone firms they would find it difficult to raise external capital. High-growth firms are often characterized by high aggregate flows of job gains and losses (or in Schreyer's (2000) vocabulary, high gross job flows), indicating rapid expansion and substantial increase in both revenue and employment. Such firms may experience a heightened demand for talented executives with exceptional managerial abilities. This demand arises from the need to align the strategic direction of the subsidiary firms with that of the overarching business group and to exert effective control over the subsidiary entities. Consequently, bottom firms exhibiting high growth rates may receive a greater allocation of human capital from the ILMs. This strategic allocation of executive human capital aims to enhance the synchronization of strategies between the bottom firms and the group as a whole, while also reinforcing control mechanisms over the affiliated firms.

H5. Within a pyramidal family business group, high-growth *Bottom* layer firms typically receive greater executive talent from the group.

3.3 Human Capital Allocation Strategies within Business Groups

Theories of job-to-job mobility in labor economics predict the existence of firm "ladders" in relation to size and productivity, suggesting that firms at the top of the ladder (large, fast-growing, or highly productive) have a comparative advantage in poaching workers by offering higher wages (Burdett and Mortensen, 1998; Moscarini and Postel-Vinay, 2013). In contrast, Haltiwanger et al. (2018) presents empirical evidence based on U.S. employer-employee matching data, indicating that young firms tend to recruit workers from older firms, and smaller firms tend to poach employees from larger firms. In this study, we investigate whether business groups leverage their internal labor markets to provide support and development opportunities to their weaker affiliates. Specifically, we examine the relationship between executive movements within internal labor markets and the relative performance and financial strength of the receiver and sender firms.

The business group literature commonly emphasizes the allocation of resources and various

forms of support provided by groups to their affiliates.[18] Given the ability to allocate financial capital among group affiliates, it follows that groups may also allocate human capital in a similar manner. Specifically, groups might assign more executives to weaker affiliates to offer support and assistance.

Business groups have incentives to deploy executives to weaker affiliates to improve their performance. By assigning additional executives to these affiliates, the group can identify the challenges and issues that weaker affiliates face and implement targeted strategies to address them, thereby enhancing the performance and profitability of the receiver firms. Additionally, sending experienced executives with group-specific skills from stronger affiliates to weaker ones facilitates knowledge spillover and enables weaker affiliates to improve their performance. Moreover, weaker affiliates within a business group may pose risks to the overall reputation and stability of the group. Sending internal executives allows the group to closely monitor and control the operations of these affiliates, mitigating adverse impacts on the reputation of the entire group as well as ensuring that weaker affiliates adhere to the group's strategies. Internal executives in other group affiliates might be willing to join such weaker affiliates given the potential career benefits they might receive, as suggested by Dou and Zhang (2022).

Another reason for the deployment of experienced executives to weaker affiliates is that the latter firms may be relatively less attractive in the labor market, compared to stronger firms that are actively recruiting (Cahuc et al., 2006). A group firm in need of new hires is in competition with other firms in the labor market. It may be more difficult and costly for the weaker group affiliates to find appropriate executives from ELMs. With the flexibility to move executive talent across listed firms within the group, group firms face less competition from firms within the same group than from other firms, which allows them to attract executives more effectively.

In addition to the aforementioned benefits of reallocating human capital within the business group, there are associated costs to consider. One such cost involves opportunity costs, wherein strong managers assigned to weaker affiliates may be diverted from potentially more profitable endeavors elsewhere within the business group. Moreover, compensating wage differentials may be necessary to offer financial incentives to executives to accept roles in less desirable affiliates. From the group's perspective, the benefits outweigh the costs when it achieves long-term growth

[18] A substantial body of evidence indicates that business groups strategically utilize internal capital to finance projects that would otherwise face challenges in obtaining external funding (e.g. Belenzon et al., 2013; Masulis et al., 2020).

or market dominance at the receiver firm, or when it enhances the overall performance of the group, thereby mitigating potential losses for the sender firm in terms of growth.

H6. Within a group, executives tend to move to weaker member firms.

H7. Within a group, the movement of executives through the group's ILM aligns with the flow of capital through the group's ICM.

4 Data and Summary Statistics

4.1 Sample Construction

We rely on Orbis DMC and Ownership databases to construct the employer-employee dataset for listed firms worldwide. Our sample construction starts with all employment information on key individuals holding important roles in both public and private firms from the DMC database for the years 2002 through 2017. Using comprehensive ownership information on business group links between a subsidiary and its parent at a given point in time from the Ownership database, we then determine the listed parent of the employer in cases where the employer is a private subsidiary. To construct the firm-year panel dataset of executive movements, we track position changes of executives across the listed firms. This approach allows us to track labor movements across private subsidiaries of different listed parents, which is crucial for understanding the labor markets of business groups. In fact, more than 90% of the total intragroup movement activities of executive employees occur across subsidiaries of listed firms, highlighting the importance of this inclusion in our analysis.

In this study, we focus on executives in the DMC database and exclude outside directors, as their roles and responsibilities, and labor markets and behaviors may differ greatly. Outside directors are typically appointed to provide independent oversight and strategic guidance to the company's management, while executives are responsible for executing a company's strategies, supervising its operations and achieving its goals.[19] Therefore, the labor market for outside directors is likely to be substantially different from that of executives, and their movement patterns may not be representative of the company's overall internal labor market dynamics. We describe the detailed procedures to construct the employer-employee dataset and the classification of the executive sample in Appendix A.2.1.

[19]These executives in our sample consist of C-suite executives, senior managers at the listed firms, and top executives at their private subsidiaries.

We then merged the employer-employee data with the business group affiliation dataset, limiting our analysis to the 45 countries where group affiliation information is available. The business group data for these 45 countries as of 2007 are compiled by Masulis et al. (2011, 2020, 2023) and includes comprehensive firm ownership information from various sources. We first link by BvD ID number (Bureau van Dijk identifier), then DS Code (Datastream identifier), and Sedol (Stock Exchange Daily Official List) number. Our employment data includes 67,292 listed firms, of which we were able to identify 7,762 listed business group firms. To ensure consistency between the two datasets, we dropped firms listed after 2007 from the employment data.

We filter the employment data to include only individuals with known appointment dates and whose direct or indirect listed firm employer can be merged with financial information from Datastream and Worldscope. We exclude financial firms (firms with Standard Industry Classification (SIC) codes 6000-6999) and firms with nonpositive assets from our analysis. To ensure clear management structures and labor market behaviors for the sample firm, we only include firm-year observations with employment information for at least 5 individuals in the Orbis dataset. Additionally, we exclude 1,982 non-family group firms from the baseline analysis because their long-term strategic incentives and behavior are likely to differ from those of family business group firms. Our final dataset for the baseline analysis consists of 145,834 firm-year observations for 3,330 family group firms and 25,364 standalone firms.

4.2 Variable Constructions

Using the employer-employee-matched dataset, we construct movement variables to capture the dynamics of executive human capital flows across listed firms.[20] We identify job-to-job movements by tracking the earliest executive appointments and subsequent transitions, assigning *Movement* indicator variables to both the receiver and sender firms. These movements are aggregated and scaled by the existing executive headcount[21] to derive yearly *Inflow* and *Outflow* variables for each firm. The *Inflow* (*Outflow*) variable measures the gains(losses) of

[20]We focus on the cross-listed firm movements to disentangle the well-studied ILMs within a listed firm (e.g., Giroud and Mueller, 2015; Tate and Yang, 2015, 2016) and ILMs within a business group (but across listed firms).

[21]The denominator is calculated as the total executive headcount at the beginning of each year, adjusted for new appointments and resignations.

executive talent joining (leaving) the focal firm.[22] Net gains in executive talent, termed *Net Inflow*, are also calculated. Additionally, we classify these movements as *Internal* or *External* based on whether firm R and firm S belong to the same business group. We describe the detailed procedure to construct each variable in Appendix A.2.3.

4.3 Descriptive Statistics

Table 1 presents the country-level distribution of family group firms, non-family group firms, and standalone firms included in our sample. Countries are divided into developed and emerging economies based on the MSCI index classification system of market development status. The classification is valid as there are clear and persistent distinctions between MSCI's "developed markets" and other markets, with only a few cases of reclassifications occurring in the past three decades. As can be seen, family business groups account for 31% of sample firms in emerging markets and 12% in developed markets, with Colombia, Chile, Turkey, Philippines, Thailand, Israel, and South Korea being heavily represented in this category. Non-family group firms are typically owned by governments, mutual funds/banks, and other public firms. On average they account for 6% in emerging markets and a higher proportion (10%) in developed markets. Japanese and Czechia firms exhibit the highest percentages. Standalone firms refer to firms that are unaffiliated with any business groups. Table A.1 displays the sample frequency distribution by year. Group firms, on average, have more executives than standalone firms. On average, family group firms have 41 executives, and standalone firms have 25 executives.

Our baseline test sample consists of family group firms and standalone firms. Table 2 and Table A.2 summarize the descriptive statistics of the executive movement variables and key financial characteristics of firms in the analysis. To minimize the influence of outliers in our international sample, We winsorize all continuous variables at the 1st and 99th percentiles. We report descriptive statistics of movement variables for all firms in the baseline sample and separately for the standalone firms and family group firms in Table 2. For an average firm with 27 executives, 2.3% are new hires from other firms each year. For family group firms, 0.7% are from firms in the same group and 1.5% from firms outside the group. In other words, internal hiring accounts for 30% of the executive talent inflow for family business groups. In terms of executive departures, a standalone firm, on average, sends 2.4% of its executives to other firms

[22]Due to lack of data on accurate resignation dates, the *Outflow* variables only serve as proxies for executive supply.

each year. A family group firm supplies 2.8% of its executives to other firms each year, with 0.6% going to the firms in the same group, and 1.6% to firms outside the group. Table A.2 shows the summary statistics of a firm's characteristics for the subsamples of firms by group affiliation types. On average, standalone firms are smaller in size, younger, and have smaller executive teams than family group firms.

5 Firm-level Analysis

To study the ILMs of family business group firms, we start with firm-level movement analysis comparing the executive movements of family group firms and standalone firms. Family group firms are listed firms affiliated with a business group whose ultimate controller is a family or an individual, whereas standalone firms are defined as listed firms that are not affiliated with any business groups. The analysis suggests that family business groups rely on their ILM for intra-group human capital reallocation.

5.1 External Movements of Family Group Firms and Standalone Firms

To examine how firm executive employee movements relate to group affiliation, we estimate the following baseline regression:

$$Movements_{i,t+1} = \alpha + \beta_1 Group_i + \beta_2 Performance_{i,t} + \beta_4 X_{i,t} + \lambda_{ctry} + \lambda_{ind} + \lambda_t + \epsilon_{i,t+1}, \quad (1)$$

where the main explanatory variables $Group_i$ equal 1 for family business group firms and zero for standalone firms. This shows the activity of intra-group executive labor markets in family business groups. Table 3 reports the regression results.

In Columns (1) and (2), we estimate OLS models in which the dependent variables are firm executive labor inflow, measured by the number of executives hired in a given year and scaled by the number of existing executives at the beginning of the year. Time-varying country-specific factors and industry cycles influence employment and labor movements. Hence, we use country, year, and industry fixed effects to control for time invariant unobservable differences, and all the standard errors are robust and clustered by firm.

The OLS results suggest family group firms hire more executives than standalone firms, mainly from their ILMs. Table 3 shows a significant difference in executive movements between the two groups. The family group indicator is positively and significantly related to more total hires, while negatively associated with more hires from firms unaffiliated with their group. The magnitude of the coefficient is non-negligible: compared with standalone firms, family group firms' external hires are smaller than standalone firms' hires from other firms. For an average firm with 2.3% new hires from other firms each year, family group firms have 0.3% fewer hires from external labor markets, yet they still have 0.3% more new appointments than standalone firms. Together, the coefficients of $Inflow$ variables imply that the inflows of executives in family group firms are mainly from other firms in the same group.

In Column (3), we estimate the same models with the firm's executive labor outflows as the dependent variable. We compare the movements of executives supplied to the ELM by family business groups and standalone firms. A natural finding is that family group firms supply fewer executives to unaffiliated firms than do standalone firms. This shows that the family groups are providing executives through their ILMs.

To understand whether the active ILM leads to different net inflows of executives in family business group firms compared to standalone firms, we estimate regressions of net executive inflow mobility on the family group indicator, firm stock performance, and other firm-level controls. The results are shown in Column (4). $Net\ Inflow$ captures the net inflows of executives. Family group firms do not have significantly more frequent inflows in executive human capital from ELM than do standalone firms.

Possibly due to their more stable stage in the firm's life cycle, larger and older firms may have distinctly different patterns in their executive labor mobility. Larger firms, with their greater assets, have a higher demand for executives and other management employees and may, therefore, draw from both internal and external labor markets. They may also have a larger pool of executives and potential managerial candidates, which could make them more active in supplying executives to ELMs.

The results of the regression analysis indicate that larger firms have both greater total hires and external hires, and the rate at which executives leave larger firms for other firms is also higher than executives leaving smaller firms. Although larger firms have an overall more active external mobility, the net inflow of executive labor from external markets does not necessarily differ from that of smaller firms. It could be that larger firms have a more stable management structure, where executive movements are primarily replacements rather than new expansion

hires. Older firms may have a more established management structure and less aggressive business expansions. Executive experience in such firms is also valuable in labor markets. From the regression results, we find that older firms have both lower total hires and external hires and supply more to external executive labor markets.

For robustness, we show in Appendix Table A.6 that our baseline results remain consistent even when excluding Japanese family group firms, which constitute 7% of the sample and are characterized by a culture of lifetime employment and frequent intra-group job rotation systems. We also separately test the subsamples of firms in developed and emerging markets based on the MSCI All World Index following Masulis et al. (2023). The economic and statistical significance is similar in developed and emerging markets. In emerging markets where external financing is more costly, family groups have comparative advantages through their ICMs (Hoshi et al., 1991; Boutin et al., 2013; Almeida et al., 2015; Gopalan et al., 2014). Faccio and O'Brien (2021) find that the stability of the ILMs in family groups in the face of shocks is not just a byproduct of intra-group capital reallocation. Consistent with this argument, the regression results in Table A.7 suggest family business group firms utilize ILM in both developed capital markets and emerging capital markets regardless of their comparative capital market advantages in emerging markets.

5.2 Movements of Family Group Firms and Matched Standalone Firms

Consistent with prior literature (Huneeus et al., 2021; Faccio and O'Brien, 2021; Cestone et al., 2018; Belenzon and Tsolmon, 2016), this indirect evidence suggests that group ILMs are very active and well functioning. Group firms use ILMs to hire and redeploy their executives. If family group firms and standalone firms have similar demands for executives after controlling for firm characteristics, the less active ELM movements in family group firms imply that they are substituted by active and well functioning ILMs. Cestone et al. (2018) and Belenzon and Tsolmon (2016) highlight the role of ILMs in reducing hiring and firing costs due to labor market frictions. However, questions about the differences between ILM and ELM activities of group firms remain unanswered.

One difficulty in the analysis is the absence of comparable "internal movements" for standalone firms. As a result, it is only possible to show that the partial (external) mobility of executives in family group firms is less than the total mobility in standalone firms. In addition,

family-controlled groups, such as those in South Korea and Italy, typically operate in related industries, which can result in dominant market power in those industries (Yiu et al., 2007; Bianchi et al., 2002). This, in turn, may lead to greater executive mobility across group firms, as the industry-specific skills are transferable across related sectors. Moreover, there are inherent differences in the characteristics of group firms and standalone firms. For example, consistent with prior literature (Almeida et al., 2015; Masulis et al., 2011), Table A.2 shows that group firms are larger than standalone firms. This could also in part explain the ability of a group firm to attract more executives from ELMs.

We attempt to tackle these empirical challenges and explore the difference between the ILMs and ELMs using matching estimation and a pseudo-group approach. Specifically, we use the nearest neighbor matching method for family group firms to identify matched standalone firms in order to compare their executive movement activity outside the firm (group).

In our analysis, the treated group represents family group firms and the control group represents matched standalone firms. To account for differences between family group firms and standalone firms, we impose exact matching on country, year and industry to identify the firm with the closest matching covariates to the family group firm. For each group firm-year observation, the matched observation is a standalone firm incorporated in the group firm's country and having the same one-digit SIC code for the same year. In matching covariates, we use firm characteristics that could be related to executive movement activities, namely, firm size, firm age, stock returns, Tobin's q, capex, tangibility, liquidity, and financial leverage.[23] This matching approach allows us to compare group firms to standalone firms with similar demands for executives and similar labor market competitiveness.

Table 4 reports the average treatment effect on the treated (ATT) statistics estimated from a comparison between executive movements of group firms and their matched standalone firms. The results are consistent with the regressions on the unmatched sample. The ATT statistics indicate that executive inflows in family group firms are 0.4% greater than those of their matched control firms, while the external inflows are 0.2% less. The family group firms and the matched standalone firms are similar in many ways, but the family group firms have more frequent inflows of executives each year. These additional inflows should mainly come from the ILMs of family business groups since their ELM inflows are less frequent than those

[23]We perform a diagnostic check on the matching criteria between group and standalone firms in the appendix. In Table A.4, we use a simpler set of criteria for matching (i.e. same country and industry with nearest firm size).

of standalone firms.

Family group firms also supply fewer executives and other management employees to ELMs, compared to matched standalone firms. Individuals who leave a standalone firm can only go to the ELM, as there are no affiliated firms. The fact that a similar family group firm supplies fewer executives to the ELM suggests that a measurable fraction of executives leave to join another firm in the same group. The net inflows of executives in family group firms are not significantly different from those in matched standalone firms, and the total mobility of executives is less for the family group firms. This implies that family group firms rely heavily on their ILM to reallocate their executive talent.

5.3 Movement-to-Performance Sensitivity

Our earlier analysis of matched and unmatched samples shows that family groups do rely on their ILMs to reallocate executives. To more fully answer the question about the role of ILMs in family business groups, it is important to understand whether these family groups acquire and supply human capital, both internally and externally, in ways that differ from standalone firms, especially when changes in firm performance occur. In this section, we test whether family group affiliation affects the relationship between executive movements and firm performance measures.

5.3.1 Family Group Firms and Standalone Firms

To test for differential movement-to-performance sensitivity across family group firms and standalone firms, we estimate the following model of executive movements:

$$Movements_{i,t+1} = \alpha + \beta_1 Group_i + \beta_2 Performance_{i,t} + \beta_3 Group_i \times Performance_{i,t} + \beta_4 X_{i,t} + \lambda_{ctry} + \lambda_{ind} + \lambda_t + \epsilon_{i,t+1}, \quad (2)$$

where firm performance is measured by the average monthly industry-adjusted stock return scaled by its standard deviation. The dependent variables are movement measures of executives in family group firms and standalone firms as reported in Table 3. We control for the same set of firm characteristics that could affect a firm's executive movements as in Table 3. To control for unobserved heterogeneity that may be correlated with group affiliation, we include country-year and industry-year fixed effects in Panel A of 5 and firm and year fixed effects in

Panel B.

The results in Table 5 show that executive movements in a firm are negatively associated with firm performance as measured by normalized industry median adjusted stock returns. In the US, the literature finds that firm market-adjusted performance is negatively related to the probability of executive turnover (e.g., Murphy, 1999; Weisbach, 1988; Coughlan and Schmidt, 1985). Parrino (1997) and Huson et al. (2001) show that companies with poor industry-adjusted performance are more likely to replace their CEOs with executives from another firm. Kang and Shivdasani (1995) shows that poor firm performance significantly increases the likelihood of nonroutine top executive turnover in Japan. Consistent with prior empirical evidence, Table 5 shows that when a listed firm performs better, the inflows and losses of executives are lower, especially with respect to the ELM. Overall external executive labor mobility also declines as firm performance improves. In other words, firms with better market-based performance exhibit relatively more management stability.

