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RESEARCH ARTICLE

Product diversification strategy, business group affiliation, and IPO underpricing: A study of Chinese firms

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Research Summary: Extant research has largely ignored if and how product diversification strategy influences IPO performance. We intend to fill this gap in the literature, especially in relation to transition economies where the role of diversification is institutionally bound. Specifically, drawing on the strategic actions and political connections arguments, we contend that the level of a firm's product diversification has a positive relationship with IPO underpricing. Given the prominent role of business groups in shaping firms' diversification strategies in transition economy, we further examine whether business groups' nonmarket capital—political, relational, and reputational capital—moderates the relationship between product diversification strategy and IPO underpricing.

Managerial Summary: Due to the lack of transparency, investors in transition economies face higher *ex ante* uncertainties and have to bear more investment risks. As such, IPO firms have to “leave more money on the table” to compensate investors. This study aims to answer the question of whether and how an IPO firm's corporate strategy and business group affiliation affect investors' perceived uncertainties and, thus, the need to leave a large amount of money on the table to compensate investors. Using a sample of IPO firms in China, this study finds that the nonmarket capital that stems from business group affiliation helps mitigate the uncertainties investors perceive with higher levels of diversification, thus reducing the need for IPO firms to discount their offerings too much so that they can retain more wealth for business development.

KEYWORDS

business group, institutional embeddedness, IPO underpricing, political connections, product diversification, transition economies

1 | INTRODUCTION

Research on IPOs has captured a lot of attention in recent years (e.g., Arthurs, Hoskisson, Busenitz, & Johnson, 2008; Bell, Filatotchev, & Aguilera, 2014; Leitterstorff & Rau, 2014; Park & Patel, 2015). However, despite the significant growth of studies on IPOs, the determinants of IPO performance are still not fully understood (Ljungqvist, 2007). With the almost “fanatical” growth of many IPO markets in transition economies in recent years, understanding the determinants of IPO performance in those economies becomes even more relevant and important. Research has well documented the underdeveloped institutional environments in transition economies (Peng, 2003; Peng, Lee, & Wang, 2005). To better understand IPO performance in transition economies, we need to examine the unique institutional features as well as how investors value IPO firms.

In this study, we focus on China and examine how its two institutional features influence IPO performance. First, the composition of IPO firms in China differs from their counterparts in developed economies. For entrepreneurial ventures in developed economies, IPO represents a popular vehicle for firms to raise additional capital for continued growth. For state-owned enterprises in transition economies, IPO is a key process toward realizing privatization of state assets. Many IPO firms in China are mature and highly diversified. Given the importance of product diversification strategy in determining firm performance (Hoskisson & Hitt, 1990), such strategy is likely an important factor in affecting IPO performance. This is especially the case in transition economies where diversification is often viewed as a market substitution strategy and firms diversify to gain access to critical resources not via market means but by political connections (Wan & Hoskisson, 2003). We view an IPO firm's product diversification strategy as important information for investors to estimate its intrinsic value from (a) a strategic actions perspective focusing on a firm's primary value proposition and quality of underlying strategic resources and (b) a political connections perspective emphasizing political resources in facilitating corporate diversification. Particularly, political connections is a salient success factor in China (Fan, Wong, & Zhang, 2007; Li & Zhang, 2007), warranting its value in investors' evaluations of firms' diversification strategies. By examining how product diversification influences IPO performance, we respond to the call made by Certo, Holcomb, and Holmes (2009) on the need to study whether or not IPO performance would be affected by the product diversification strategy of an IPO firm and, consequently, fill the gap in the literature.

Second, product diversification strategy in China is closely related to the unique organizational form of business groups (Khanna & Palepu, 2000; Khanna & Rivkin, 2001; Kock & Guillen, 2001). A business group is a unique institutional arrangement historically embedded in many transition economies (Khanna & Rivkin, 2001; Peng & Delios, 2007). It is a collection of legally independent firms that are tied by multiple types of relations through which they coordinate to pursue collective objectives (Yiu, Lu, Bruton, & Hoskisson, 2007). Firms selected to join business groups are typically elites from a variety of industries or leading enterprises in related industries from different administrative regions. Business groups differ in various ways, such as relationships with government, within-group interactions, and visibility and influence in the market. Given the prominence of business groups and its inseparable linkage with diversification strategies in transition economies, we explore the impact of business group affiliation and, more specifically, if and how business groups' political capital, relational capital, and reputational capital moderate the relationship between product diversification strategy and IPO performance.

Following most studies on IPO, we focus on IPO underpricing as a reflection of IPO performance. As a widely used measure of IPO performance, IPO underpricing reflects the value of issuing firms' stock determined by the market but not captured by the issuing firms when the stock was first offered for sale, which is “money left on the table” (Daily, Certo, Dalton, & Roengpitya, 2003; Ljungqvist, 2007). IPOs are often underpriced due to investor uncertainty about the value of the IPO firm (e.g., Ritter & Welch, 2002; Sanders & Boivie, 2004). The more uncertain firm valuation is from the perspective of the investors, the more underpriced the IPO firm will have to offer in order to compensate investors for the risk they are taking. To the extent that investors are uncertain of the true value of an IPO firm, the amount of IPO underpricing will increase. Because underpricing represents value not captured by the firm, IPO firms want to minimize underpricing (Ljungqvist, 2007). In other words, higher levels of underpricing are

generally regarded as undesirable by IPO firms and, hence, lower levels of underpricing are often perceived as a crucial indication of better IPO performance. IPO underpricing has been particularly severe in transition economies. For example, the underpricing averaged 137% from 1990 to 2010 in China, but it was only about 17% on average in the United States in the last 50 years (Solomon, 2011).

This study contributes to the strategic entrepreneurship literature, particularly the IPO literature, in two major ways. First, an incorporation of the institutional context in IPO research has been advocated in the literature, but research in this direction is still limited (Bruton, Filatochev, Chahine, & Wright, 2010). We intend to contribute to the nascent research to understand IPO, including IPO performance, from an institutional perspective. Given the important role of institutional context in shaping firm behavior, strategy, and performance, examining how institutionally specific factors influence IPO underpricing in transition economies becomes relevant in IPO research. Accordingly, we seek to fill this gap by focusing our study on two unique institutional features of China: (a) the majority of participants of IPO market are formerly state-owned enterprises and large established corporations, which are generally more diversified than their counterparts in developed economies; and (b) many firms are affiliated to business groups. Specifically, the Chinese IPO market is more highly regulated than its counterparts in developed economies. As such, the strategies and characteristics of IPO firms, as well as their impact on IPO performance, warrant special attention in the strategic entrepreneurship literature. Specifically, different countries, including transition economies, have their unique institutional arrangements and variables that affect IPO strategies and performance, and if IPO research does not take those factors directly into consideration, the knowledge generated is likely to be incomplete and even misguided. By offering a more accurate account of IPO performance in transition economies, our study extends the IPO literature to institutional contexts that are vastly different from those in developed economies. Second, our study is the first study to examine the relevance of business group affiliation in IPO performance. Particularly, we go beyond extant literature of merely looking at business group affiliation or not (by using a dummy variable) by pursuing a more fine-grained examination of business groups' attributes. Specifically, we examine how these business groups' attributes moderate the relationship between an IPO firm's product diversification strategy and IPO underpricing from the lens of institutional relatedness. By examining the interactive effects of institutional relatedness and product relatedness, this study advances our understanding of how business groups benefit their member firms in transition economies. Thus, our focus on business groups' attributes is an important and useful direction for this line of research. In addition, our study provides practical implications in terms of the importance of political and business connections for success in stock markets in transition economies by shedding light on the relevance of using unique institutional arrangements and solutions in those economies.

2 | OVERVIEW OF CHINA'S IPO MARKET

The Chinese government established its capital market in the early 1990s, and the capital market has been under strong government influence since its inception. For a long time, the aim of the Chinese capital market, especially the IPO market, was to facilitate the corporatization of state-owned firms. Extant research generally notes that China's IPO market has undergone three main stages (Chen, Guan, Zhang, & Zhao, 2017; Liu, Tang, & Tian, 2013). In the first stage, the IPO market was directly controlled by the central government using a quota system, and the IPO quota was a scarce resource tightly controlled by the central government (Piotroski & Zhang, 2014). Under the quota system, each province received its IPO quota annually. The province identified prospective IPOs based on applications by firms in the province, and those firms would need to obtain approval from the central government (Chen et al., 2017). Under the channel system adopted in 2000, which is the second stage, regulators assigned channels directly to sponsors (underwriters) in accordance with their size and past performance. Sponsors recommended prospective firms to the central government to be evaluated and approved for an IPO. Although the channel system was more market-oriented than was the quota system, competition among sponsors was actually limited because each sponsor was already assigned with the channels at the beginning.