Columns (1) and (2) of both panels in Table 5 present the regression results for the above Equation 2. The interaction terms between group affiliation and firm performance measures are significantly negative for inflows of executives. This suggests that the negative association between firm stock performance and executive labor inflows is stronger for family groups. Family groups do not ignore ELMs, even though they rely greatly on ILMs. In fact, their ELM movements are highly sensitive to negative performance. When stock return decreases, both the total inflows and the external inflows of executives in family group firms increase more than in standalone firms. When stock returns decline, family group firms have both larger increases in total and external executive labor inflows than do standalone firms.

For an average family group firm, its net addition of executives is significantly lower if the firm has better performance. The lower net inflows are primarily due to less recruitment of new executives especially from ELM. As in Columns (1) and (2), (external) new hiring is less frequent in family group firms when firm performance improves. From Column (3), we see that family group firms do not have significantly fewer executives departing from listed group firms and joining firms unaffiliated with the same group.

5.3.2 Actual and Pseudo-group Firms

To further investigate executive movements through group ILMs, we construct a "pseudo-group" for each actual family business group in our sample. Our method of pseudo-group

construction is similar to the methods employed by Almeida et al. (2015); Cohen and Lou (2012); Jordan et al. (2018), which allows us to use the pseudo-groups of firms as a benchmark against which to evaluate executive movements across firm types. Specifically, the pseudo-groups consist of standalone firms matched to each affiliated firm of the actual group based on the aforementioned matching procedure. We seek to construct a portfolio of standalone firms that mimic the actual business group. Hence, a pseudo-group has the same country, and industry composition as the actual group, and the actual and pseudo-group firms are similar in size, firm age, leverage, growth opportunities, investment opportunities, etc. The underlying assumption here is that the pseudo-groups have the same organizational structure as the actual groups. We allow the composite of the standalone firms forming a pseudo-group to vary year by year. Not to do so would have limited our sample as it is difficult to find matched standalone firms that are similar to the family group firms in all firm characteristics across the entire sample period.

We repeat our analysis of the movement-performance sensitivity on both the matched sample of pseudo-group firms and actual group firms in Table 6. Panel A includes country, industry, and year fixed effects and Panel B includes firm and year fixed effects. Actual Group is an indicator variable that equals 1 if the firm is affiliated with an actual family business group, and zero if it is a standalone firm, but belongs to a pseudo-group. The internal and external movements for the actual family group firms are defined in the earlier tests. We re-categorize the movements for standalone firms assuming that the pseudo-groups operate in the same way as the actual groups. An internal movement is identified when an executive moves from a pseudo-group firm to another firm affiliated with the same pseudo-group. External movements are between pseudo-group firms and other firms unaffiliated with the same group.

In the absence of resource reallocation by the group, we should not observe the same intra-group activities between the pseudo-group firms. In particular, we should not observe the same frequency of movements of executives between listed firms affiliated with the same pseudo-business group as we observe for the matching actual business group. Columns (1) and (2) in Panel A are consistent with estimates from the earlier unmatched sample showing that family group firms have more total inflows, but less external inflow in executives than standalone firms. Column (3) shows that the additional total inflows are from internal markets: actual family group firms have 0.7% more internal movements than pseudo-group firms after controlling country, industry, and year fixed effects. The Actual Group indicator in Column (5) shows that actual family groups also supply more executives to the ILM. Compared to the proportion of

managers who move internally across pseudo-group firms, a larger proportion of managers move from actual group firms to join another firm controlled by the same ultimate owner. Unlike its supply to ILMs, group firms supply less to the ELM as shown in Column (4). From Columns (6) and (7), we see that actual family groups do not have net inflows of more executives, either internally or externally, than pseudo-group firms. Combining the results, Table 6 suggests that the actual group firms use their ILM to hire and to supply executives to other group affiliates; hence the ILMs substitute for the ELMs in meeting the executive labor demands of actual business groups.

Compared to pseudo-group firms, the internal and external inflows of actual group firms are negatively sensitive to their stock performance. The interaction terms between Actual Group and *Stock Return* are negative for both internal and external inflows of executives. On average, actual group firms hire about 0.9% more than pseudo-group firms if the firm performs poorly. The percentage drops to 0.6% if the comparison is only between external inflows of executives at actual business group and pseudo-group firms. The negative and significant coefficients of the interaction terms in Columns (2) and (3) suggest that when firms perform poorly, actual group firms can obtain more executives both internally and externally than can standalone firms. The difference in the magnitude of the coefficients for external and internal hiring (-0.006 vs -0.002) suggests that external hiring is more sensitive to poor performance than internal hiring. In other words, when a firm in the business group performs poorly, it is more likely to look for talent externally, with the magnitude of external inflows being almost three times that of internal inflows.

The relationship between executive departures and firm performance does not seem significantly different across actual and pseudo-groups. In both matched and unmatched tests in Table 5 and Table 6, executive supply measures are not significantly associated with the interaction of (actual) group affiliation and firm performance. When a firm performs well, the family group firm does not send fewer people to the external and internal labor markets than a standalone firm, despite its resemblance to the actual group firm.

Overall, the findings support our hypothesis that family group firms have higher executive inflows than standalone firms when the firm performs poorly. The ILMs provide benefits that are unavailable to standalone firms. The existence of ILMs can enhance the reputation of family group firms as an employer. It provides for greater job security through more job opportunities and even more promotion opportunities within the group. This makes group firms relatively more attractive to managers and gives the group firms more bargaining power in the executive

recruitment and separation processes.

5.4 Pyramid Family Groups and Horizontal Family Groups

In the previous portion of our analysis, we examine the difference in executive movements in family business group firms and standalone pseudo-group firms. This enhances our understanding of the group's activities in internal labor markets. Specifically, this section examines pyramidal and horizontal group structures, aiming to shed light on the variations in executive movements across these two types of business group structures. Our findings demonstrate that the pyramidal structure better facilitates the movements of executives and other management employees within business groups.

5.4.1 Internal Movements in Pyramidal and Horizontal Groups

Pyramidal structure refers to a hierarchical structure in which group-affiliated firms are organized in a pyramid-like form. Each layer of the pyramid represents different positions within the ownership and management structure of the group. To differentiate between pyramidal and horizontal group firms within the family group sample, we categorize them based on whether the controlling shareholder directly holds all the ownership stakes of all the member firms. *Pyramid* is equal to 1 if at least one of the group member firms is indirectly controlled by the ultimate controlling family through another group affiliate. *Apex* firms are firms at the top of the pyramid, and *Middle* and *Bottom* firms are those in the middle and at the very base of the ownership chain respectively.

Table 7 reports the comparison of executive movements (inflows and outflows) of pyramidal group firms and horizontal group firms. We find a strong positive relationship between having a pyramidal structure and both internal executive inflows and outflows, suggesting that the pyramidal structure seems to better facilitate the internal movements of executives within family business groups. The coefficients of the *Pyramid* indicator in Columns (3) and (5) show that pyramidal family group firms rely more on ILMs than do horizontal group firms: the coefficients of executive internal inflows and internal outflows are significantly positive, which suggests that pyramidal firms hire more and supply more internally. The pyramidal structure increases the number of executives hired from the group's ILM by 0.6% (0.3%); this is not only statistically significant, but it is also economically meaningful, given the mean internal executive inflow (outflow) at family business group firms is 0.7% (0.6%).

5.4.2 Movement-Performance Sensitivity in Pyramidal and Horizontal Groups

We next examine the associations of a pyramidal or horizontal group firm's executive movements with its performance in Table 7. The key explanatory variables are the interactions of firm performance with the group firm pyramidal indicator. This interaction term captures the incremental differences in movement-performance sensitivity in pyramidal-structured relative to that in horizontal-structured group firms.

The estimated marginal effects of firm performance on internal executive inflows are presented in Column (3) of Table 7. Notably, the interaction term between the pyramid indicator variable and firm performance exhibits a negative and statistically significant association at the 5% level with internal executive inflows. This finding suggests that when performance improves, pyramid firms tend to hire fewer internal executives and other management employees compared to horizontal firms. Therefore, the results indicate a significantly higher level of sensitivity between executive movement and firm performance in pyramidal groups.

To explore whether the pyramidal structure yields ILM benefits, we repeat the executive movement-performance analysis regressions for the family group firms and (an unmatched and matched) standalone firm sample excluding purely horizontal group firms, as shown in the appendix. Table A.9 and Table A.10 report the regression results. Consistent with the results in Table 5 and 6, the coefficients of the interaction of stock returns and pyramidal group affiliation are significantly negative, and the economic magnitudes are greater when compared with the sample that includes the horizontal group firms.

5.4.3 Movement Types in Pyramidal and Horizontal Groups

Pyramidal family groups may deploy executives differently than purely horizontal firms because of the greater number of pyramidal layers and the closely affiliated group structure allows the internal executive movements in pyramidal groups to be more frequent and efficient than those in purely horizontal groups. Table A.11 reports the regressions on the internal movements of the family group firms sample and analyzes how pyramidal and horizontal groups redeploy talented managers along their organizational structure. The dependent variables *Vertical* and *Upward* are fractions of vertical and upward movements of executives for firm-year observations. Vertical movements are defined as movements between group firms on the different pyramidal levels. Movements are identified as upward when the receiving firm is closer to the ultimate controlling shareholder in the controlling chain. In other words, the *Pyramid Layer* of the receiving

firm is smaller than the sending firm. The regression results show that internal movements are more likely to be along the controlling chain in pyramidal groups than across firms within the same pyramidal layer. The vertical movements of executives are also mostly upward within the group's pyramidal chains. The upward movements suggest that on average executives move to firms closer to the ultimate controlling family.

5.5 Within Pyramidal Groups

Our previous tests indicate that groups in a pyramidal structure witness more internal executive movements than do horizontal groups. In this section, we look inside the pyramidal business groups and distinguish between three categories of member firms based on their relative position within the group ownership chain. We exclude purely horizontal firms as there is no difference in layers of the member firms and their movements could be different from those in pyramidal structures based on our previous discussion in section 5.4.3.

Specifically, we identify *Apex* firms as those at the top of a pyramidal chain and *Bottom* as those at the pyramid base. Member firms between the top and the bottom in the pyramid chain are *Middle* firms. We use three indicator variables to define their relative position in the pyramidal controlling chain. Table 8 reports the results of regressions of the movement variables on these three categories of pyramidal group firms.

The results show that *Apex* firms have relatively more stable management structures. Compared to firms at lower levels of a pyramidal chain, *Apex* firms gain fewer executives internally. In Column (4), the *Apex* firms also supply fewer executives to firms outside the pyramidal groups than *Middle* firms. This is consistent with our hypothesis that the controlling family has an incentive to ensure the stability of the apex firm's management in order to maintain effective control over the group members. Interestingly, unlike group top-down management practices, pyramidal groups exhibit a lower tendency to deploy *Apex* executives and managers to lower-level firms compared to *Middle* layer firms.

If pyramidal groups are associated with more efficient resource allocation in terms of their use of executive human capital, then the pyramidal firms in need may get more internal resources. Prior empirical evidence shows that typical characteristics of *Bottom* firms in a pyramidal family business group include having higher capital expenditure, being smaller and younger, and having higher direct family ownership stakes than non-bottom firms (Masulis et al., 2011). These characteristics may make them relatively less competitive in attracting managers from

external labor markets. With the financial advantages created by the pyramidal structure, the family groups are found to provide financial support to these young and risky firms. The group's allocation of human capital may also tilt towards these young and risky firms. In particular, when they are expanding, as captured by their average high growth rate, it may be harder for them to gain executives from external labor markets. Thus, we expect the high-growth bottom firms to have higher internal inflows from other group members.

To test this prediction we further segregate firms into two sub-categories, based on whether their asset growth rates are above or below their sample country's median. We then interact pyramidal layer indicators, *Apex* and *Bottom*, with the high growth indicator. From the human capital perspective, we find that high-growth bottom firms have more internal gains in executives from the group than do low-growth bottom firms when a country's median firm's asset growth is used as the cutoff for defining high and low-growth firms.

Taken together, the results depict the executive labor flows inside a pyramidal business group. First, high-growth *Bottom* firms receive more executives from their internal labor market, and that is mainly from *Middle* firms. Second, *Apex* firms are less likely to send executives to their internal labor market than are other group firms. Third, *Apex* firms are also less likely to hire executives internally, compared to *Middle* firms. Thus, *Apex* firms have relatively more stable executive teams which may reflect the fact that they are the closest to the ultimate controlling shareholders.

6 Movement-level Analysis

Our firm-level analysis shows that family business groups rely on ILMs to redeploy executives and managers. Also their ELM activities are sensitive to negative performance. Next, we restrict our analysis to firm pairs to better understand the executive labor flows that occur between two different organizational structures. We want to compare the characteristics of group firms with internal and external inflows and with internal and external outflows of executives. We first examine the sources of executives entering a family group firm from the internal or external labor markets. The analysis highlights the direction of executive labor flows within the business groups. We then compare firm characteristics of executives leaving a standalone firm for two different organizational types of destinations, i.e., a group firm or another standalone firm.

6.1 Executives Entering Family Group Firms

Families have economic and strategic incentives to obtain resource allocation benefits from their business groups. The controlling family can transfer financial resources among its group affiliates through various means, including excessive executive compensations, loan guarantees, and asset sales and purchases (Bertrand et al., 2002). For example, studies of Korean *chaebols* have documented tunneling through within-group takeovers (Bae et al., 2002) and private securities offerings (Baek et al., 2006). It is unclear if a controlling family also benefits from transferring intangible human capital that can increase member firm productivity and profitability.

In Table 9, we analyze the characteristics of each pair of firms that receive executives (firm $R, Receiver$) and firms that supply these executives (firm $S, Sender$). The sample in columns (1) and (2) includes firm pairs where the receiving firm is a family group firm, and columns (3) and (4) restrict the sample to the receiving family group firm defined as a listed parent, instead of its subsidiary. The dependent variable, $Internal$, equals 1 if the sender firm S is in the same group as the receiving firm R. The firm performance variables are industry-adjusted stock returns, $Return_{Ind.Adj}$, and normalized industry-adjusted stock returns (scaled by its standard deviation), $Return_{Norm.}$. We include the same set of firm-level controls as in previous tests and incorporate the differences between the *Receiver* firm and its *Sender* firm ($R - S$). The more significant gap in the characteristics between the firm pairs could provide greater incentives for individual decision-makers to consider changing jobs across firms. We include firm fixed effects to control for the unobservable time-invariant firm characteristics.

The results indicate that whether the observed movements are internal or external is associated with the performances of both firms, and their firm ages, cash holdings, capital investments, and leverage ratios. The results from these regression estimates indicate that when group firms perform well, they are more likely to obtain executives from their group affiliates than from firms outside the business group. The coefficients of *Receiver* firm performance are positively significant across all subsamples and specifications. In particular, when the group *Receiver* firm's stock performance improves from the 25th to 50th percentile, the likelihood of the observed executive movement is internal increases by 1.3%.

What stands out in this table is that if the *Sender* firm outperforms the *Receiver* firm (negative *Return* $R - S$), then the movement is more likely to be internal. The likelihood of internal movement increases with the performance of the group *Receiver* firm and the relative

performance of the *Sender* firm. This indicates that, within a family business group, executives and managers move from firms with relatively better performance to firms with weaker performance. The group may assign executives in stronger affiliates to weaker affiliates to pass on their executive experience on improving short-term performance so as to achieve the group's long-term growth objective.

Within a group, executives flow towards younger affiliates. If the *Receiver* is older than the *Sender*, then the movement will likely be from a *Sender* outside the group. It requires time for executives in younger affiliates to acquire group-specific skills that improve work efficiency because these are usually accumulated gradually through working within the group. By reallocating executives with group-specific skills and group experience to these younger affiliates, the group can facilitate the growth of these younger affiliates.

The likelihood of internal movements is also higher when the *Sender* firm has greater cash holdings than the group *Receiver* firm. Holding cash and cash-like liquid assets facilitates the firm's ability to pay greater executive compensation, making them relatively more competitive in the executive labor markets. Thus, the cash-richer affiliates can support the weaker affiliates by transferring some of their existing executives.

The difference in capital expenditure scaled by total assets between the *Receiver* and *Sender* is significantly negative in the regressions. The movements are more likely to be within the group when the *Sender* firm has more investments than the *Receiver* firm. This suggests that business groups strategically allocate executives and managers with more investment experience to nurture member firms with lower asset investment levels and, hence, would otherwise face lower growth potential in the future.

The internal executive labor flows of family groups are from affiliates with less tangible assets to those with more tangible assets. The positively significant coefficients of $Tangibility\ R-S$ suggest that the probability of internal movements is higher when the *Receiver* firm has greater asset tangibility than the *Sender* firm. Higher asset tangibility increases group firms' capacity for external financing. In a family group, the executive labor flows are towards affiliates with better borrowing capacity reflected in their greater tangible assets.

Columns (3) and (4) restrict the sample to firm pairs where the receiving firm is a parent group firm. Executives and managers working in the listed parent firm are strategically more important for a group. Their movements represent the transfer of the human capital that is crucial for a firm's growth and profitable operation. We find that the effects are stronger when the coefficients are larger compared to columns (1) and (2).

The controlling family has incentives to capture the benefits of capital transfers, resource reallocation, and strategic deployment from the operations of business groups. Business groups not controlled by individuals or families are more loosely affiliated and, hence, lack such incentives. If this is the case, then non-family group firms are unlikely to pay attention to weaker affiliates or to support them through human capital transfers. We test this prediction by examining whether non-family group firms also have the same pattern of executive labor movements as we observe in family groups in Table A.12. We do not find the allocation of human capital in non-family business groups: the performance of *Receiver* is not significantly related to whether the executive labor inflows to the non-family group firm is internal or external. Instead, size differences primarily explain the direction of internal labor movements within non-family groups. For non-family groups, the internal movements are from larger firms having deeper pools of executives to smaller firms within the group.

Overall, family business groups seem to utilize their ILMs to support weaker group members. Within the group, executives move from better-performing to more poorly-performing group member firms and from older to younger group member firms. Thus, family groups appear to strategically reallocate their executive human capital resources to nurture member firms with lower growth experience.

6.2 Executives Leaving Standalone Firms

Earlier evidence suggests that groups use ILMs to nurture weaker group affiliates. A natural question related to the labor flows of groups is how groups utilize ELMs compared to ILMs. To evaluate the group's ability to attract human capital from competitive ELMs, we compare the characteristics of all firm pairs with standalone *Sender* firms and examine whether the destinations of observed movements from these standalone firms are a group firm or another standalone firm.

Columns (5) and (6) in Table 9 present results from regressions of executive movements of firm pairs from standalone *Sender* firms to standalone or group *Receiver* firms. The dependent variable is *To Group* equals 1 if the *Receiver* is affiliated with a family business group, and zero if the *Receiver* is another standalone firm. The positive and significant coefficients of *Return* $R-S$ suggest that the performance of the *Receiver* relative to the standalone *Sender* matters: when the relative performance of the *Receiver* is strong, executives are more likely to move to a group firm. Hence, the group firms with better stock performance attract executive

talent from standalone firms. Movements into non-family business groups in Table A.12 are not related to the relative performance of the *Receiver*. This suggests that family business groups are able to attract executive talent from standalone firms when they perform well.