In the third stage, starting in 2004, the channel system was replaced by a sponsorship system in which the sponsor recommends its client firms to the central government for IPO. This system allows for more sponsor involvement and influence than did the previous systems, because sponsors are not assigned a certain number of channels in advance. Thus, sponsors have stronger incentives to select and monitor their client firms more diligently than before, and there is a stronger competition among sponsors and firms to obtain approval for IPO by the central government (Chen et al., 2017). This system is intended to further introduce market-based institutions into the IPO market by promoting increased competition, and it is hoped that the system raises the quality of the IPO firms. During this period, the number of listed firms grew significantly—from 1,300 in 2004 to 2,400 by the end of 2011.

Regardless of the systems used, the central government has assumed and maintained a strong role in the decision of IPO. Firms pursuing IPOs in China are required to satisfy a full set of government regulations as well as obtain ultimate approval by the central government. For example, in addition to clear regulations that stipulate the selection of an IPO, the legislation also contains many qualitative criteria that are subject to alternative interpretations. The purpose of these qualitative criteria is to give the central government the flexibility to select highly performing IPO firms with growth potential. At the same time, these rules give some government officials significant discretion in the IPO screening and selection process and, as such, political connection has remained a crucial factor in the application of IPO (Liu et al., 2013; Yang, 2013). In essence, not only do the quality and performance of the firm represent an important criterion for IPO selection and approval, but also the central government plays an essential role in China's IPO market.

3 | PRODUCT DIVERSIFICATION AND IPO UNDERPRICING

A firm's corporate diversification strategy represents crucial information about both intent and quality of a firm. Particularly, different product diversification strategies are driven by different factors and have different value propositions and performance implications (Hoskisson & Hitt, 1990; Palich, Cardinal, & Miller, 2000). Given the widely acknowledged benefits and drawbacks associated with product diversification, it is very likely that investors will treat an IPO firm's product diversification strategy as a crucial piece of information indicating the potential of the firm's future performance when making such a critical investment decision.

IPO firms vary widely in their levels of diversification, and this is particularly the case in China. Most IPO firms in China are not new ventures, but oftentimes combined from several state-owned enterprises and bureaus across various industries, making them considerably more diversified than their counterparts in developed economies (Huang & Song, 2006; Wang, Xu, & Zhu, 2004). As such, China represents an interesting setting for examining if and how diversification strategy influences IPO underpricing, where an IPO firm's diversification strategy may be interpreted by investors from either a strategic actions perspective or a political connections perspective. From a strategic actions perspective, investors view diversification strategies as strategic choices under managerial discretion aiming at increasing firms' market competitiveness or fulfilling managers' self-interest (Hoskisson & Hitt, 1990). From a political connections perspective, investors consider diversification the means to leverage government favor across multiple industries (Li, He, Lan, & Yiu, 2012).

Investors likely perceive lower levels of diversification favorably because this strategy allows firms to take advantage of the value/quality of their core competencies and their strategic intent of pursuing synergistic opportunity in related markets. The strategy literature has well established the potential for firms to generate competitive advantages through such a diversification strategy. Primarily premised on the resource-based view (Barney, 1991; Wernerfelt, 1984), extant research has generally supported that lower levels of product diversification help capitalize on a firm's core strategic resources to attain superior firm performance (e.g., Markides, 1995). Through expanding into a smaller number of related businesses, firms can achieve synergies by exploiting the interrelationships among different businesses (Porter, 1985). Such synergies will allow firms to lower their costs or offer unique benefits (such as one-stop shopping) to potential customers. Therefore, we suggest that the substantial synergistic opportunity underlying

lower levels of diversification represents a positive piece of information to investors who will use it to help gauge IPO firms' performance potential. Investors would view such IPO firms as having the "right" corporate strategy that will lead the firms to develop and maintain stronger competitive advantages and superior performance. Hence, investors would favor lower levels of diversification and would value such a strategy by IPO firms.

In addition, a smaller industry portfolio increases the transparency of an IPO firm's information environment and makes it easier for investors to evaluate the firm's quality and prospects (Huson & MacKinnon, 2003). Firms pursue lower levels of diversification when there are synergistic opportunities stemmed from their strategic resources (Markides & Williamson, 1994). Excess physical resources, most knowledge-based resources, and external financial resources that can be shared between related business lines often lead to related diversification (Chatterjee & Wernerfelt, 1991). As such, such a diversification strategy conveys critical information about the stock and value of an IPO firm's strategic resources. Furthermore, firms pursuing lower levels of diversification usually center their businesses on core competencies that distinguish them from their competitors. A firm's core competencies provide it with access to a wide variety of related markets (Prahalad & Hamel, 1990). Thus, such a diversification strategy can be viewed as the reflection of the value and applicability of a firm's core competencies. Therefore, we suggest that levels of diversification reduce information asymmetry between the IPO firm and the potential investors with regard to the former's value propositions and performance potential. To the extent that investors believe that levels of diversification reflect the true value of firms' core competencies/strategic resources, they would associate IPO firms pursuing such strategies with lower levels of *ex ante* uncertainty and be more confident about these firms' prospects. It is particularly the case for investors who are knowledgeable about at least one business unit of an IPO firm. The value propositions of two related business units sharing core strategic resources tend to be similar. Superior knowledge about the value of one of these business units will increase the accuracy of the performance forecast for the other business units of the IPO firm (Gilson, Healy, Noe, & Palepu, 2001). Given that underpricing is predominantly the result of information asymmetries, this type of diversification strategy would reduce IPO underpricing.

While lower levels of diversification generally have a positive effect on firm performance, the relationship between higher levels of diversification and firm performance is less clear. Empirical studies on the performance effect of higher levels of diversification have generated mixed results (Palich et al., 2000), indicating a high level of uncertainty about the value of possibly unrelated diversification. These diversifiers often consist of autonomous divisions sharing few resources. Divisional managers are responsible for maximizing profits of their own divisions rather than the profitability of the firm as a whole. The dissimilarity between divisions increases the difficulty in coordination and control. The high levels of divisional autonomy and administrative complexity make it challenging for investors to predict the future performance of firms operating across multiple unrelated industries.

Furthermore, it is challenging for investors to evaluate these diversifiers' true intent and quality. An increasing level of diversification also increases the need for more detailed firm-specific information across multiple product markets to assess the value of IPO firms in pursuit of such a strategy (Huson & MacKinnon, 2003). Company information and financial reports of these diversifiers are less informative and transparent due to the aggregate nature of their information from a wide variety of businesses and operations, as well as possible murky internal cost allocation (Gilson et al., 2001; Krishnaswami & Subramaniam, 1999). An investor's knowledge of one line of business of the firm does not apply to the other lines of business. Hence, the information asymmetry problem becomes severe for such firms. As such, their IPOs would command lower pricing as a compensation for higher levels of information asymmetries.

In addition, information asymmetries are especially large between insiders and outsiders of firms adopting higher levels of diversification as the result of agency problem. From an agency theory perspective, such levels of diversification often reflect a divergence of interests between shareholders and managers, because managers, as agents, may have an incentive to diversify their firms beyond the optimal level to serve their own interests (Amihud & Lev, 1981). Such opportunistic behaviors increase the uncertainty of whether or not a firm will actually benefit from the added business lines or divisions. Therefore, investors would be especially concerned with managerial motives when managers in IPO firms suddenly will have at their disposal a large amount of new financial capital upon the completion of

the IPO process. Because these managers, already managing diverse portfolios, may be easily tempted to expand even further into a larger number of unrelated businesses, investors are likely to be acutely concerned with higher levels of diversification pursued by IPO firms and less likely to favor such a diversification strategy.

Taken together, interpreting IPO firms' diversification strategy from a strategic actions perspective, investors would be cautious about motives and capacities of shareholder value creation in IPO firms that pursue higher levels of diversification. In such a scenario of high levels of *ex ante* uncertainty to investors, issuers usually have to provide discounted prices in order to induce less informed investors to subscribe to their offerings. Therefore, we predict that lower levels of product diversification pursued by an IPO firm will be viewed positively by investors; but, as the levels of product diversification become higher, the IPO firm will eventually be viewed negatively by investors.