Several firm characteristics particularly matter for the direction of executive labor flows between standalone firms and business groups. Larger and older group firms generally have better reputations and higher survival probabilities, hence if the *Receiver* is larger and older than the standalone *Sender*, executive talent is more likely to flow into the group firm. The positive significance of the relative capital expenditure of *Receiver* indicates that group firms with more capital investments are also more attractive to executive talent leaving standalone firms. The available executives and managers are more likely to join group firms when the *Receiver* firm has higher growth potential, measured by CAPEX levels, than the standalone firm.

Taken together, these findings highlight the role of these firm attributes in a group's ability to obtain talented labor from the external labor markets. Stronger group firms attract human capital, particularly executive talent. Executives leaving standalone firms join larger and older group firms and those with stronger market performance and investment activity.

6.3 Potential Movement Analysis: Who Actually Sends Executives to Group Firms?

The movement-level analysis of firm pairs shows the variation in firm performance and other firm-level characteristics of the receiver firms and the sender firms. We next compare firm characteristics of all potential sender firms of the observed executive hires at a group firm, in an attempt to predict which external firms provide executive employees to business groups. Importantly, we restrict the sample to parent-level executives who hold main functions at listed group firms rather than their private subsidiaries, in order to focus on the top executives who are particularly crucial for a firm's human capital.

We then analyze all potential companies (*Senders*) from which a group firm can hire. Table 10 reports estimates for the following regression model

$$Sender_{pi,t} = \alpha + \beta_1 ILM_{pi,t} + \beta_2 Performance_{i,t} + \beta_3 ILM_{pi,t} \times Performance_{i,t} + \beta_4 X_{i,t} + \lambda_{pi} + \lambda_t + \epsilon_{i,t}, \quad (3)$$

where p denotes a new executive announcement made by a listed family group firm and i denotes all other potential firms located in the same country as the family group firm in the same year. The dependent variable $Sender_{pi}$ takes a value of 1 if the new executive comes from firm i, and zero for all the other firms. ILM_{pi} is an indicator variable for whether the sender firm i is in the same group as the focal firm where position p is created. $Performance_{it}$ is the performance of the sending firm i at time t, measured by industry-adjusted average monthly stock returns scaled by their standard deviation. Columns (1), (3), and (5) include year fixed effects and receiver-sender industry pair fixed effects, and Columns (2), (4), and (6) include receiver-year fixed effects.

The significantly positive ILM_{pi} in the first two columns indicates that the executive movement is more likely to occur if the potential *Sender* is from the ILM of the group firm where the position p is created. In other words, top executives in group firms are more likely to come from other member firms in the same group than from standalone firms. One implication of this higher likelihood is that there are higher promotion probabilities in groups and, hence, executives and managers have an incentive to join groups, all other things being equal.

Our variable of interest, $ILM_{pi} \times Performance_{it}$, is positive and statistically significant in both regression specifications. By comparing all potential senders, the positive interaction term implies that a group firm tries to grab internal top executives when they are from very strongly performing group member firms. This analysis between potential senders can be compared with the results of observed movements in Columns (1) and (2) which show observed talents entering group firms are more likely to be from internal sources if their sending group employer has better stock performance.

Columns (3) and (4) predict the likelihood of movement from all potential internal *Sender* firms to a new executive position at a parent group firm. Among potential internal *Sender* firms, the movements are more likely from group members with stronger performance. This is consistent with a tournament story within the group that executives who achieve higher historical firm performance are more likely to move to the apex of the business group. Results from the same tests on the external *Sender* firms are presented in the last two columns. Stock returns become insignificant for external senders, which suggests the stronger performance of firms in the ELMs does not predict the movement to top positions in the group.

6.4 Direction of Executive Movement Flows Within Business Groups

In our previous analysis, we show that groups deploy more internal executives to underperforming or financially weaker firms within the group. In this section, we investigate whether this allocation of human capital aligns with internal capital flows. Specifically, we want to test whether the firm that provides more capital to other group affiliates also supplies executives to other group firms and whether the firm receiving capital from the group is also the recipient of group executives.

Following Masulis et al. (2023), we use a proxy to measure internal capital market activity based on the change in a group firm's external investment in other group affiliates. This proxy helps to address the challenge posed by the lack of precise data on internal capital movements within every family-controlled business group in the 45 global markets. The measure captures one of the principal uses of internal capital in business groups, which involves reinvesting it in other member firms within the group, either as debt or equity investments. The other two destinations of internal capital are dividend payments and retained earnings within the firm where it is generated. Under the International Accounting Standard 28 (IAS 28), Investments in Associates and Joint Ventures, firms are required to disclose the fair value of their investment holdings (both equity and debt) in affiliated firms (IAF). This disclosure is required when the firm is considered to have a significant influence.[24]

We collect the Investments in Associates and Joint Ventures data from Worldscope and adjust for impairment charges. To estimate the change in a firm's IAF in a given year, we calculate the year-to-year change in the book value of IAF and added the estimated impairment charge applied to the value of the IAF value in the same year. When specific impairment charge data for the IAF were not available, we relied on the impairment charge applied to the firm's investment assets, assuming that these charges are applied at the same rate. After adjusting for impairment charges, we scaled the adjusted change in the firm's IAF by the book value of its total assets to obtain the variable ΔIAF. This measure represents the extent to which the focal group firm may directly or indirectly supply capital to the rest of the business group via internal capital reallocation. For example, a ΔIAF measure of 0.006 for a group firm indicates

[24] A "significant influence" is presumed when a company has greater than 20% ownership in an affiliated firm (or lower when there are other indicators of control, such as board representation), which matches with our definition of control links between firms within a business group. For example, if a group firm controls another firm in a pyramidal chain, the parent firm's reported IAF must include the value of its investment in this subsidiary.

that 0.6% of this firms' assets are invested in their affiliates.

In this analysis of executive movements within internal labor markets, we examine the directional patterns of these movements between firms within the same business group. We look for movements from potential sender firms to receiver firms among all possible firm pairs in each group. Similar to Buchuk et al. (2020), we consider the entire set of potential movements within a group, which comprises all possible pairs that can be formed between listed firms in the business group. We focus on directed relationships, as we are able to identify both the receiver and sender firms involved in each movement. Specifically, we first take each firm from the group as the receiver (focal) firm, and then consider all other firms within the same group as potential sender firms, forming possible internal receiver-sender firm pairs for this focal firm. For each receiver-sender pair within a group, we create a movement indicator variable. This indicator takes a value of 1 when we observe executive movement(s) from the sender firm to the receiver firm in the group over a given year and is zero otherwise. We proceed by estimating the following regressions using this sample of potential pairs within groups:

$$Movement_{SR,t} = \alpha + \beta_1 \Delta IAF_{S,t} + \beta_2 Performance_{S,t} + \beta_3 Performance_{R-S,t} + \beta_4 Relationship_{SR,t} + X_{R,t} + X_{R-S,t} + \lambda_{SR} + \lambda_t + \epsilon_{R,t}, \quad (4)$$

where $Movement_{SR,t}$ is an indicator variable for when there is executive movement(s) from the sender firm S to the receiver firm R in year t. The variable $\Delta IAF_{S,t}$ is the firm-level measure of the change in the investments in affiliated firms of the sender firm S in year t, adjusted for impairment charges and scaled by the book value of its total assets. It captures the capital outflow to other affiliated firms from the sender firm S.

The $Relationship_{SR,t}$ variables are indicator variables that capture the ownership and operational relationships between the receiver firm R and the sender firm S. We collect direct ownership data from Orbis and supplier-customer relationships from Factset Revere. To indicate whether the sender firm S is a first-level (directly owned) subsidiary or shareholder of the receiver firm R, we construct indicator variables $S\ Sub$ and $S\ Shldr$. For supply chain relationships within the group, we create two added indicators $S\ Supp$ and $S\ Cust$ when the sender firm S serves as a major supplier or customer of the receiver firm R.

We control for receiver firm-year fixed effects (f_{Rt}) and sender firm fixed effects (f_S) in our analysis. Additionally, we include year fixed effects (f_t) and firm pair fixed effects (f_{SR}) to capture individual firm-specific characteristics and time-invariant factors between each firm

pair. The standard errors are clustered at the receiver firm level to account for potential correlation within receiver firms.

As shown in columns (1)–(4) of Table 11, an increase in the sender firm's investments in affiliated firms has a positive and statistically significant effect on the likelihood of executive movement from the sender firm to the receiver firm when both firms are part of the same family business groups. Specifically, a one percentage point increase in ΔIAF leads to a 0.07 increase in the likelihood of an internal executive movement, which is higher than the sample mean of 0.06. The results still hold when we control for the relationships between the sender firm and the receiver firm. When examining firm pairs directly linked through ownership chains, we observe a significant increase in the likelihood of internal executive movements. Similarly, direct operational relationships between firms facilitate executive movements within a family group. Specifically, when the sender firm acts as a supplier or customer to the receiver firm, it significantly increases the likelihood of executive movements between the two family group firms. However, these effects are not evident for firm pairs in non-family business groups, as indicated in columns (5)-(8). This highlights the role of controlling families in resource allocation within business groups.

7 Conclusion

Business groups are prevalent worldwide, especially in many emerging markets. They are characterized by a complex organizational system in which multiple companies are linked by ownership and control, forming a larger corporate entity. This system typically involves a pyramidal structure, where apex firms oversee the operations of their lower-level affiliates and subsidiaries, often providing them with financial, managerial, and operational support. The organizational system of business groups may also involve shared resources, such as research and development facilities, manufacturing plants, and distribution networks, among others. Additionally, business groups may engage in diversification strategies, expanding their operations into various industries or geographic regions.

Effective allocation of human capital and executive talent is paramount for maximizing productivity, fostering innovation, adapting to changes, enhancing employee satisfaction, and optimizing costs. It allows firms to leverage their most valuable asset, their people, in pursuit of their strategic objectives and to maintain competitiveness in the market. In business groups,

that typically involves determining the most effective distribution of talent resources across different firms within a group. This process requires careful consideration of the needs and objectives of each subsidiary and the group as a whole. Achieving effective human capital allocation in a complex and diverse business group can be challenging. Business leaders must balance the demands of different affiliates and their subsidiaries, allocate resources to match the group's strategic priorities, and adapt to changes in the business environment.

The allocation of labor is one of the major functions of ILMs (Doeringer and Piore, 1971). Organizations, such as firms, divisions, or business groups, allocate human capital through the assignment of individuals to specific roles based on their skills, and experience to suit organizational needs. Managerial decisions related to recruitment, selection, and placement of employees are involved in this allocation process to ensure the effective utilization of human resources to meet organizational objectives.

Using high-level personnel movement data from 45 different countries, we document a human capital allocation channel through which family business groups provide support to their member firms. By examining the characteristics of firm pairs of movements, we show that family groups reallocate strong executive talent to weaker member firms in order to nurture those firms. Internal movements are more likely to occur from firms that perform better, invest more, and are older compared to underperforming less invested, and younger group member firms. This is one of the business group's advantages over standalone firms and helps to explain its formation and stability.

References

Agarwal, Sumit, Johnny Chan, Rongrong Xie, and Nianhang Xu, 2021, Are executives more socially responsible when raised with siblings? Evidence from Chinese family firms, *SSRN Electronic Journal* .

Aguilera, Ruth V., Ryan Federo, Bartolome Pascual-Fuster, and Rafel Crespi-Cladera, 2023, The Corporate Governance of Business Groups: What We Know and What Lies Ahead, *Annals of Corporate Governance* 7, 152–251.

Almeida, Heitor, Chang-Soo Kim, and Hwanki Brian Kim, 2015, Internal Capital Markets in Business Groups: Evidence from the Asian Financial Crisis, *The Journal of Finance* 70, 2539–2586.

Almeida, Heitor, Sang Yong Park, Marti G. Subrahmanyam, and Daniel Wolfenzon, 2011, The structure and formation of business groups: Evidence from Korean chaebols, *Journal of Financial Economics* 99, 447–475.

Almeida, Heitor, and Daniel Wolfenzon, 2006, Should business groups be dismantled? The equilibrium costs of efficient internal capital markets, *Journal of Financial Economics* 7, 99–144.

Althauser, Robert P., 1989, Internal Labor Markets, *Annual Review of Sociology* 15, 143–161.

Anderson, Ronald C., and David M. Reeb, 2003, Founding-Family Ownership and Firm Performance: Evidence from the S&P 500, *The Journal of Finance* 58, 1301–1328.

Bae, Kee-Hong, Jun-Koo Kang, and Jin-Mo Kim, 2002, Tunneling or Value Added? Evidence from Mergers by Korean Business Groups, *The Journal of Finance* 57, 2695–2740.

Baek, Jae-Seung, Jun-Koo Kang, and Inmoo Lee, 2006, Business Groups and Tunneling: Evidence from Private Securities Offerings by Korean Chaebols, *The Journal of Finance* 61, 2415–2449.

Baek, Jae-Seung, Jun-Koo Kang, and Kyung Suh Park, 2004, Corporate governance and firm value: Evidence from the Korean financial crisis, *Journal of Financial Economics* 71, 265–313.

Baker, George, Michael Gibbs, and Bengt Holmstrom, 1994a, The Internal Economics of the Firm: Evidence from Personnel Data, *The Quarterly Journal of Economics* 109, 881–919.

Baker, George, Michael Gibbs, and Bengt Holmstrom, 1994b, The Wage Policy of a Firm, *The Quarterly Journal of Economics* 109, 921–955.

Baron, James N., Alison Davis-Blake, and William T. Bielby, 1986, The Structure of Opportunity: How Promotion Ladders Vary Within and Among Organizations, *Administrative Science Quarterly* 31, 248–273.

Becker, Gary S., 1962, Investment in Human Capital: A Theoretical Analysis, *Journal of Political Economy* 70, 9–49.

Belderbos, René A, and Mariëlle G Heijltjes, 2005, The determinants of expatriate staffing by Japanese multinationals in Asia: Control, learning and vertical business groups, *Journal of International Business Studies* 36, 341–354.

Belenzon, Sharon, and Tomer Berkovitz, 2010, Innovation in Business Groups, *Management Science* 56, 519–535.

Belenzon, Sharon, Tomer Berkovitz, and Luis A. Rios, 2013, Capital Markets and Firm Organization: How Financial Development Shapes European Corporate Groups, *Management Science* 59, 1326–1343.

Belenzon, Sharon, and Ulya Tsolmon, 2016, Market frictions and the competitive advantage of internal labor markets, *Strategic Management Journal* 37, 1280–1303.

Bertrand, Marianne, Paras Mehta, and Sendhil Mullainathan, 2002, Ferreting Out Tunneling: An Application to Indian Business Groups, *The Quarterly Journal of Economics* 117, 121–148.

Bertrand, Marianne, and Antoinette Schoar, 2003, Managing with Style: The Effect of Managers on Firm Policies, *The Quarterly Journal of Economics* 118, 1169–1208.

Bianchi, Marcello, Magda Bianco, and Luca Enriques, 2002, Pyramidal Groups and the Separation Between Ownership and Control in Italy, in Fabrizio Barca, and Marco Becht, eds., *The Control of Corporate Europe*, 0 (Oxford University Press).

Bidwell, Matthew, 2011, Paying More to Get Less: The Effects of External Hiring versus Internal Mobility, *Administrative Science Quarterly* 56, 369–407.

Bidwell, Matthew, 2017, Managing talent Flows Through Internal and External Labor Markets, in David G. Collings, Kamel Mellahi, and Wayne F. Cascio, eds., *The Oxford Handbook of Talent Management*, 0 (Oxford University Press).

Bidwell, Matthew, and Jr Keller, 2014, Within or Without? How Firms Combine Internal and External Labor Markets to Fill Jobs, *The Academy of Management Journal* 57, 1035–1055.

Bidwell, Matthew, and Ethan Mollick, 2015, Shifts and Ladders: Comparing the Role of Internal and External Mobility in Managerial Careers, *Organization Science* 26, 1629–1645.

Bloom, Nicholas, Benn Eifert, Aprajit Mahajan, David McKenzie, and John Roberts, 2013, Does Management Matter? Evidence from India, *The Quarterly Journal of Economics* 128, 1–51.

Boutin, Xavier, Giacinta Cestone, Chiara Fumagalli, Giovanni Pica, and Nicolas Serrano-Velarde, 2013, The deep-pocket effect of internal capital markets, *Journal of Financial Economics* 109, 122–145.

Buchuk, David, Borja Larrain, Francisco Muñoz, and Francisco Urzúa I., 2014, The internal capital markets of business groups: Evidence from intra-group loans, *Journal of Financial Economics* 112, 190–212.

Buchuk, David, Borja Larrain, Mounu Prem, and Francisco Urzúa Infante, 2020, How Do Internal Capital Markets Work? Evidence from the Great Recession, *Review of Finance* 24, 847–889.

Burdett, Kenneth, and Dale Mortensen, 1998, Wage Differentials, Employer Size, and Unemployment, *International Economic Review* 39, 257–73.

Cahuc, Pierre, Fabien Postel-Vinay, and Jean-Marc Robin, 2006, Wage Bargaining with On-the-Job Search: Theory and Evidence, *Econometrica* 74, 323–364.

Carney, Michael, Marc Van Essen, Saul Estrin, and Daniel Shapiro, 2018, Business Groups Reconsidered: Beyond Paragons and Parasites, *Academy of Management Perspectives* 32, 493–516.

Cestone, Giacinta, Chiara Fumagalli, Francis Kramarz, and Giovanni Pica, 2018, Insurance Between Firms: The Role of Internal Labor Markets, SSRN Scholarly Paper 2537290, Social Science Research Network, Rochester, NY.

Chan, William, 1996, External Recruitment versus Internal Promotion, *Journal of Labor Economics* 14, 555–570.

Chung, Chi-Nien, and Ishtiaq P. Mahmood, 2010, Business Groups in Taiwan, in Asli M. Colpan, Takashi Hikino, and James R. Lincoln, eds., *The Oxford Handbook of Business Groups*, 180–209 (Oxford University Press).

Claessens, Stijn, Simeon Djankov, and Larry H. P Lang, 2000, The separation of ownership and control in East Asian Corporations, *Journal of Financial Economics* 58, 81–112.

Cohen, Lauren, and Dong Lou, 2012, Complicated firms, *Journal of Financial Economics* 104, 383–400.

Coughlan, Anne T., and Ronald M. Schmidt, 1985, Executive compensation, management turnover, and firm performance: An empirical investigation, *Journal of Accounting and Economics* 7, 43–66.

Demsetz, Harold, and Kenneth Lehn, 1985, The Structure of Corporate Ownership: Causes and Consequences, *Journal of Political Economy* 93, 1155–1177.

Doeringer, Peter B., and Michael J. Piore, 1971, *Internal Labor Markets and Manpower Analysis* (Heath, Lexington, Mass.).

Dokko, Gina, and Lori Rosenkopf, 2010, Social Capital for Hire? Mobility of Technical Professionals and Firm Influence in Wireless Standards Committees, *Organization Science* 21, 677–695.

Dou, Ying, and Emma Jincheng Zhang, 2022, Why Do Directors Join Poorly Performing Firms?, *Journal of Financial and Quantitative Analysis* 57, 1564–1590.

Duchin, Ran, and Denis Sosyura, 2013, Divisional Managers and Internal Capital Markets, *The Journal of Finance* 68, 387–429.

Dunlop, John T., 1966, Job Vacancy Measures and Economic Analysis, in *The Measurement and Interpretation of Job Vacancies*, 27–47 (NBER).

Faccio, Mara, and William J. O'Brien, 2021, Business Groups and Employment, *Management Science* 67, 3468–3491.

Fisman, Raymond, and Yongxiang Wang, 2010, Trading Favors within Chinese Business Groups, *American Economic Review* 100, 429–433.

Giroud, Xavier, and Holger M. Mueller, 2015, Capital and Labor Reallocation within Firms, *The Journal of Finance* 70, 1767–1804.

Gómez-Mejía, Luis R., Katalin Takács Haynes, Manuel Núñez-Nickel, Kathyrn J. L. Jacobson, and José Moyano-Fuentes, 2007, Socioemotional Wealth and Business Risks in Family-controlled Firms: Evidence from Spanish Olive Oil Mills, *Administrative Science Quarterly* 52, 106–137.

Gopalan, Radhakrishnan, Vikram Nanda, and Amit Seru, 2007, Affiliated Firms and Financial Support: Evidence from Indian Business Groups, *Journal of Financial Economics* 86, 759–795.

Gopalan, Radhakrishnan, Vikram Nanda, and Amit Seru, 2014, Internal Capital Market and Dividend Policies: Evidence From Business Groups, *The Review of Financial Studies* 27, 1102–1142.

Greenwald, Bruce C., 1986, Adverse Selection in the Labour Market, *The Review of Economic Studies* 53, 325–347.

Haltiwanger, John, Henry Hyatt, and Erika McEntarfer, 2015, Cyclical Reallocation of Workers Across Employers by Firm Size and Firm Wage, Working Paper, U.S. Census Bureau, Center for Economic Studies.

Haltiwanger, John, Henry R. Hyatt, Lisa B. Kahn, and Erika McEntarfer, 2018, Cyclical Job Ladders by Firm Size and Firm Wage, *American Economic Journal: Macroeconomics* 10, 52–85.

Hamdani, Assaf, Konstantin Kosenko, and Yishay Yafeh, 2020, Regulatory Measures to Dismantle Pyramidal Business Groups: Evidence from the United States, Japan, Korea and Israel, ECGI Law Working Paper No. 542/2020, European Corporate Governance Institute.

Hermalin, Benjamin E., and Michael S. Weisbach, 2017, Assessing Managerial Ability: Implications for Corporate Governance, in Benjamin E. Hermalin, and Michael S. Weisbach, eds., *The Handbook of the Economics of Corporate Governance*, volume 1 of *The Handbook of the Economics of Corporate Governance*, 93–176 (North-Holland).

Hoshi, Takeo, Anil Kashyap, and David Scharfstein, 1991, Corporate Structure, Liquidity, and Investment: Evidence from Japanese Industrial Groups, *The Quarterly Journal of Economics* 106, 33–60.

Huitfeldt, Ingrid, Andreas R. Kostøl, Jan Nimczik, and Andrea Weber, 2023, Internal labor markets: A worker flow approach, *Journal of Econometrics* 233, 661–688.

Huneeus, Federico, Borja Larrain, Mauricio Larrain, and Mounu Prem, 2021, The internal labor markets of business groups, *Journal of Corporate Finance* 69, 102017.

Huson, Mark R., Robert Parrino, and Laura T. Starks, 2001, Internal Monitoring Mechanisms and CEO Turnover: A Long-Term Perspective, *The Journal of Finance* 56, 2265–2297.

Islam, Emdad, and Jason Zein, 2020, Inventor CEOs, *Journal of Financial Economics* 135, 505–527.

Johnson, Simon, Rafael La Porta, Florencio Lopez-de-Silanes, and Andrei Shleifer, 2000, Tunneling, *The American Economic Review* 90, 22–27.

Jordan, Bradford D., Mark H. Liu, and Qun Wu, 2018, Organizational Form and Corporate Payout Policy, *Journal of Financial and Quantitative Analysis* 53, 789–813.

Jovanovic, Boyan, 1979, Job Matching and the Theory of Turnover, *Journal of Political Economy* 87, 972–990.

Jovanovic, Boyan, 1984, Matching, Turnover, and Unemployment, *Journal of Political Economy* 92, 108–122.

Kang, Jun-Koo, and Anil Shivdasani, 1995, Firm performance, corporate governance, and top executive turnover in Japan, *Journal of Financial Economics* 38, 29–58.

Khanna, Tarun, and Krishna Palepu, 1999, Policy Shocks, Market Intermediaries, and Corporate Strategy: The Evolution of Business Groups in Chile and India, *Journal of Economics & Management Strategy* 8, 271–310.

Khanna, Tarun, and Krishna G. Palepu, 1997, Why Focused Strategies May Be Wrong for Emerging Markets, *Harvard Business Review* .

Khanna, Tarun, and Jan W. Rivkin, 2001, Estimating the Performance Effects of Business Groups in Emerging Markets, *Strategic Management Journal* 22, 45–74.

Khanna, Tarun, and Yishay Yafeh, 2007, Business Groups in Emerging Markets: Paragons or Parasites?, *Journal of Economic Literature* 45, 331–372.

La Porta, Rafael, Florencio Lopez-De-Silanes, and Andrei Shleifer, 1999, Corporate Ownership Around the World, *The Journal of Finance* 54, 471–517.

La Porta, Rafael, Florencio Lopez-de-Silanes, Andrei Shleifer, and Robert Vishny, 2002, Investor Protection and Corporate Valuation, *The Journal of Finance* 57, 1147–1170.

Larrain, Borja, Giorgo Sertsios, and Francisco Urzúa I, 2019, The Effects of Losing a Business Group Affiliation, *The Review of Financial Studies* 32, 3036–3074.

Lazear, Edward P., and Paul Oyer, 2003, Internal and External Labor Markets: A Personnel Economics Approach, Working Paper 10192, National Bureau of Economic Research.

Leff, Nathaniel H., 1978, Industrial Organization and Entrepreneurship in the Developing Countries: The Economic Groups, *Economic Development and Cultural Change* 26, 661–675.

Lemmon, Michael L., and Karl V. Lins, 2003, Ownership Structure, Corporate Governance, and Firm Value: Evidence from the East Asian Financial Crisis, *The Journal of Finance* 58, 1445–1468.

Malmendier, Ulrike, and Geoffrey Tate, 2008, Who makes acquisitions? CEO overconfidence and the market's reaction, *Journal of Financial Economics* 89, 20–43.

March, James G., 1991, Exploration and Exploitation in Organizational Learning, *Organization Science* 2, 71–87.

Martins, Pedro S., 2021, Internal Labor Market Dimensions and Labor Productivity, in Solomon W. Polachek, Konstantinos Tatsiramos, Giovanni Russo, and Gijs van Houten, eds., *Workplace Productivity and Management Practices*, volume 49 of *Research in Labor Economics*, 107–137 (Emerald Publishing Limited).

Masulis, Ronald W., Peter K. Pham, and Jason Zein, 2011, Family Business Groups around the World: Financing Advantages, Control Motivations, and Organizational Choices, *The Review of Financial Studies* 24, 3556–3600.

Masulis, Ronald W., Peter K. Pham, and Jason Zein, 2020, Family Business Group Expansion Through IPOs: The Role of Internal Capital Markets in Financing Growth While Preserving Control, *Management Science* 66, 5191–5215.

Masulis, Ronald W., Peter K. Pham, Jason Zein, and Alvin E. S. Ang, 2023, Crises as Opportunities for Growth: The Strategic Value of Business Group Affiliation, *Journal of Financial and Quantitative Analysis* 58, 1508–1546.

Milgrom, Paul R., 1992, *Economics, Organization, and Management* (Prentice-Hall, Englewood Cliffs, N.J.).

Morck, Randall, 2010, The Riddle of the Great Pyramids, in Asli M. Colpan, Takashi Hikino, and James R. Lincoln, eds., *The Oxford Handbook of Business Groups*, 602–628 (Oxford University Press).

Morck, Randall, Daniel Wolfenzon, and Bernard Yeung, 2005, Corporate Governance, Economic Entrenchment, and Growth, *Journal of Economic Literature* 43, 655–720.

Moscarini, Giuseppe, and Fabien Postel-Vinay, 2013, Stochastic Search Equilibrium, *The Review of Economic Studies* 80, 1545–1581.

Murphy, Kevin J., 1999, Chapter 38 Executive compensation, in *Handbook of Labor Economics*, volume 3, 2485–2563 (Elsevier).

Odagiri, Hiroyuki, 1994, *Growth through Competition, Competition through Growth: Strategic Management and the Economy in Japan* (Clarendon Press, Oxford).

Osterman, Paul, 1984, Internal Labor Markets, MIT Press Books, The MIT Press.

Parrino, Robert, 1997, CEO turnover and outside succession A cross-sectional analysis, *Journal of Financial Economics* 46, 165–197.

Reich, Michael, David M. Gordon, and Richard C. Edwards, 1973, A Theory of Labor Market Segmentation, *The American Economic Review* 63, 359–365.

Schreyer, Paul, 2000, High-Growth Firms and Employment, OECD Science, Technology and Industry Working Papers 2000/03, Organisation for Economic Co-operation and Development.

Shleifer, Andrei, and Robert W. Vishny, 1989, Management entrenchment: The case of manager-specific investments, *Journal of Financial Economics* 25, 123–139.

Silva, Rui C., 2021, Internal Labor Markets, Wage Convergence, and Investment, *Journal of Financial and Quantitative Analysis* 56, 1192–1227.

Spence, Michael, 1973, Job Market Signaling, *The Quarterly Journal of Economics* 87, 355–374.

Stein, Jeremy C., 1997, Internal Capital Markets and the Competition for Corporate Resources, *The Journal of Finance* 52, 111–133.

Stein, Jeremy C., 2002, Information Production and Capital Allocation: Decentralized versus Hierarchical Firms, *The Journal of Finance* 57, 1891–1921.

Tate, Geoffrey, and Liu Yang, 2015, The Bright Side of Corporate Diversification: Evidence from Internal Labor Markets, *The Review of Financial Studies* 28, 2203–2249.

Tate, Geoffrey, and Liu Yang, 2016, The Human Factor in Acquisitions: Cross-Industry Labor Mobility and Corporate Diversification, SSRN Scholarly Paper 2578636, Social Science Research Network, Rochester, NY.

Waldman, Michael, 1984, Job Assignments, Signalling, and Efficiency, *The RAND Journal of Economics* 15, 255–267.

Weisbach, Michael S., 1988, Outside directors and CEO turnover, *Journal of Financial Economics* 20, 431–460.

Williamson, Oliver E., Michael L. Wachter, and Jeffrey E. Harris, 1975, Understanding the Employment Relation: The Analysis of Idiosyncratic Exchange, *The Bell Journal of Economics* 6, 250–278.

Yiu, Daphne W., Yuan Lu, Garry D. Bruton, and Robert E. Hoskisson, 2007, Business Groups: An Integrated Model to Focus Future Research, *Journal of Management Studies* 44, 1551–1579.

Zhang, Yan, and Nandini Rajagopalan, 2004, When the Known Devil Is Better than an Unknown God: An Empirical Study of the Antecedents and Consequences of Relay CEO Successions, *The Academy of Management Journal* 47, 483–500.

Table 1: Distribution of Firms by Countries

The table reports statistics of family group firms, non-family group firms, and standalone firms for the 45 countries in the sample. Column (1) reports the number of listed firms matching our sample selection criteria for which the ultimate controlling shareholder can be identified. Columns (2) and (3) report the number and percentage of firms affiliated with business groups whose ultimate controller is a family or individual(s). Columns (4) and (5) report the number and percentage of firms affiliated with non-family-controlled business groups. Columns (6) and (7) report the same statistics for standalone firms that are not affiliated with a business group. Emerging and developed capital markets are defined according to the country classification in the MSCI All World Index in 2007.

Country	(1) All sample firms	(2) Family group firms	(3) %	(4) Non-family group firms	(5) %	(6) Standalone firms	(7) %
Panel A: Emerging Capital Markets							
Argentina	83	23	28%	12	14%	48	58%
Brazil	294	54	18%	23	8%	217	74%
Chile	68	38	56%	8	12%	22	32%
Colombia	17	12	71%	0	0%	5	29%
Czech Republic	12	0	0%	7	58%	5	42%
Hungary	55	2	4%	8	15%	45	82%
India	2,803	357	13%	55	2%	2391	85%
Indonesia	201	72	36%	5	2%	124	62%
Israel	333	107	32%	4	1%	222	67%
Malaysia	787	189	24%	49	6%	549	70%
Mexico	74	24	32%	5	7%	45	61%
Pakistan	57	8	14%	8	14%	41	72%
Peru	17	8	47%	1	6%	8	47%
Philippines	154	89	58%	5	3%	60	39%
Poland	155	28	18%	14	9%	113	73%
South Africa	489	54	11%	63	13%	372	76%
South Korea	1,555	381	25%	36	2%	1138	73%
Sri Lanka	139	60	43%	9	6%	70	50%
Taiwan	272	78	29%	12	4%	182	67%
Thailand	158	57	36%	18	11%	83	53%
Turkey	143	68	48%	17	12%	58	41%
Venezuela	6	2	33%	1	17%	3	50%
EM Total	7,872	1,711	31%	360	10%	5,801	59%
Panel B: Developed Capital Markets							
Australia	1,923	101	5%	67	3%	1755	91%
Austria	136	5	4%	26	14%	105	83%
Belgium	268	49	18%	22	6%	197	80%
Canada	673	53	8%	11	2%	609	92%
Denmark	260	17	7%	16	5%	227	91%
Finland	162	15	9%	9	4%	138	89%
France	1,409	157	11%	138	7%	1114	84%
Germany	1,082	129	12%	97	7%	856	85%
Greece	381	105	28%	22	6%	254	68%
Hong Kong	216	52	24%	7	3%	157	78%
Ireland	140	8	6%		0%	132	96%
Italy	577	141	24%	39	5%	397	77%
Japan	2,206	116	5%	706	29%	1384	66%
Netherlands	356	43	12%	23	4%	290	88%
New Zealand	175	7	4%	1	0%	167	97%
Norway	197	27	14%	12	4%	158	87%
Portugal	47	8	17%	3	4%	36	81%
Singapore	652	124	19%	40	4%	488	82%
Spain	202	28	14%	31	7%	143	87%
Sweden	490	69	14%	7	1%	414	92%
Switzerland	772	73	9%	78	8%	621	84%
United Kingdom	3,183	85	3%	68	2%	3030	97%
United States	7,297	207	3%	199	2%	6891	96%
DM Total	22,804	1,619	12%	1,622	6%	19,563	86%
Total	30,676	3,330		1,982		25,364	

Table 2: Descriptive Statistics of Movements

This table reports summary statistics for executive movement variables in the sample. $Inflow$ measures the number of executives hired from other listed firms, and $Outflow$ is the number of executives leaving for other listed firms. The difference between them, $Net\ Inflow$, indicates the net inflows of executives. These executive movement variables are scaled by the number of existing executives at the beginning of the year. The total inflow, outflow, and net inflow are categorized as either $External$ or $Internal$ movement flows. This categorization is based on whether the receiver or the sender firm of the executive movement is external (firms outside the business group) or internal (firms affiliated with the same business group).

	(1) All Firms				(2) Family Group Firms				(3) Standalone Firms			
	Mean	p25	Median	p75	Mean	p25	Median	p75	Mean	p25	Median	p75
Total Inflow	0.023	0.000	0.000	0.000	0.023	0.000	0.000	0.007	0.023	0.000	0.000	0.000
External Inflow	0.021	0.000	0.000	0.000	0.015	0.000	0.000	0.000	0.023	0.000	0.000	0.000
External Outflow	0.022	0.000	0.000	0.000	0.016	0.000	0.000	0.000	0.024	0.000	0.000	0.000
External Net Inflow	-0.001	0.000	0.000	0.000	-0.000	0.000	0.000	0.000	-0.001	0.000	0.000	0.000
Internal Inflow					0.007	0.000	0.000	0.000				
Internal Outflow					0.006	0.000	0.000	0.000				
Internal Net Inflow					0.001	0.000	0.000	0.000				
Observations	192,409				29,431				162,978			

Table 3: Movements in Family Group Firms vs Standalone Firms

The sample is composed of family group firms and standalone firms. The dependent variables are firm-year measures of executive movements. $Inflow$ measures the number of executives hired from other listed firms, and $Outflow$ is the number of executives leaving for other listed firms. The difference between them, $Net\ Inflow$, indicates the net inflows of executives. These executive movement variables are scaled by the number of existing executives at the beginning of the year. The total inflow, outflow, and net inflow are categorized as either $External$ or $Internal$ movement flows. This categorization is based on whether the receiver or the sender firm of the executive movement is external (firms outside the business group) or internal (firms affiliated with the same business group). *Group* is an indicator variable that equals one if the firm is affiliated with a family-controlled group, and zero otherwise. *Stock Return* is the average industry-adjusted monthly stock returns scaled by their standard deviation. Firm characteristics include $Size$, $Firm\ Age$, $Tobin's\ Q$, $Cash$, $Capex$, $Tangibility$, $Leverage$, $Liquidity$, $Volatility$, and $Team\ Size$ as defined in Appendix A.1. All regression models include country, industry, and year fixed effects. Standard errors are corrected for clustering of observations at the firm level, and associated t-statistics are in parentheses. *, **, and *** indicate significance at the 10%, 5%, and1% levels, respectively.

Dep. Var. =	Executives: Inflow		Executives: Outflow		Executives: Net Inflow	
	Total	External	Total	External	Total	External
	(1)	(2)	(3)	(4)	(5)	(6)
Group	0.003***	-0.003***	0.001*	-0.004***	0.002*	0.001
	(4.88)	(-5.40)	(1.65)	(-5.82)	(1.92)	(1.23)
Stock Return	-0.000	-0.000	-0.000*	-0.000*	0.000	0.000
	(-1.59)	(-1.63)	(-1.73)	(-1.75)	(0.06)	(0.29)
Size	0.001***	0.001***	0.002***	0.002***	-0.000	-0.000
	(7.25)	(6.98)	(7.17)	(7.00)	(-0.95)	(-1.05)
Firm Age	-0.003***	-0.003***	0.001***	0.001***	-0.005***	-0.005***
	(-8.43)	(-8.45)	(2.89)	(2.85)	(-7.99)	(-7.95)
Capex	0.006	0.008	-0.001	-0.002	0.007	0.010
	(1.01)	(1.38)	(-0.18)	(-0.30)	(0.86)	(1.24)
Tobin's Q	0.000*	0.000*	0.000	0.000	0.000	0.000
	(1.85)	(1.88)	(0.96)	(1.00)	(1.15)	(1.16)
Leverage	0.001	0.002	0.007***	0.008***	-0.006***	-0.006***
	(1.04)	(1.32)	(4.02)	(4.46)	(-2.65)	(-2.88)
Cash	0.011***	0.011***	0.014***	0.014***	-0.004	-0.004
	(5.82)	(6.02)	(6.28)	(6.41)	(-1.36)	(-1.37)
Tangibility	-0.000	-0.001	-0.000	-0.001	-0.000	-0.000
	(-0.22)	(-0.50)	(-0.11)	(-0.37)	(-0.06)	(-0.03)
Liquidity	0.000	0.000	0.000	0.000	0.000	0.000
	(0.25)	(0.36)	(0.16)	(0.26)	(0.10)	(0.11)
Team Size	-0.004***	-0.003***	-0.006***	-0.005***	0.002***	0.002***
	(-10.48)	(-9.41)	(-14.67)	(-14.04)	(4.08)	(4.44)
Volatility	0.020***	0.020***	0.004	0.003	0.016***	0.017***
	(6.75)	(6.89)	(1.29)	(1.01)	(3.78)	(4.27)
Country FE	✓	✓	✓	✓	✓	✓
Industry FE	✓	✓	✓	✓	✓	✓
Year FE	✓	✓	✓	✓	✓	✓
Obs.	141,397	141,397	141,397	141,397	141,397	141,397

Table 4: Family Group Firms and Matched Standalone Firms

The outcome variables are the movement measures of executives in a firm in a given year. The reported statistics are the Average Treatment Effect of the Treated (ATT) and z-statistics (in parentheses) obtained when comparing family group firms to their matched control firms that are drawn from all other standalone firms in the sample with the same country ISO code and 1-digit SIC industry code, and are the nearest neighbor match based on the following covariates: *Size*, *Firm Age*, *Tobin's Q*, *Capex*, *Tangibility*, *Leverage*, *Liquidity*, *Volatility*, and *Team Size* as defined in Appendix A.1. Emerging and developed capital markets are defined according to the country classification in the MSCI All World Index in 2007.

Outcome Var. =	Inflow		Outflow		Net Inflow	
	Total	External	Total	External	Total	External
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Both Markets						
Family group vs Matched standalone ATT	0.004***	-0.002**	0.003*	-0.003***	0.002	0.001
	(5.18)	(-3.27)	(2.51)	(-3.33)	(1.17)	(0.69)
No. of family group firms	2,095	2,095	2,095	2,095	2,095	2,095
Panel B: Developed Markets						
Family group vs Matched standalone ATT	0.005***	-0.002	0.003*	-0.003*	0.002	0.001
	(5.36)	(-1.78)	(2.12)	(-2.44)	(1.57)	(0.99)
No. of family group firms	1,084	1,084	1,084	1,084	1,084	1,084
Panel C: Emerging Markets						
Family group vs Matched standalone ATT	0.004**	-0.003*	0.003	-0.003	0.001	0.000
	(2.70)	(-2.29)	(1.67)	(-1.83)	(0.26)	(0.12)
No. of family group firms	1,011	1,011	1,011	1,011	1,011	1,011

Table 5: Movement to Performance Sensitivity: Family Group Firms vs Standalone Firms

The sample is composed of family group firms and non-group (standalone) firms. The dependent variables are firm-year movement measures of executives. $Inflow$ measures the number of executives hired from other listed firms, and $Outflow$ is the number of executives leaving for other listed firms. The difference between them, $Net\ Inflow$, indicates the net inflows of executives. These executive movement variables are scaled by the number of existing executives at the beginning of the year. The total inflow, outflow, and net inflow are categorized as either *External* or *Internal* movement flows. This categorization is based on whether the receiver or the sender firm of the executive movements is external (firms outside the business group) or internal (firms affiliated with the same business group). *Group* is an indicator variable that equals one if a firm belongs to a family-controlled group, and zero otherwise. *Stock Return* is the average industry-adjusted monthly stock returns scaled by their standard deviation. Firm characteristics include $Size$, $Firm\ Age$, $Tobin's\ Q$, $Cash$, $Capex$, $Tangibility$, $Leverage$, $Liquidity$, $Volatility$, and $Team\ Size$ as defined in Table A.1. Panel A includes country, industry, and year fixed effects, and Panel B includes firm and year fixed effects. Standard errors are corrected for clustering of observations at the firm level, and associated t-statistics are in parentheses. *, **, and *** indicate significance at the 10%, 5%, and1% levels, respectively.

Panel A

Dep. Var. =	Executives: Inflow		Executives: Outflow		Executives: Net Inflow	
	Total	External	Total	External	Total	External
	(1)	(2)	(3)	(4)	(5)	(6)
Group	0.004***	-0.003***	0.001*	-0.005***	0.003**	0.002*
	(3.40)	(-5.31)	(2.01)	(-7.81)	(2.07)	(2.00)
Stock Return	-0.000	-0.000	-0.000	-0.000	0.000	0.000
	(-1.67)	(-1.66)	(-1.61)	(-1.64)	(0.93)	(0.97)
Group × Return	-0.003*	-0.002	0.002	0.002	-0.005**	-0.004*
	(-1.69)	(-1.57)	(0.71)	(0.74)	(-2.08)	(-1.78)
Country FE	✓	✓	✓	✓	✓	✓
Industry FE	✓	✓	✓	✓	✓	✓
Year FE	✓	✓	✓	✓	✓	✓
Obs.	141,397	141,397	141,397	141,397	141,397	141,397

Panel B

Dep. Var. =	Executives: Inflow		Executives: Outflow		Executives: Net Inflow	
	Total	External	Total	External	Total	External
	(1)	(2)	(3)	(4)	(5)	(6)
Stock Return	-0.000***	-0.000***	-0.000	-0.000	-0.000	-0.000
	(-3.05)	(-3.07)	(-1.26)	(-1.24)	(-0.74)	(-0.75)
Group × Return	-0.003*	-0.002**	0.002	0.002	-0.005*	-0.004*
	(-1.88)	(-2.17)	(0.90)	(0.91)	(-1.66)	(-1.81)
Firm FE	✓	✓	✓	✓	✓	✓
Year FE	✓	✓	✓	✓	✓	✓
Obs.	140,589	140,589	140,589	140,589	140,589	140,589

Table 6: Movement to Performance Sensitivity: Actual vs Pseudo-group Firms

The sample is composed of actual family group firms and pseudo-group firms formed by matched standalone firms. The dependent variables are firm-year movement measures of executives. $Inflow$ measures the number of executives hired from other listed firms, and $Outflow$ is the number of executives leaving for other listed firms. The difference between them, $Net\ Inflow$, indicates the net inflows of executives. These executive movement variables are scaled by the number of existing executives at the beginning of the year. The total inflow, outflow, and net inflow are categorized as either *External* or *Internal* movement flows. This categorization is based on whether the receiver or the sender firm of the executive movements is external (firms outside the business group) or internal (firms affiliated with the same business group). *Actual Group* is an indicator variable that equals one if a firm belongs to an actual family-controlled group, and zero otherwise. *Stock Return* is the average industry-adjusted monthly stock returns scaled by their standard deviation. Firm characteristics include $Size$, $Firm\ Age$, $Tobin's\ Q$, $Capex$, $Tangibility$, $Leverage$, $Liquidity$, $Volatility$, and $Team\ Size$ as defined in Table A.1. Panel A includes country, industry, and year fixed effects, and Panel B includes Firm and year fixed effects. Standard errors are corrected for clustering of observations at the firm level, and associated t-statistics are in parentheses. *, **, and *** indicate significance at the 10%, 5%, and1% levels, respectively.

Panel A

Dep. Var. =	Executives: Inflow			Executives: Outflow		Executives: Net Inflow	
	Total	External	Internal	External	Internal	External	Internal
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Actual Group	0.005***	-0.002**	0.007***	-0.003***	0.006***	0.002	0.001
	(5.75)	(-2.47)	(16.90)	(-3.90)	(14.41)	(1.45)	(1.30)
Stock Return	0.004**	0.003*	0.000*	-0.002	0.000	0.005*	0.000
	(2.17)	(1.94)	(1.70)	(-0.80)	(0.84)	(1.92)	(1.01)
Actual Group × Return	-0.009***	-0.006***	-0.002**	0.003	-0.000	-0.009***	-0.002
	(-3.94)	(-3.28)	(-2.48)	(1.02)	(-0.22)	(-2.70)	(-1.46)
Country FE	✓	✓	✓	✓	✓	✓	✓
Industry FE	✓	✓	✓	✓	✓	✓	✓
Year FE	✓	✓	✓	✓	✓	✓	✓
Obs.	43,322	43,322	43,322	43,322	43,322	43,322	43,322

Panel B

Dep. Var. =	Executives: Inflow			Executives: Outflow		Executives: Net Inflow	
	Total	External	Internal	External	Internal	External	Internal
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Stock Return	-0.001	-0.001	-0.000	-0.003	0.000	0.002	-0.000
	(-0.28)	(-0.27)	(-0.09)	(-1.18)	(0.16)	(0.79)	(-0.16)
Actual Group × Return	-0.003	-0.002	-0.001	0.004	-0.000	-0.006	-0.001
	(-1.43)	(-1.04)	(-1.28)	(1.23)	(-0.21)	(-1.59)	(-0.69)
Firm FE	✓	✓	✓	✓	✓	✓	✓
Year FE	✓	✓	✓	✓	✓	✓	✓
Obs.	38,470	38,470	38,470	38,470	38,470	38,470	38,470

Table 7: Family Group Firms: Pyramidal and Horizontal Groups

The sample is composed of family group firms with either pyramidal or purely horizontal organization structures. The dependent variables are firm-year movement measures of executives. *Inflow* measures the number of executives hired from other listed firms, and *Outflow* is the number of executives leaving for other listed firms. The difference between them, *Net Inflow*, indicates the net inflows of executives. These executive movement variables are scaled by the number of existing executives at the beginning of the year. The total inflow, outflow, and net inflow are categorized as either *External* or *Internal* movement flows. This categorization is based on whether the receiver or the sender firm of the executive movements is external (firms outside the business group) or internal (firms affiliated with the same business group). *Pyramid* is an indicator of pyramidal structure, which takes one if the firm is in a pyramidal business group. *Stock Return* is the average industry-adjusted monthly stock returns scaled by their standard deviation. Firm characteristics include *Size*, *Firm Age*, *Tobin's Q*, *Cash*, *Capex*, *Tangibility*, *Leverage*, *Liquidity*, *Volatility*, and *Team Size* as defined in Table A.1. All regression models include country, industry, and year fixed effects. Standard errors are corrected for clustering of observations at the firm level, and associated t-statistics are in parentheses. *, **, and *** indicate significance at the 10%, 5%, and1% levels, respectively.

Panel A

Dep. Var. =	Executives: Inflow			Executives: Outflow		Executives: Net Inflow	
	Total	External	Internal	External	Internal	External	Internal
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Pyramid	0.004**	-0.002	0.006***	-0.001	0.003***	-0.001	0.002**
	(2.43)	(-1.40)	(8.02)	(-0.35)	(4.00)	(-0.67)	(2.20)
Stock Return	-0.003**	-0.002*	-0.001	0.002	-0.000	-0.003	-0.001
	(-2.29)	(-1.70)	(-1.62)	(0.80)	(-0.19)	(-1.52)	(-0.98)
Country FE	✓	✓	✓	✓	✓	✓	✓
Industry FE	✓	✓	✓	✓	✓	✓	✓
Year FE	✓	✓	✓	✓	✓	✓	✓
Obs.	23,453	23,453	23,453	23,453	23,453	23,453	23,453

Panel B

Dep. Var. =	Executives: Inflow			Executives: Outflow		Executives: Net Inflow	
	Total	External	Internal	External	Internal	External	Internal
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Pyramid	0.004**	-0.002	0.006***	-0.001	0.003***	-0.001	0.003**
	(2.54)	(-1.31)	(8.14)	(-0.49)	(4.13)	(-0.51)	(2.32)
Stock Return	-0.001	-0.002	0.001	-0.000	0.001	-0.002	0.000
	(-0.38)	(-0.74)	(1.12)	(-0.02)	(0.84)	(-0.53)	(0.11)
Pyramid × Return	-0.003	-0.000	-0.003**	0.002	-0.001	-0.003	-0.002
	(-1.14)	(-0.11)	(-2.32)	(0.67)	(-0.84)	(-0.59)	(-0.93)
Country FE	✓	✓	✓	✓	✓	✓	✓
Industry FE	✓	✓	✓	✓	✓	✓	✓
Year FE	✓	✓	✓	✓	✓	✓	✓
Obs.	23,453	23,453	23,453	23,453	23,453	23,453	23,453

Table 8: Within Pyramidal Family Groups

The sample is pyramidal family group firms. The dependent variables are movement variables of executives. *Inflow* measures the number of executives hired from other listed firms, and *Outflow* is the number of executives leaving for other listed firms. The difference between them, *Net Inflow*, indicates the net inflows of executives. These executive movement variables are scaled by the number of existing executives at the beginning of the year. The total inflow, outflow, and net inflow are categorized as either *External* or *Internal* movement flows. This categorization is based on whether the receiver or the sender firm of the executive movements is external (firms outside the business group) or internal (firms affiliated with the same business group). *Apex* (*Bottom*) is an indicator variable for firms at the top (bottom) of a pyramidal chain. *Stock Return* is the average industry-adjusted monthly stock returns scaled by their standard deviation. *High Growth* is an indicator variable for firms whose asset growth rates are above their sample country's median. Firm characteristics include *Size*, *Firm Age*, *Tobin's Q*, *Cash*, *Capex*, *Tangibility*, *Leverage*, *Liquidity*, *Volatility*, and *Team Size* as defined in Table A.1. All regression models include country, industry, and year fixed effects. Standard errors are corrected for clustering of observations at the firm level, and associated t-statistics are in parentheses. *, **, and *** indicate significance at the 10%, 5%, and1% levels, respectively.

Panel A

Dep. Var. =	Executives: Inflow			Executives: Outflow		Executives: Net Inflow	
	Total	External	Internal	External	Internal	External	Internal
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Apex	-0.007**	-0.003	-0.004**	-0.005**	-0.004**	0.002	-0.000
	(-2.35)	(-1.33)	(-2.19)	(-2.16)	(-2.38)	(0.82)	(-0.06)
Bottom	-0.005*	-0.004*	-0.002	-0.002	-0.004**	-0.001	0.002
	(-1.74)	(-1.94)	(-0.71)	(-1.00)	(-1.98)	(-0.43)	(0.86)
High Growth	0.000	0.000	0.000	-0.003***	-0.001	0.004**	0.001
	(0.35)	(0.07)	(0.46)	(-2.97)	(-0.63)	(2.33)	(0.83)
Stock Return	-0.005**	-0.002	-0.002*	0.003	-0.001	-0.005	-0.002
	(-2.38)	(-1.54)	(-1.95)	(0.95)	(-0.48)	(-1.55)	(-0.95)
Group FE	✓	✓	✓	✓	✓	✓	✓
Country-Year FE	✓	✓	✓	✓	✓	✓	✓
Obs.	18,136	18,136	18,136	18,136	18,136	18,136	18,136

Panel B

Dep. Var. =	Executives: Inflow			Executives: Outflow		Executives: Net Inflow	
	Total	External	Internal	External	Internal	External	Internal
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Apex	-0.005	0.001	-0.006**	-0.004	-0.006**	0.006	-0.001
	(-1.44)	(0.52)	(-2.36)	(-1.61)	(-2.21)	(1.61)	(-0.19)
Bottom	-0.006*	-0.001	-0.005	-0.001	-0.004	-0.001	-0.001
	(-1.66)	(-0.69)	(-1.56)	(-0.31)	(-1.45)	(-0.15)	(-0.19)
High Growth	0.001	0.005**	-0.004	-0.002	-0.002	0.006*	-0.002
	(0.30)	(2.10)	(-1.38)	(-0.64)	(-0.71)	(1.73)	(-0.54)
Apex × High Growth	-0.003	-0.007***	0.004	-0.001	0.003	-0.006	0.001
	(-0.82)	(-2.62)	(1.39)	(-0.38)	(1.04)	(-1.34)	(0.27)
Bottom × High Growth	0.002	-0.004*	0.006**	-0.003	0.000	-0.002	0.005
	(0.41)	(-1.70)	(2.00)	(-0.76)	(0.17)	(-0.37)	(1.47)
Stock Return	-0.005**	-0.002	-0.002*	0.003	-0.001	-0.005	-0.002
	(-2.38)	(-1.57)	(-1.90)	(0.94)	(-0.47)	(-1.56)	(-0.92)
Group FE	✓	✓	✓	✓	✓	✓	✓
Country-Year FE	✓	✓	✓	✓	✓	✓	✓
Obs.	18,136	18,136	18,136	18,136	18,136	18,136	18,136

Table 9: Movement-level Analysis of Family Business Groups

This table analyzes movement pairs of firms that receive the executives ($Firm\ R$) and firms that send the executives ($Firm\ S$). The sample in Columns (1) and (2) is the firm pairs where R is a family group firm. Columns (3) and (4) restrict to firm pairs where the movement is to the listed receiver firm itself (instead of its subsidiaries). The dependent variable in Columns (1) to (4) is $From\ Internal$ dummy, which equals 1 if the sender firm S is in the same group as the receiver firm R. The sample in Columns (5) and (6) are firm pairs where S is a standalone firm. The dependent variable in these two columns is $To\ Group$ dummy, which equals 1 if the receiver firm R is affiliated with a family business group. The performance variables are industry-adjusted stock returns, $Return_{Ind.Adj}$, and normalized industry-adjusted stock return (scaled by its standard deviation), $Return_{Norm.}$. Firm characteristics of receiver firm R and the differences to its sender firm $R-S$ include $Size$, $Firm\ Age$, $Tobin's\ Q$, $Capex$, $Cash$, $Tangibility$, $Leverage$, $Liquidity$, $Volatility$, and $Team\ Size$ as defined in Table A.1. All regressions include firm and year fixed effects. Standard errors are corrected for clustering of observations at the firm level, and associated t-statistics are in parentheses. *, **, and *** indicate significance at the 10%, 5%, and1% levels, respectively.

Dep. Var. =	S=Internal or External				R= Group or Standalone	
	R=Group	R=Group	R=Parent	R=Parent	S=Standalone	S=Standalone
	(1)	(2)	(3)	(4)	(5)	(6)
R $Return_{Norm.}$	0.082***		0.085***			
	(3.30)		(3.34)			
(R-S) $Return_{Norm.}$	-0.083***		-0.087***		0.015**	
	(-2.90)		(-2.99)		(2.40)	
R $Return_{Ind.Adj.}$		0.739***		0.772***		
		(3.81)		(3.89)		
(R-S) $Return_{Ind.Adj.}$		-0.661***		-0.714***		0.092*
		(-2.89)		(-3.04)		(1.70)
S $Return_{Norm.}$					0.015***	
					(2.59)	
S $Return_{Ind.Adj.}$						0.092*
						(1.75)
(R-S) Tobin's Q	0.024	0.023	0.024	0.023	-0.016***	-0.016***
	(1.53)	(1.45)	(1.50)	(1.41)	(-4.44)	(-4.41)
(R-S) Size	-0.011	-0.012	-0.012	-0.013	0.014***	0.014***
	(-1.54)	(-1.56)	(-1.63)	(-1.64)	(6.52)	(6.49)
(R-S) Firm Age	-0.082***	-0.083***	-0.080***	-0.080***	0.065***	0.065***
	(-3.82)	(-3.85)	(-3.58)	(-3.61)	(10.83)	(10.83)
(R-S) Cash	-0.176**	-0.173*	-0.192**	-0.188**	0.137***	0.137***
	(-2.00)	(-1.96)	(-2.06)	(-2.01)	(5.84)	(5.84)
(R-S) Capex	-0.478*	-0.490*	-0.537*	-0.549*	0.386***	0.386***
	(-1.65)	(-1.67)	(-1.77)	(-1.79)	(4.94)	(4.94)
(R-S) Tangibility	0.192***	0.196***	0.207***	0.211***	-0.050***	-0.049***
	(3.00)	(2.98)	(3.18)	(3.15)	(-3.01)	(-2.99)
(R-S) Liquidity	0.007***	0.007***	0.007***	0.007***	-0.002***	-0.002***
	(3.60)	(3.61)	(3.50)	(3.51)	(-8.09)	(-8.11)
(R-S) Volatility	-0.098	-0.076	-0.100	-0.076	-0.023	-0.027
	(-0.41)	(-0.32)	(-0.41)	(-0.31)	(-0.51)	(-0.59)
(R-S) Leverage	-0.259***	-0.261***	-0.262***	-0.264***	0.180***	0.180***
	(-3.81)	(-3.80)	(-3.75)	(-3.74)	(9.44)	(9.43)
Firm Controls	✓	✓	✓	✓	✓	✓
Firm FE	✓	✓	✓	✓	✓	✓
Year FE	✓	✓	✓	✓	✓	✓
Obs.	69,458	69,458	66,737	66,737	109,788	109,788

Table 10: Sender Analysis: Movements Between Listed Family Group Firms and Potential Senders

The table examines a sample of potential firms (*Senders*) from which listed family group firms could have hired when there are executive position announcements (p). Columns (1) and (2) report estimates from the regression Equation 3. The potential sender firms in the sample are defined as all other firms located in the same country as the family group firm when the executive announcement p is made. ILM_{pi} is a dummy variable for whether the sender firm is in the same group as the focal firm where the position is created. In Columns (3) through (6), we categorize all possible senders as either being part of the same group as the focal firm (Internal Senders) or not (External Senders). $S\ Return_{Norm.}$ is the average industry-adjusted monthly stock returns scaled by their standard deviation for the sender firm i at time t. Firm characteristics of sender firm S and the differences to the receiver $(R-S)$ firm where p is announced include $Size$, $Firm\ Age$, $Tobin's\ Q$, $Capex$, $Cash$, $Tangibility$, $Leverage$, $Liquidity$, $Volatility$, and $Team\ Size$ as defined in Table A.1. Columns (1), (3), and (5) include year fixed effects and receiver-sender industry pair fixed effects. Columns (2), (4), and (6) include receiver-year fixed effects. All regressions include firm and year fixed effects. Standard errors are corrected for clustering of observations at the firm level, and associated t-statistics are in parentheses. *, **, and *** indicate significance at the 10%, 5%, and1% levels, respectively.

Dep. Var = $Sender_{pi}$	All Potential Senders		Internal Senders		External Senders	
	(1)	(2)	(3)	(4)	(5)	(6)
ILM_{pi}	0.561***	0.581***				
	(25.04)	(24.03)				
S $Return_{Norm.}$	-0.002	0.002	0.113**	0.241**	-0.004	0.002
	(-0.63)	(0.60)	(2.42)	(2.05)	(-0.96)	(0.39)
ILM_{pi}×$S\ Return_{Norm.}$	0.075*	0.077*				
	(1.70)	(1.65)				
(R-S) Tobin's Q	-0.002	-0.000	-0.037	-0.035	-0.001	0.000
	(-1.40)	(-0.07)	(-1.42)	(-0.87)	(-0.92)	(0.03)
(R-S) Size	-0.001	-0.011***	-0.007	-0.102***	-0.001	-0.010***
	(-0.73)	(-7.07)	(-0.55)	(-5.48)	(-0.61)	(-7.74)
(R-S) Firm Age	-0.002	0.006***	-0.044	-0.142**	-0.002	0.006***
	(-0.53)	(2.67)	(-1.11)	(-2.06)	(-0.67)	(2.69)
(R-S) Capex	0.033	0.011	-0.241	1.659**	0.055	-0.005
	(0.80)	(0.30)	(-0.43)	(2.28)	(1.47)	(-0.19)
(R-S) Tangibility	0.027**	-0.013	0.105	-0.575**	0.020*	-0.009
	(2.36)	(-1.54)	(0.73)	(-2.28)	(1.80)	(-1.19)
(R-S) Liquidity	-0.000	-0.000	0.019**	-0.031**	-0.001*	-0.000
	(-0.92)	(-0.36)	(2.30)	(-2.30)	(-1.71)	(-0.14)
(R-S) Volatility	0.030	-0.034	0.078	0.432	0.028	-0.033
	(1.03)	(-1.57)	(0.18)	(0.31)	(1.02)	(-1.60)
(R-S) Leverage	0.001	0.008	0.041	0.229	0.001	0.013*
	(0.14)	(0.93)	(0.29)	(0.80)	(0.14)	(1.69)
(R-S) Cash	0.026**	-0.019**	0.149	-0.367	0.022**	-0.011
	(2.26)	(-2.08)	(0.75)	(-0.87)	(2.00)	(-1.28)
Sender Controls	✓		✓		✓	
Year FE	✓		✓		✓	
R-S Ind. FE	✓		✓		✓	
Firm R -Year FE		✓		✓		✓
Obs.	44,453	44,296	1,420	805	42,900	42,752

Table 11: Receiver-Sender Firm Pairs within Family Business Groups

The table analyzes all firm pairs within a family business group. For each group firm, we view it as the receiver firm (R) and find all other group affiliates as the sender firms (S) and form firm pairs. The dependent variable *Movement Dummy* takes one if there is a movement observed from the sender firm to the focal receiver firm, and takes zero otherwise. S ΔIAF is the change of the sender firm's investments in affiliated firms, adjusted by impairment and scaled by total assets. *S Shldr* (*Sub*/*Supp*/*Cust*) captures the ownership and operational relationship between the sender firm and the receiver firm. Columns (1) to (3) include receiver firm-year fixed effects and sender firm fixed effects. Columns (4) to (6) include receiver-sender firm pair fixed effects and year fixed effects. Standard errors are corrected for clustering of observations at the firm level, and associated t-statistics are in parentheses. *, **, and *** indicate significance at the 10%, 5%, and1% levels, respectively.

Dep. Var. =	$Movement_{SR,t}$			
	(1)	(2)	(3)	(4)
S ΔIAF	0.074**	0.053**	0.071**	0.053**
	(2.56)	(2.17)	(2.39)	(2.11)
S *Return*	-0.001	0.001	0.000	0.001
	(-0.18)	(0.34)	(0.01)	(0.45)
S Shldr			0.082***	0.048***
			(9.05)	(5.49)
S Sub			0.097***	0.060***
			(9.70)	(6.43)
S Supp			0.007	0.029**
			(0.48)	(2.43)
S Cust			0.035**	0.030**
			(2.47)	(2.50)
Firm Control	R-S	R&R-S	R-S	R&R-S
R-Year FE	✓		✓	
S FE	✓		✓	
Year FE		✓		✓
Firm Pair FE		✓		✓
Obs.	91,540	97,251	88,214	93,663

A Appendix

A.1 Description of Variables

Executive Movement Variables

The executive movement measures are at the listed firm level and include movements across private subsidiaries of different listed firms. Movements across private subsidiaries of the same listed firm are not included. All measures are scaled by the number of existing executives at the beginning of the year.

Total Inflow: The number of executive movements from other listed firms (or private subsidiaries of those listed firms) in a year.

External Inflow: The number of executive movements from firms outside the affiliated business group in a year. For standalone firms, this variable is equal to $TotalInflow$.

Internal Inflow: The number of executive movements from firms within the same business group as the focal firm in a year. For standalone firms, this variable is equal to 0 by definition.

Total Outflow: The number of executive movements to other listed firms (or private subsidiaries of those listed firms) in a year.

External Outflow: The number of executive movements to other firms outside the group (or outside the listed firm for standalone firms) in a year.

Internal Outflow: The number of executive movements to other firms in the same group in a year.

Total Net Inflow: The net inflow of executive movements from firms outside the listed firm in a year.

External Net Inflow: The net inflow of executives from firms outside the group (or outside the listed firm for standalone firms) in a year.

Internal Net Inflow: The net inflow of executives from firms in the same group in a year.

Group Affiliation Variables

Group: An indicator variable that equals one if a firm belongs to a family business group.

Pyramid: An indicator variable that equals one if a firm belongs to a pyramidal group, and zero otherwise.

Apex: An indicator variable that equals one if a firm is at the top of a pyramidal ownership chain, and zero otherwise.

Bottom: An indicator variable that equals one if a firm is at the bottom of a pyramidal ownership chain, and zero otherwise.

Firm Characteristics Variables

Size: The log of total assets of the company converted to U.S. dollars using the fiscal year-end exchange rate. (Worldscope)

Firm Age: The natural logarithm of the age (in years) of a firm from its listing. (Worldscope)
Stock Return: Average monthly industry median adjusted stock returns scaled by their standard deviation measured. The standard deviation is measured over 48 months, ending with and including the period over which stock returns are averaged. (Worldscope)
Tobin's Q: A proxy for Tobin's Q, calculated as the sum of balance-date market capitalization, the book value of preference shares, and liabilities, divided by the book value of total assets. (Worldscope)
Tangibility: Net property, plant, and equipment scaled by total assets. (Worldscope)
Capex: Capital expenditure (additions to fixed assets) scaled by total assets. (Worldscope)
Leverage: The book value of debt scaled by total assets. (Worldscope)
Liquidity: Trading turnover, calculated as weekly trading value scaled by market cap (Worldscope).
Volatility: The standard deviation of monthly returns. (Worldscope, Orbis)
Team Size: The natural logarithm of the number of existing executives in the listed firm or its subsidiaries at the beginning of the year. (Orbis)

A.2 Description of Data Procedure

A.2.1 Construction of the Employer-employee Dataset

We construct the dataset of employees in listed firms by combining the Orbis DMC database and the Orbis ownership data to identify the relationships between listed firms and their private subsidiaries.

The DMC database contains comprehensive employment information on key individuals holding important roles in both public and private firms worldwide. Specifically, it includes C-suite executives, members of the board of directors, managers of crucial functions, branch officers, staff, and other significant contacts within the company. To standardize the job functions of these individuals, their titles and responsibilities are evaluated based on four hierarchical levels for each executive department (e.g., Sales, Finance, Human Resources, Research & Development), which may vary depending on the country. The highest hierarchical level within each department is designated a C-suite member, and the following three levels are classified respectively as executives, managers, and employees.

Based on the DMC standardized type of position information, we classify the employment data into two mutually exclusive sub-samples of executives and outside directors. We rely on the job function standardization offered by Orbis to achieve this categorization. It is a significant strength, particularly for international studies of managers and directors, as different legal and institutional environments may result in varied position names for individuals with the same job responsibilities.

Specifically, we examine standardized types of positions from Orbis and create two word lists for managers and directors: individuals whose *Type of Position* has one of the words from the EXEC

(executives) keyword list[25] and work in a listed firm or its private subsidiary; and individuals whose *Type of Position* has one of the words from the BOD (board of directors) keyword list[26] and work in a private subsidiary. Following this procedure, our executive sample includes senior managers of functional departments, officers, and other important company management employees, in addition to C-suite executives. We categorize board members of private subsidiaries as management employees in the executive sample. This is because they may not have the same monitoring responsibilities and board nomination procedures as those in listed firms. Instead, their responsibilities and roles might more closely align with executives in their corresponding listed parent companies.

A.2.2 Business Group Affiliation

Our identification of business group firms and family business group firms relies on the business group data first assembled by Masulis et al. (2011) and then extended as of 2007 by Masulis et al. (2020). This comprehensive ownership dataset covers business group firms in 45 countries derived from standard ownership databases such as Bureau van Dijk's Orbis, Worldscope, Thomson Reuters Global Ownership, and LionShares, combined with hand-collected data from media reports (Lexis-Nexis, Factiva, Bloomberg, Dun and Bradstreet's Who Owns Whom, stock exchanges, and securities regulators). Following Masulis et al. (2011), a business group is defined as a collection of two or more listed firms controlled by the same ultimate controlling shareholder. The ultimate controlling shareholder of a firm is the largest shareholder with at least 20 percent of the voting rights, or 10 percent if the shareholder also has other forms of control through positions such as CEO, chairman of the board, or founder. When the ultimate controlling shareholder is a family or an individual, the business group is defined as a family-controlled business group. The controlling family can be a biological family or known alliances of families.

We use the indicator variable *Pyramid* to measure the organizational structure of business groups. This variable takes the value of 1 if the maximum pyramid layer of the group firm is not less than one. The pyramid layer of a group firm is the count of the number of listed firms along the largest shareholding chain between this firm and its ultimate controlling shareholder. Within pyramidal

[25]EXEC keyword list: AdmDep (Administration Department), BrO (BrOff: Branch Office), CustS (Customer Service), ExeB (Executive Board), ExeC (Executive Committee), FinAc (Finance and accounting), Gov (Public & Government Affairs), Health (Health & Safety), HR, IT, Leg (Legal Department), Mark (Marketing and Advertising), Oper (Operations & Production & Manufacturing), OthD (Other Department), PMPMan (Product/Project/Market Management), Proc (Purchasing & Procurement), Qual (Quality), R&D, Sale (Sales and retail), SenMa (Senior Management), SpecP (Specific position)

[26]BOD keyword list: AdvB (Advisory Board), AudC (Audit Committee), BoD (Board of Directors), CoGoC (Corporate Governance Committee), CSRC (Corporate social responsibility committee), EnvC (Environment Committee), EthC (Ethics Committee), OthBC, (Other Board Committee), RemC (Remuneration committee), RiskC (Risk Committee), SafC (Safety Committee), SupB (Supervisory Board)

groups, we further distinguish between *Apex* firms, which are at the top of a pyramidal chain, *Bottom* firms, which are at the very bottom, and *Middle* firms, which are between the top and the bottom of the pyramidal chain.

A.2.3 Construction of Movement Variables

Identifying Movements Job-to-job movements can be measured through employer-employee-matched data. Haltiwanger et al. (2015) and Haltiwanger et al. (2018) use US Census data to identify job-to-job movement, that is when a job begins in the same quarter or in the quarter after a separation from a former job. They also identify worker poaching, that is, flows where a worker moves directly from one employer to another. We follow a similar approach to identify job-to-job movements from our employer-employee-matched dataset.

To track the movements of executives across listed firms, we begin by recording the earliest date at which each individual is reported as a management employee in a firm, assuming they stay with the same firm unless appointed to another listed firm at a later date. Using detailed announcement data from Orbis, we estimate the exact date that the movement occurred. We then compare the appointment dates of two employment records for the same individual and assign a value of 1 to the $Movement$ indicator variables for the firm that hires the manager (the $R(Receiver)$ firm) and the firm that is the former employer (the $S(Sender)$ firm). We track the *Sender* and *Receiver* firms for each $Movement$. Once we identify the $Movement$ indicator in the employer-employee matched sample, we aggregate the movements at the listed firm level and scale them by the number of existing executives to obtain yearly $Inflow$ movement variables for each *Receiver* firm and $Outflow$ movement variables for each *Sender* firm in our sample. We only consider movements across listed firms, so movements between two private subsidiaries within the same listed firm are excluded.

Movements identified in our sample capture key executives who previously worked for another listed firm in the sample. In other words, we focus on the key management personnel movement flows as a result of changes in job-employee matches after the on-the-job search procedure.

Constructing Movement Variables The $Inflow$ movement variables seek to capture gains in executives at the firm in a given year; these could include promotions, demotions, or lateral transfers from other firms. They measure the firm's managerial human capital inflows from other firms in the labor markets. We construct the $Inflow$ for all firms by aggregating the $Movement$ indicator at the *Receiver* firm level. $Total\ Inflow$ is the fraction of the number of executives hired from other firms relative to the number of existing managers at the *Receiver* firm in that year.

For *Sender* firms, we aggregate movements in $Outflow$ variables. $Outflow$ is the fraction of the number of executives who leave the *Sender* firm for other *Receiver* firms relative to the number of

existing executives at the *Sender* firm in that year. The $Outflow$ movement variables measure the firm's human capital outflows to the labor markets. We recognize that our data is limited by the lack of resignation dates, so the $Outflow$ movement measures are only a proxy for the management employee supply of the listed firm, but they do not necessarily account for labor attrition (managers that simply exit the firm without taking up a new position).

Based on whether firm R and firm S belong to the same business group, we classified the inflow and outflow movements into internal movements $Internal\ Inflow/Outflow$ and external movements $External\ Inflow/Outflow$. The internal movement measures indicate the percentage of executives who have moved across the firms within the same business group during a given year. Since our focus is on the executive flows across listed firms, we exclude movements across private subsidiaries within the same listed firm. By definition, the internal movement measures for standalone firms are zero, as they have no affiliated firms controlled by the same ultimate shareholder.

The external movement measures $External\ Inflow/Outflow$ show the entity's executive labor inflows and outflows across firms in the sample outside the business group as a percentage of the total headcount of executives in the firms. For standalone firms, this refers to labor inflows and outflows with other listed firms, which could be another standalone firm or a group firm. $External/Internal\ Inflow$ is the number of new hires from other firms in ELMs or ILMs. $External/Internal\ Outflow$ is the ratio of the number of executives leaving for other firms in ELMs or ILMs. All these executive movement measures are scaled by the number of existing executives at the firm in that year.

In addition to the employee inflows and outflows measured by $Inflow$ and $Outflow$ variables, we also calculate the focal firm's net inflows ($Net\ Inflow$). $External/Internal\ Net\ Inflow$ is $External/Internal\ Inflow$ minus $External/Internal\ Outflow$. Appendix A.1 presents a detailed description of variables.

Scaling Movements The movement variables are scaled by the firm's total headcount of executives at the beginning of each year. To calculate the total headcount, we add new appointments and subtract resignations in the previous year from the total headcount of the firm two years before. We begin the calculation from the earliest year with employment information available in the database. For observations without employment end date data, we assume that executives leave existing listed firms when appointed to a newly listed firm. As data on retirements and deaths of executives is unavailable, we right-winsorize the cumulative number of new appointments each year at the 99th percentile.

Table A.1: Distribution of Firms and Movements by Year

This table presents the yearly distribution of the number of firms and means of the number of executives in each firm and external inflows of executives from 2002 to 2017. Column (1) to (3) reports these statistics for all listed firms in our merged sample. The following columns break down and report the same statistics for standalone firms in Columns (4) to (6), and family group firms in Columns (7) to (10).

	All sample firms			Standalone firms			Family group firms			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Year	No. of firms	Avg. No. of people	External Inflow	No. of firms	Avg. No. of people	External Inflow	No. of firms	Avg. No. of people	External Inflow	Internal Inflow
2002	11,216	15.28	2.07%	9,589	14.90	2.17%	1,627	17.51	1.45%	0.77%
2003	11,970	16.04	2.12%	10,188	15.65	2.27%	1,782	18.24	1.23%	0.66%
2004	12,779	17.03	2.40%	10,887	16.50	2.56%	1,892	20.08	1.42%	0.91%
2005	13,584	18.19	2.53%	11,564	17.48	2.70%	2,020	22.26	1.61%	1.00%
2006	14,665	19.16	2.68%	12,515	18.26	2.84%	2,150	24.38	1.71%	1.02%
2007	14,701	20.73	2.62%	12,515	19.51	2.76%	2,186	27.71	1.81%	1.03%
2008	14,287	22.80	2.19%	12,108	21.23	2.29%	2,179	31.48	1.62%	0.78%
2009	14,028	24.79	1.97%	11,890	22.93	2.12%	2,138	35.08	1.18%	0.67%
2010	13,677	26.50	2.10%	11,563	24.27	2.21%	2,114	38.71	1.53%	0.86%
2011	13,176	28.67	2.04%	11,142	25.94	2.13%	2,034	43.68	1.57%	0.55%
2012	12,632	31.34	2.04%	10,656	28.24	2.11%	1,976	48.07	1.69%	0.79%
2013	12,008	34.15	1.92%	10,139	30.54	1.99%	1,869	53.75	1.54%	0.47%
2014	11,474	36.83	2.13%	9,675	32.72	2.24%	1,799	59.00	1.54%	0.75%
2015	10,675	39.27	1.78%	8,991	34.59	1.81%	1,684	64.29	1.60%	0.60%
2016	9,716	41.56	1.64%	8,162	36.26	1.72%	1,554	69.41	1.21%	0.45%
2017	8,729	44.56	1.56%	7,321	38.57	1.57%	1,408	75.71	1.52%	0.37%
Average		27.31	2.11%		24.85	2.22%		40.58	1.52%	0.73%

Table A.2: Descriptive Statistics of Firm Characteristics

This table reports descriptive statistics for various firm characteristics for firms from the fiscal years 2002 to 2017. Column (1) reports results for the full sample and Columns (2) and (3) report for the subsamples of family group firms and standalone firms. *Stock Return* is the average industry-adjusted monthly stock returns scaled by their standard deviation. *Size* is the natural logarithm of total assets in thousands USD and *Firm Age* is the natural logarithm of the number of years since listing. *Tobin's Q* is the market value of total assets (market value of equity plus the book value of debt) scaled by the book value of total assets. *Capex*, *Tangibility*, and *Leverage* are capital expenditure, the value of property, plant, and equipment, and book value of debt, all scaled by the book value of total assets. *Liquidity* is measured by the total trading volume in a year scaled by the number of issued shares. *Volatility* is the standard deviation of monthly returns. *Team Size* is the natural logarithm of the number of existing executives at the beginning of the year.

	(1) All sample firms				(2) Family group firms				(3) Standalone firms			
	Mean	p25	Median	p75	Mean	p25	Median	p75	Mean	p25	Median	p75
Stock Return	0.104	-0.115	0.034	0.247	0.108	-0.111	0.037	0.263	0.103	-0.117	0.034	0.245
Size	12.975	11.322	12.881	14.575	13.871	12.360	13.841	15.347	12.797	11.141	12.676	14.376
Firm Age	2.656	2.197	2.773	3.178	2.806	2.485	2.944	3.219	2.626	2.197	2.708	3.135
Capex	0.045	0.010	0.027	0.057	0.044	0.010	0.030	0.058	0.046	0.010	0.027	0.057
Tobin's Q	1.348	0.630	0.926	1.491	1.042	0.555	0.778	1.157	1.409	0.651	0.962	1.562
Leverage	0.231	0.052	0.201	0.353	0.263	0.105	0.247	0.388	0.224	0.044	0.191	0.345
Cash	0.157	0.036	0.093	0.208	0.129	0.039	0.087	0.169	0.162	0.035	0.094	0.218
Tangibility	0.261	0.057	0.194	0.400	0.288	0.090	0.250	0.439	0.255	0.052	0.183	0.390
Liquidity	1.999	0.167	0.537	1.467	1.979	0.128	0.393	1.067	2.003	0.176	0.572	1.542
Team Size	3.726	2.773	3.555	4.533	4.110	3.135	3.970	4.990	3.650	2.708	3.466	4.443
Volatility	0.132	0.075	0.109	0.162	0.120	0.072	0.103	0.148	0.135	0.076	0.111	0.165
Observations	144,906				23,987				120,919			

Table A.3: Nonfamily Group Firms and Matched Standalone Firms

The outcome variables are the movement measures of executives in a firm in a given year. The reported statistics are the Average Treatment Effect of the Treated (ATT) and z-statistics (in parentheses) obtained when comparing nonfamily group firms to their matched control firms that are drawn from all other standalone firms in the sample with the same country ISO code and 1-digit SIC industry code, and are the nearest neighbor match based on the following covariates: $Size$, $Firm\ Age$, $Tobin's\ Q$, $Capex$, $Tangibility$, $Leverage$, $Liquidity$, $Volatility$, and $Team\ Size$ Appendix A.1. Emerging and developed capital markets are defined according to the country classification in the MSCI All World Index in 2007.

Outcome Var. =	Inflow		Outflow		Net Inflow	
	Total	External	Total	External	Total	External
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Both Markets						
Nonfamily group vs Matched standalone ATT	0.001	-0.003***	0.003**	-0.000	-0.001	-0.003*
	(1.51)	(-3.58)	(2.97)	(-0.45)	(-1.09)	(-2.23)
No. of nonfamily group firms	1,451	1,451	1,451	1,451	1,451	1,451
Panel B: Developed Markets						
Nonfamily group vs Matched standalone ATT	0.005***	-0.002	0.003*	-0.003*	0.002	0.001
	(5.36)	(-1.78)	(2.12)	(-2.44)	(1.57)	(0.99)
No. of nonfamily group firms	1,199	1,199	1,199	1,199	1,199	1,199
Panel C: Emerging Markets						
Nonfamily group vs Matched standalone ATT	0.004**	-0.003*	0.003	-0.003	0.001	0.000
	(2.70)	(-2.29)	(1.67)	(-1.83)	(0.26)	(0.12)
No. of nonfamily group firms	252	252	252	252	252	252

Table A.4: Group Firms and Matched Standalone Firms (Match on Size)

The outcome variables are the movement measures of executives in a firm in a given year. The reported statistics are the Average Treatment Effect of the Treated (ATT) and z-statistics (in parentheses) obtained when comparing group firms to their matched control firms that are drawn from all other standalone firms in the sample with the same country ISO code and 1-digit SIC industry code and are the nearest neighbor match based on firm size as defined in Appendix A.1. Emerging and developed capital markets are defined according to the country classification in the MSCI All World Index in 2007.

Panel A: Family Group Firms and Matched Standalone Firms

Outcome Var. =	Inflow		Outflow		Net Inflow	
	Total	External	Total	External	Total	External
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Both Markets						
Family group vs Matched standalone ATT	0.003***	-0.004***	0.002	-0.004***	0.002	0.001
	(3.95)	(-4.62)	(1.33)	(-4.07)	(1.36)	(0.56)
No. of family group firms	2,500	2,500	2,500	2,500	2,500	2,500
Panel B: Developed Markets						
Family group vs Matched standalone ATT	0.003**	-0.004***	0.001	-0.004***	0.002	0.000
	(3.08)	(-4.33)	(1.08)	(-3.60)	(1.06)	(0.26)
No. of family group firms	1,329	1,329	1,329	1,329	1,329	1,329
Panel C: Emerging Markets						
Family group vs Matched standalone ATT	0.004*	-0.003*	0.002	-0.004*	0.002	0.001
	(2.54)	(-2.35)	(0.83)	(-2.28)	(0.87)	(0.51)
No. of family group firms	1,171	1,171	1,171	1,171	1,171	1,171

Panel B: Nonfamily Group Firms and Matched Standalone Firms

Outcome Var. =	Inflow		Outflow		Net Inflow	
	Total	External	Total	External	Total	External
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Both Markets						
Nonfamily group vs Matched standalone ATT	0.002*	-0.003**	0.001	-0.003*	0.001	0.000
	(2.06)	(-3.08)	(0.69)	(-2.57)	(0.85)	(0.02)
No. of nonfamily group firms	1,448	1,448	1,448	1,448	1,448	1,448
Panel B: Developed Markets						
Nonfamily group vs Matched standalone ATT	0.002*	-0.003**	0.001	-0.003*	0.001	-0.000
	(2.26)	(-2.82)	(0.91)	(-2.07)	(0.77)	(-0.12)
No. of nonfamily group firms	1,199	1,199	1,199	1,199	1,199	1,199
Panel C: Emerging Markets						
Nonfamily group vs Matched standalone ATT	0.000	-0.003	-0.001	-0.004	0.001	0.001
	(0.05)	(-1.34)	(-0.42)	(-1.78)	(0.34)	(0.30)
No. of nonfamily group firms	249	249	249	249	249	249

Table A.5: Movements in Business Group Firms vs Standalone Firms

The sample is composed of family group firms and standalone firms. The dependent variables are firm-year measures of executive movements. $Inflow$ measures the number of executives hired from other listed firms, and $Outflow$ is the number of executives leaving for other listed firms. The difference between them, $Net\ Inflow$, indicates the net inflows of executives. These executive movement variables are scaled by the number of existing executives at the beginning of the year. The total inflow, outflow, and net inflow are categorized as either *External* or *Internal* movement flows. This categorization is based on whether the receiver or the sender firm of the executive movement is external (firms outside the business group) or internal (firms affiliated with the same business group). *Group* is an indicator variable that equals one if the firm is affiliated with a family-controlled group, and zero otherwise. *Stock Return* is the average industry-adjusted monthly stock returns scaled by their standard deviation. Firm characteristics include $Size$, $Firm\ Age$, $Tobin's\ Q$, $Cash$, $Capex$, $Tangibility$, $Leverage$, $Liquidity$, $Volatility$, and $Team\ Size$ as defined in Appendix A.1. All regression models include country, industry, and year fixed effects. Standard errors are corrected for clustering of observations at the firm level, and associated t-statistics are in parentheses. *, **, and *** indicate significance at the 10%, 5%, and1% levels, respectively.

Panel A: Business Group Firms vs Standalone Firms

	Total Managers: Inflow	External Managers: Inflow	Total Managers: Outflow	External Managers: Outflow	Total Managers: Net Inflow	External Managers: Net Inflow
	(1)	(2)	(3)	(4)	(5)	(6)
Group	0.003***	-0.003***	0.002**	-0.003***	0.001	0.000
	(5.22)	(-5.73)	(2.45)	(-4.92)	(1.47)	(0.35)
Stock Return	-0.000	-0.000	-0.000*	-0.000*	0.000	0.000
	(-1.53)	(-1.60)	(-1.68)	(-1.70)	(0.02)	(0.17)
Firm Control	✓	✓	✓	✓	✓	✓
Country FE	✓	✓	✓	✓	✓	✓
Industry FE	✓	✓	✓	✓	✓	✓
Year FE	✓	✓	✓	✓	✓	✓
Obs.	155,250	155,250	155,250	155,250	155,250	155,250

Panel B: Nonfamily Group Firms vs Standalone Firms

	Total Managers: Inflow	External Managers: Inflow	Total Managers: Outflow	External Managers: Outflow	Total Managers: Net Inflow	External Managers: Net Inflow
	(1)	(2)	(3)	(4)	(5)	(6)
Group	0.002***	-0.002***	0.002**	-0.001	0.000	-0.001
	(2.78)	(-3.36)	(2.20)	(-1.14)	(0.02)	(-1.23)
Stock Return	-0.000*	-0.000*	-0.000	-0.000	0.000	0.000
	(-1.76)	(-1.81)	(-1.58)	(-1.59)	(0.50)	(0.42)
Firm Control	✓	✓	✓	✓	✓	✓
Country FE	✓	✓	✓	✓	✓	✓
Industry FE	✓	✓	✓	✓	✓	✓
Year FE	✓	✓	✓	✓	✓	✓
Obs.	131,797	131,797	131,797	131,797	131,797	131,797

Table A.6: Movements in Family Group Firms vs Standalone Firms (Excl. Japanese Firms)

The sample is composed of family group firms and non-group (standalone) firms excluding firms headquartered in Japan. The dependent variables are firm-year movement measures of executives. $Inflow$ measures the number of executives hired from other listed firms, and $Outflow$ is the number of executives leaving for other listed firms. The difference between them, $Net\ Inflow$, indicates the net inflows of executives. These executive movement variables are scaled by the number of existing executives at the beginning of the year. The total inflow, outflow, and net inflow are categorized as either $External$ or $Internal$ movement flows. This categorization is based on whether the receiver or the sender firm of the executive movements is external (firms outside the business group) or internal (firms affiliated with the same business group). *Group* is an indicator variable that equals one if a firm belongs to a family-controlled group, and zero otherwise. *Stock Return* is the average industry-adjusted monthly stock returns scaled by their standard deviation. Firm characteristics include $Size$, $Firm\ Age$, $Tobin's\ Q$, $Cash$, $Capex$, $Tangibility$, $Leverage$, $Liquidity$, $Volatility$, and $Team\ Size$ as defined in Appendix A.1. All regression models include country, industry and year fixed effects. Standard errors are corrected for clustering of observations at the firm level, and associated t-statistics are in parentheses. *, **, and *** indicate significance at the 10%, 5%, and1% levels, respectively.

Dep. Var.=	Executives: Inflow		Executives: Outflow		Executives: Net Inflow	
	Total	External	Total	External	Total	External
	(1)	(2)	(3)	(4)	(5)	(6)
Group	0.003***	-0.003***	0.001*	-0.004***	0.002*	0.001
	(4.71)	(-5.31)	(1.71)	(-5.57)	(1.71)	(1.14)
Stock Return	-0.000	-0.000	-0.000*	-0.000*	0.000	0.000
	(-1.57)	(-1.60)	(-1.75)	(-1.76)	(0.12)	(0.36)
Size	0.001***	0.001***	0.002***	0.002***	-0.000	-0.000
	(7.00)	(6.78)	(6.83)	(6.68)	(-0.80)	(-0.88)
Firm Age	-0.003***	-0.003***	0.002***	0.002***	-0.005***	-0.005***
	(-8.20)	(-8.25)	(3.34)	(3.32)	(-8.17)	(-8.17)
Capex	0.007	0.009	-0.001	-0.002	0.007	0.010
	(1.11)	(1.48)	(-0.11)	(-0.24)	(0.88)	(1.26)
Tobin's Q	0.000*	0.000*	0.000	0.000	0.000	0.000
	(1.83)	(1.87)	(0.93)	(0.97)	(1.13)	(1.15)
Leverage	0.002	0.002	0.008***	0.008***	-0.006**	-0.006***
	(1.36)	(1.60)	(4.03)	(4.46)	(-2.47)	(-2.72)
Cash	0.011***	0.011***	0.015***	0.015***	-0.004	-0.004
	(5.97)	(6.18)	(6.38)	(6.50)	(-1.36)	(-1.35)
Tangibility	-0.001	-0.001	-0.000	-0.001	-0.000	-0.000
	(-0.33)	(-0.57)	(-0.06)	(-0.31)	(-0.17)	(-0.12)
Liquidity	0.000	0.000	0.000	0.000	0.000	0.000
	(0.26)	(0.37)	(0.21)	(0.30)	(0.06)	(0.08)
Team Size	-0.003***	-0.003***	-0.005***	-0.005***	0.002***	0.002***
	(-9.83)	(-8.79)	(-14.04)	(-13.42)	(4.00)	(4.33)
Volatility	0.020***	0.020***	0.004	0.003	0.016***	0.017***
	(6.72)	(6.86)	(1.28)	(0.98)	(3.76)	(4.26)
Country FE	✓	✓	✓	✓	✓	✓
Industry FE	✓	✓	✓	✓	✓	✓
Year FE	✓	✓	✓	✓	✓	✓
Obs.	136,206	136,206	136,206	136,206	136,206	136,206

Table A.7: Family Group Firms vs Standalone Firms by Capital Market Development

Panel A shows the results of OLS regressions on the family group firms and standalone firms in capital-developed markets. Panel B reports the same estimates for emerging markets. The dependent variables are firm management employee movement variables. The main variable of interest is *Group*, which equals one if the firm is a member of a family business group in the observation year. *Stock Return* is the average industry-adjusted monthly stock returns scaled by their standard deviation. Firm characteristics include *Size*, *Firm Age*, *Tobin's Q*, *Capex*, *Tangibility*, *Leverage*, *Liquidity*, *Volatility*, and *Team Size* as defined in Table A.1. All specifications include country, industry, and year fixed effects. Standard errors are corrected for clustering of observations at the firm level, and associated t-statistics are in parentheses. *, **, and *** indicate significance at the 10%, 5%, and1% levels, respectively.

Panel A: Developed Markets

Dep. Var. =	Executives: Inflow		Executives: Outflow		Executives: Net Inflow	
	Total	External	Total	External	Total	External
	(1)	(2)	(3)	(4)	(5)	(6)
Group	0.004***	-0.003***	0.000	-0.005***	0.003***	0.002*
	(4.40)	(-4.10)	(0.45)	(-5.33)	(2.63)	(1.90)
Stock Return	-0.002***	-0.002***	-0.002**	-0.002**	-0.000	-0.000
	(-3.41)	(-3.13)	(-2.21)	(-2.33)	(-0.34)	(-0.05)
Firm Control	✓	✓	✓	✓	✓	✓
Country FE	✓	✓	✓	✓	✓	✓
Industry FE	✓	✓	✓	✓	✓	✓
Year FE	✓	✓	✓	✓	✓	✓
Obs.	105,455	105,455	105,455	105,455	105,455	105,455

Panel B: Emerging Markets

Dep. Var. =	Executives: Inflow		Executives: Outflow		Executives: Net Inflow	
	Total	External	Total	External	Total	External
	(1)	(2)	(3)	(4)	(5)	(6)
Group	0.004***	-0.003***	0.003**	-0.003**	0.000	-0.000
	(2.93)	(-2.81)	(2.15)	(-2.27)	(0.24)	(-0.13)
Stock Return	-0.000**	-0.000**	-0.000**	-0.000**	0.000	0.000
	(-2.42)	(-2.36)	(-1.99)	(-2.03)	(0.56)	(0.68)
Firm Control	✓	✓	✓	✓	✓	✓
Country FE	✓	✓	✓	✓	✓	✓
Industry FE	✓	✓	✓	✓	✓	✓
Year FE	✓	✓	✓	✓	✓	✓
Obs.	35,942	35,942	35,942	35,942	35,942	35,942

Table A.8: Movement to Performance Sensitivity: Family Group Firms vs Standalone Firms by Capital Market Development

Panels A and C show the results of OLS regressions on the family group firms and standalone firms in capital-developed markets. Panel B and D report the same estimates for emerging markets. Panels A and B control for country, year, and industry fixed effects. Panels C and D control for firm and year fixed effects. The dependent variables are firm management employee movement variables. The main variable of interest is the interaction of the *Group* indicator and performance measure *Return*. *Group* equals one if the firm is a member of a family business group in the observation year. *Stock Return* is the average industry-adjusted monthly stock returns scaled by their standard deviation. Firm characteristics include *Size*, *Firm Age*, *Tobin's Q*, *Capex*, *Tangibility*, *Leverage*, *Liquidity*, *Volatility*, and *Team Size* as defined in Table A.1. All specifications include country, industry, and year fixed effects. Standard errors are corrected for clustering of observations at the firm level, and associated t-statistics are in parentheses. *, **, and *** indicate significance at the 10%, 5%, and1% levels, respectively.

Panel A: Developed Markets

Dep. Var. =	Executives: Inflow		Executives: Outflow		Executives: Net Inflow	
	Total	External	Total	External	Total	External
	(1)	(2)	(3)	(4)	(5)	(6)
Group	0.004**	-0.003***	0.000	-0.005***	0.004*	0.002*
	(2.34)	(-4.49)	(0.57)	(-5.98)	(1.92)	(1.87)
Stock Return	-0.002***	-0.002***	-0.002	-0.002	-0.000	-0.000
	(-2.83)	(-2.99)	(-1.38)	(-1.44)	(-0.05)	(-0.07)
Group × Return	-0.002	0.001	0.001	0.000	-0.003	0.000
	(-0.69)	(0.43)	(0.24)	(0.22)	(-0.80)	(0.18)
Firm Controls	✓	✓	✓	✓	✓	✓
Country FE	✓	✓	✓	✓	✓	✓
Industry FE	✓	✓	✓	✓	✓	✓
Year FE	✓	✓	✓	✓	✓	✓
Obs.	105,455	105,455	105,455	105,455	105,455	105,455

Panel B: Emerging Markets

Dep. Var. =	Executives: Inflow		Executives: Outflow		Executives: Net Inflow	
	Total	External	Total	External	Total	External
	(1)	(2)	(3)	(4)	(5)	(6)
Group	0.004**	-0.003**	0.003***	-0.004***	0.001	0.001
	(2.65)	(-2.31)	(3.73)	(-4.77)	(0.42)	(0.77)
Stock Return	-0.000*	-0.000**	-0.000**	-0.000**	0.000	0.000
	(-2.05)	(-2.16)	(-2.17)	(-2.31)	(1.18)	(1.04)
Group × Return	-0.002	-0.002	0.005	0.005	-0.006*	-0.007*
	(-0.89)	(-0.86)	(1.26)	(1.43)	(-1.96)	(-1.78)
Firm Controls	✓	✓	✓	✓	✓	✓
Country FE	✓	✓	✓	✓	✓	✓
Industry FE	✓	✓	✓	✓	✓	✓
Year FE	✓	✓	✓	✓	✓	✓
Obs.	35,942	35,942	35,942	35,942	35,942	35,942

Table A.8: Movement to Performance Sensitivity: Family Group Firms vs Standalone Firms by Capital Market Development (Continued)

Panels A and C show the results of OLS regressions on the family group firms and standalone firms in capital-developed markets. Panel B and D report the same estimates for emerging markets. Panels A and B control for country, year, and industry fixed effects. Panels C and D control for firm and year fixed effects. The dependent variables are firm management employee movement variables. The main variable of interest is the interaction of the *Group* indicator and performance measure *Return*. *Group* equals one if the firm is a member of a family business group in the observation year. *Stock Return* is the average industry-adjusted monthly stock returns scaled by their standard deviation. Firm characteristics include *Size*, *Firm Age*, *Tobin's Q*, *Capex*, *Tangibility*, *Leverage*, *Liquidity*, *Volatility*, and *Team Size* as defined in Table A.1. All specifications include country, industry, and year fixed effects. Standard errors are corrected for clustering of observations at the firm level, and associated t-statistics are in parentheses. *, **, and *** indicate significance at the 10%, 5%, and1% levels, respectively.

Panel C: Developed Markets

Dep. Var. =	Executives: Inflow		Executives: Outflow		Executives: Net Inflow	
	Total	External	Total	External	Total	External
	(1)	(2)	(3)	(4)	(5)	(6)
Stock Return	-0.001	-0.001	-0.001	-0.001	-0.000	-0.000
	(-1.56)	(-1.55)	(-0.94)	(-0.96)	(-0.13)	(-0.13)
Group × Return	-0.001	0.000	-0.000	-0.001	-0.001	-0.001
	(-0.33)	(0.03)	(-0.00)	(-0.51)	(-0.20)	(-0.20)
Firm Controls	✓	✓	✓	✓	✓	✓
Firm FE	✓	✓	✓	✓	✓	✓
Year FE	✓	✓	✓	✓	✓	✓
Obs.	104,766	104,766	104,766	104,766	104,766	104,766

Panel D: Emerging Markets

Dep. Var. =	Executives: Inflow		Executives: Outflow		Executives: Net Inflow	
	Total	External	Total	External	Total	External
	(1)	(2)	(3)	(4)	(5)	(6)
Stock Return	-0.000***	-0.000***	-0.000	-0.000	-0.000	-0.000
	(-4.55)	(-4.51)	(-1.49)	(-1.50)	(-0.63)	(-0.59)
Group × Return	-0.003	-0.003*	0.005	0.005	-0.008*	-0.008**
	(-1.63)	(-1.94)	(1.29)	(1.57)	(-1.81)	(-2.22)
Firm Controls	✓	✓	✓	✓	✓	✓
Firm FE	✓	✓	✓	✓	✓	✓
Year FE	✓	✓	✓	✓	✓	✓
Obs.	35,823	35,823	35,823	35,823	35,823	35,823

Table A.9: Movement to Performance Sensitivity: Pyramid Family Group Firms vs Standalone Firms

The sample is composed of pyramidal family group firms and standalone firms. The dependent variables are firm-year movement measures of executives as defined in Table A.1. *Group* is an indicator variable that equals one if a firm belongs to a family-controlled group, and zero otherwise. *Stock Return* is the average industry-adjusted monthly stock returns scaled by their standard deviation. Firm characteristics include *Size*, *Firm Age*, *Tobin's Q*, *Capex*, *Tangibility*, *Leverage*, *Liquidity*, *Volatility*, and *Team Size* as defined in Table A.1. Their coefficients are not reported. Panel A reports the results of regressions with country, industry, and year fixed effects, and Panel B reports the results of regressions with firm and year fixed effects. Clustered standard errors are shown in parentheses. *, **, and *** indicate significance at the 10%, 5%, and1% levels, respectively.

Panel A

Dep. Var. =	Executives: Inflow		Executives: Outflow		Executives: Net Inflow	
	Total	External	Total	External	Total	External
	(1)	(2)	(3)	(4)	(5)	(6)
Group	0.005***	-0.003***	0.002*	-0.005***	0.003**	0.002
	(5.87)	(-4.59)	(1.84)	(-5.70)	(2.57)	(1.49)
Stock Return	-0.000*	-0.000*	-0.000*	-0.000*	0.000	0.000
	(-1.84)	(-1.81)	(-1.70)	(-1.70)	(0.69)	(0.69)
Group × Return	-0.004**	-0.002*	0.002	0.002	-0.007*	-0.005
	(-2.56)	(-1.83)	(0.77)	(0.91)	(-1.89)	(-1.59)
Country FE	✓	✓	✓	✓	✓	✓
Industry FE	✓	✓	✓	✓	✓	✓
Year FE	✓	✓	✓	✓	✓	✓
Obs.	135,870	135,870	135,870	135,870	135,870	135,870

Panel B

Dep. Var. =	Executives: Inflow		Executives: Outflow		Executives: Net Inflow	
	Total	External	Total	External	Total	External
	(1)	(2)	(3)	(4)	(5)	(6)
Stock Return	-0.000***	-0.000***	-0.000	-0.000	-0.000	-0.000
	(-2.99)	(-3.01)	(-1.27)	(-1.26)	(-0.69)	(-0.72)
Group × Return	-0.002**	-0.002**	0.002	0.002	-0.005	-0.004**
	(-2.05)	(-2.45)	(0.83)	(0.96)	(-1.35)	(-1.49)
Firm FE	✓	✓	✓	✓	✓	✓
Year FE	✓	✓	✓	✓	✓	✓
Obs.	135,074	135,074	135,074	135,074	135,074	135,074

Table A.10: Movement to Performance Sensitivity: Pyramid Family Group Firms vs Pseudo-group Firms

The sample is composed of pyramidal family group firms and pseudo-group firms consisting of standalone firms based on the matching procedure. The dependent variables are firm-year movement measures of executives as defined in Table A.1. *Actual Group* is an indicator variable that equals one if a firm belongs to an actual family-controlled group, and zero otherwise. *Stock Return* is the average industry-adjusted monthly stock returns scaled by their standard deviation. Firm characteristics include *Size*, *Firm Age*, *Tobin's Q*, *Capex*, *Tangibility*, *Leverage*, *Liquidity*, *Volatility*, and *Team Size* as defined in Table A.1. Their coefficients are not reported. Panel A reports the results of regressions with country, industry, and year fixed effects, and Panel B reports the results of regressions with firm and year fixed effects. Clustered standard errors are shown in parentheses. *, **, and *** indicate significance at the 10%, 5%, and1% levels, respectively.

Panel A

Dep. Var. =	Executives: Inflow			Executives: Outflow		Executives: Net Inflow	
	Total	External	Internal	External	Internal	External	Internal
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Actual Group	0.006***	-0.002**	0.008***	-0.003***	0.007***	0.001	0.001**
	(6.33)	(-2.55)	(16.27)	(-3.60)	(14.57)	(1.17)	(2.08)
Stock Return	0.003**	0.003*	0.000	-0.001	0.000	0.004*	0.000
	(2.05)	(1.83)	(1.56)	(-0.75)	(0.85)	(1.80)	(0.90)
Actual Group × Return	-0.009***	-0.006***	-0.003***	0.003	-0.001	-0.009**	-0.002
	(-3.75)	(-2.90)	(-2.72)	(1.05)	(-0.44)	(-2.41)	(-1.46)
Country FE	✓	✓	✓	✓	✓	✓	✓
Industry FE	✓	✓	✓	✓	✓	✓	✓
Year FE	✓	✓	✓	✓	✓	✓	✓
Obs.	37,923	37,923	37,923	37,923	37,923	37,923	37,923

Panel B

Dep. Var. =	Executives: Inflow			Executives: Outflow		Executives: Net Inflow	
	Total	External	Internal	External	Internal	External	Internal
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Stock Return	-0.000	-0.000	-0.000	-0.003	-0.000	0.002	0.000
	(-0.23)	(-0.21)	(-0.09)	(-1.13)	(-0.25)	(0.79)	(0.06)
Actual Group × Return	-0.003	-0.002	-0.002	0.005	-0.001	-0.006	-0.001
	(-1.27)	(-0.72)	(-1.48)	(1.29)	(-0.46)	(-1.45)	(-0.62)
Firm FE	✓	✓	✓	✓	✓	✓	✓
Year FE	✓	✓	✓	✓	✓	✓	✓
Obs.	33,081	33,081	33,081	33,081	33,081	33,081	33,081

Table A.11: Vertical Movements in Pyramidal Group Firms

The sample is composed of family group firms with either pyramidal or purely horizontal organization structures. The dependent variables are fractions of vertical (and upward) executive movements in internal labor markets for firm-year observations. Vertical movements are defined as movements between family group firms on different pyramidal levels. Upward movements represent when the receiver firm has a higher pyramidal layer than the sender firm for such vertical movements. *Pyramid* is an indicator of pyramidal structure, which takes one if the firm is in a pyramidal business group. *Stock Return* is the average industry-adjusted monthly stock returns scaled by their standard deviation. Firm characteristics include *Size*, *Firm Age*, *Tobin's Q*, *Capex*, *Tangibility*, *Leverage*, *Liquidity*, *Volatility*, and *Team Size* as defined in Table A.1. All specifications include country, industry, and year fixed effects. Standard errors are corrected for clustering of observations at the firm level, and associated t-statistics are in parentheses. *, **, and *** indicate significance at the 10%, 5%, and1% levels, respectively.

Dep. Var. =	Executives: Inflow		Executives: Outflow		Executives: Net Inflow	
	Vetical	Upward	Vetical	Upward	Vetical	Upward
	(1)	(2)	(3)	(4)	(5)	(6)
Pyramid	0.550***	0.203***	0.510***	0.325***	0.540***	0.265***
	(8.79)	(4.00)	(10.10)	(6.47)	(12.97)	(6.65)
Stock Return	-0.112	-0.057	0.024	0.036	-0.063	-0.025
	(-1.53)	(-0.94)	(0.35)	(0.55)	(-1.35)	(-0.58)
Pyramid × Return	0.075	0.041	-0.026	-0.030	0.028	0.022
	(0.93)	(0.62)	(-0.33)	(-0.43)	(0.52)	(0.45)
GrpNoFirms	0.004	-0.003	0.004	-0.001	0.004	-0.001
	(0.93)	(-0.68)	(0.78)	(-0.28)	(1.28)	(-0.45)
GrpPyLayer	0.002	-0.028	0.004	0.012	-0.014	-0.040*
	(0.06)	(-0.96)	(0.12)	(0.45)	(-0.58)	(-1.76)
Size	-0.047***	0.005	0.030*	-0.025	-0.026**	-0.020*
	(-2.94)	(0.35)	(1.76)	(-1.53)	(-2.13)	(-1.75)
Firm Age	-0.000	0.030	0.032	0.041	0.016	0.046*
	(-0.00)	(0.98)	(0.87)	(1.30)	(0.57)	(1.89)
Capex	-0.277	0.341	0.459	0.366	0.429	0.685**
	(-0.62)	(0.87)	(1.20)	(1.13)	(1.44)	(2.51)
Tobin's Q	-0.040*	-0.085***	-0.040*	0.030	-0.029	-0.009
	(-1.69)	(-4.86)	(-1.93)	(1.34)	(-1.52)	(-0.57)
Leverage	0.032	0.145	-0.063	-0.175*	-0.036	-0.047
	(0.26)	(1.43)	(-0.62)	(-1.89)	(-0.43)	(-0.59)
Cash	0.138	0.390***	0.261*	0.185	0.119	0.243**
	(0.92)	(2.99)	(1.76)	(1.19)	(1.05)	(2.26)
Tangibility	0.225**	0.008	-0.061	0.103	0.120	0.071
	(1.99)	(0.08)	(-0.57)	(1.00)	(1.47)	(0.91)
Liquidity	0.001	0.003	0.000	0.001*	-0.000	0.001
	(0.32)	(1.17)	(0.31)	(1.65)	(-0.27)	(1.49)
Team Size	0.037	0.036*	-0.052**	-0.032	0.016	0.024
	(1.49)	(1.67)	(-2.33)	(-1.27)	(0.87)	(1.39)
Volatility	0.198	-0.117	0.020	-0.201	0.148	0.043
	(0.78)	(-0.64)	(0.17)	(-1.56)	(0.92)	(0.25)
Country FE	✓	✓	✓	✓	✓	✓
Industry FE	✓	✓	✓	✓	✓	✓
Year FE	✓	✓	✓	✓	✓	✓
Obs.	1,810	1,810	1,739	1,739	3,195	3,195

Table A.12: Movement-level Analysis of Non-family Business Groups

This table analyzes movement pairs of firms that receive the executives ($Firm\ R$) and firms that send the executives ($Firm\ S$). The sample in Columns (1) and (2) is the firm pairs where R is a non-family group firm. Columns (3) and (4) restrict to firm pairs where the movement is to the listed receiver firm itself (instead of its subsidiaries). The dependent variable in Columns (1) to (4) is $From\ Internal$ dummy, which equals 1 if the sender firm S is in the same group as the receiver firm R. The sample in Columns (5) and (6) are firm pairs where S is a standalone firm. The dependent variable in these two columns is $To\ Group$ dummy, which equals 1 if the receiver firm R is affiliated with a family business group. The performance variables are industry-adjusted stock returns, $Return_{Ind.Adj}$, and normalized industry-adjusted stock return (scaled by its standard deviation), $Return_{Norm.}$. Firm characteristics of receiver firm R and the differences to its sender firm $R-S$ include $Size$, $Firm\ Age$, $Tobin's\ Q$, $Capex$, $Cash$, $Tangibility$, $Leverage$, $Liquidity$, $Volatility$, and $Team\ Size$ as defined in Table A.1. All regressions include firm and year fixed effects. Standard errors are corrected for clustering of observations at the firm level, and associated t-statistics are in parentheses. *, **, and *** indicate significance at the 10%, 5%, and1% levels, respectively.

Dep. Var. =	S=Internal or External				R= Group or Standalone	
	R=Group	R=Group	R=Parent	R=Parent	S=Standalone	S=Standalone
	(1)	(2)	(3)	(4)	(5)	(6)
R $Return_{Norm.}$	-0.009		-0.006			
	(-0.42)		(-0.28)			
(R-S) $Return_{Norm.}$	-0.003		-0.004		-0.003	
	(-0.14)		(-0.16)		(-0.41)	
R $Return_{Ind.Adj.}$		-0.081		-0.070		
		(-0.40)		(-0.34)		
(R-S) $Return_{Ind.Adj.}$		-0.130		-0.133		-0.010
		(-0.66)		(-0.66)		(-0.16)
S $Return_{Norm.}$					-0.002	
					(-0.26)	
S $Return_{Ind.Adj.}$						-0.002
						(-0.04)
(R-S) Tobin's Q	0.030**	0.029**	0.030**	0.030**	-0.010***	-0.010***
	(2.33)	(2.30)	(2.34)	(2.32)	(-3.16)	(-3.13)
(R-S) Size	-0.076***	-0.076***	-0.077***	-0.077***	0.060***	0.060***
	(-10.11)	(-10.10)	(-10.32)	(-10.31)	(22.03)	(21.98)
(R-S) Firm Age	0.012	0.012	0.011	0.012	0.023**	0.023**
	(0.52)	(0.53)	(0.51)	(0.51)	(2.31)	(2.31)
(R-S) Cash	-0.076	-0.075	-0.088	-0.087	0.118***	0.118***
	(-0.87)	(-0.86)	(-0.98)	(-0.97)	(4.71)	(4.70)
(R-S) Capex	-0.965**	-0.964**	-0.988**	-0.988**	0.125	0.125
	(-2.22)	(-2.22)	(-2.22)	(-2.22)	(1.60)	(1.59)
(R-S) Tangibility	0.102	0.102	0.103	0.104	0.022	0.022
	(1.32)	(1.33)	(1.32)	(1.33)	(1.18)	(1.18)
(R-S) Liquidity	0.001	0.001	0.001	0.001	-0.002***	-0.002***
	(0.47)	(0.47)	(0.45)	(0.45)	(-6.51)	(-6.51)
(R-S) Volatility	-0.146	-0.140	-0.162	-0.156	0.175***	0.176***
	(-0.70)	(-0.68)	(-0.77)	(-0.74)	(3.53)	(3.55)
(R-S) Leverage	0.226*	0.226*	0.223*	0.223*	-0.068***	-0.068***
	(1.92)	(1.92)	(1.87)	(1.87)	(-2.61)	(-2.61)
Firm Controls	✓	✓	✓	✓	✓	✓
Firm FE	✓	✓	✓	✓	✓	✓
Year FE	✓	✓	✓	✓	✓	✓
Obs.	78,384	78,386	76,816	76,818	111,460	111,460

Table A.13: Receiver-Sender Firm Pairs within Non-family Business Groups

The table analyzes all firm pairs within a non-family business group. For each group firm, we view it as the receiver firm (R) and find all other group affiliates as the sender firms (S) and form firm pairs. The dependent variable *Movement Dummy* takes one if there is a movement observed from the sender firm to the focal receiver firm, and takes zero otherwise. S ΔIAF is the change of the sender firm's investments in affiliated firms, adjusted by impairment and scaled by total assets. *S Shldr* (*Sub*/*Supp*/*Cust*) captures the ownership and operational relationship between the sender firm and the receiver firm. Columns (1) to (3) include receiver firm-year fixed effects and sender firm fixed effects. Columns (4) to (6) include receiver-sender firm pair fixed effects and year fixed effects. Standard errors are corrected for clustering of observations at the firm level, and associated t-statistics are in parentheses. *, **, and *** indicate significance at the 10%, 5%, and1% levels, respectively.

Dep. Var. =	$Movement_{SR,t}$			
	(1)	(2)	(3)	(4)
S ΔIAF	0.034	-0.016	0.020	-0.040
	(0.94)	(-0.51)	(0.53)	(-1.21)
S *Return*	0.001	-0.006**	0.002	-0.005*
	(0.75)	(-2.45)	(0.98)	(-1.96)
S Shldr			0.005	0.019**
			(0.46)	(2.09)
S Sub			-0.022	0.030***
			(-1.50)	(3.06)
S Supp			-0.022***	0.013**
			(-3.78)	(2.10)
S Cust			-0.023***	0.018***
			(-3.89)	(3.90)
Firm Control	R-S	R&R-S	R-S	R&R-S
R-Year FE	✓		✓	
S FE	✓		✓	
Year FE		✓		✓
Firm Pair FE		✓		✓
Obs.	142,128	143,055	135,960	136,788