Given the magnitude of government influences in transition economies (Hoskisson, Eden, Lau, & Wright, 2000), investors in China can also evaluate the performance potential of IPO firms pursuing different levels of diversification from a political connections perspective (Okhmatovskiy, 2010; Sun, Mellahi, Wright, & Xu, 2015). Research has shown that Chinese firms with political connections are more likely to diversify into different industries (Li et al., 2012). IPO firms in China are usually diversified, with strong political connections. Investors are likely to perceive the IPO firms lacking of political connections negatively, questioning whether these IPO firms are able to thrive in the markets characterized by institutional voids. However, political overembeddedness may be viewed negatively by investors as well. High political embeddedness is often associated with a high probability of government intervention. The very high levels of diversification are likely resulted from fulfilling the government's goal of economic development and employment creation rather than from firms' own strategic planning. In addition, as the degree of diversification increases, the costs of political activity coordination/integration increase (Shaffer & Hillman, 2000). That is, it is more challenging for highly diversified firms to manage the trade-offs between benefits and costs of political connections. Highly diversified IPO firms are likely to discount their offerings in order to compensate investors for such *ex ante* uncertainty.

Hypothesis 1 (H1) *IPO firms' level of product diversification is positively related to IPO underpricing.*

3.1 | Moderator: business group attributes

Business groups, called *qiye jituan* in Chinese, are defined as a collection of legally independent firms that are tied by multiple relations, including ownership, economic means, and/or social relations through which they coordinate to pursue mutual objectives (Khanna & Rivkin, 2001; Yiu et al., 2007). The initial formation of business groups was induced by the Chinese government to facilitate organizational transformation, in the form of corporatization and legitimization, and to foster economic development during the economic and institutional transition process in China (Keister, 2000). Chinese business groups are developed under the government's "administrative guidance" and receive tax incentives and other support in order to compete in both domestic and global markets (Keister, 1998). Business groups have been playing an important role in China's underdeveloped institutional environment, serving as a substitute of formal institutions by internalizing financial, labor, and technology markets in response to external market failures and providing inimitable nonmarket capital that is context- or history-specific (Khanna & Rivkin, 2001).

Research has established the importance for IPO firms to have prominent affiliations. Both endorsement ties (e.g., affiliations with VC firms or prestige underwriters) and collaborative ties (e.g., strategic alliances) have been found to influence investors' confidence in IPO firms' performance (Podolny, 1994; Podolny, Stuart, & Hannan, 1996; Stuart, Hoang, & Hybels, 1999). Building on this stream of research, we contend that business group affiliation is likely to have positive values and to influence investors' perceptions of IPO firms. However, business groups differ in their characteristics and activities (Luo & Chung, 2005) on which investors likely will have different perceptions. Therefore, instead of merely addressing business group affiliation as a binary variable, we examine how investors will

interpret IPO firms' product diversification strategies when the firms are affiliated with business groups with different characteristics and activities.

In particular, business groups have the unique institutional capital (political, relational, and reputational capital) (Peng et al., 2005) that works particularly well in a more diversified organizational structure due to its role in filling institutional void, as widely established in the literature (Khanna & Palepu, 2000). Hence, business group affiliation may mitigate or even turn investors' negative perceptions of highly diversified IPO firms into positive ones, which influences IPO underpricing. Specifically, we examine the moderating effects of business group political capital as represented by central government affiliation, relational capital via internalization and within-group restructuring advantage by related party transactions, and reputational capital attributed to group prominence.

3.2 | Business group's political capital: central government affiliation

Business groups differ in their affiliations with the central government, as well as their benefits from such governmental influence. The central government in China tends to put high priority on non-profit goals rather than shareholder value creation and profit maximization (Boycko, Shleifer, & Vishny, 1999). Specifically, the central government primarily focuses on sociopolitical objectives by ensuring the stability of the economic growth of the nation (Walder, 1995). Business groups affiliated with the central government usually operate in industries that are lifelines of the national economy or critical for national security (Keister, 2000). While receiving substantial governmental support, these firms take responsibility for fulfilling the government's political and social goals, which requires obedience to the government's needs or command. This is in line with the grabbing hand view of political ties (Cheung, Rau, & Stouraitis, 2010; Shleifer & Vishny, 1998; Tian & Estrin, 2008).

Still, firms can benefit from belonging to central government-affiliated business groups. This perspective is consistent with the helping hand view of political ties (Qian, 2003; Tian & Estrin, 2008). Political ties benefit firms in a variety of ways, which are likely viewed favorably by investors. For example, the central government may directly help firms through offering preferential treatment (Tian & Estrin, 2008). Given the deficiency in market institutions where the market is still not highly transparent, the central government's information and direct assistance (e.g., preferential loans or contracts) represent superior advantages to their business groups.

A firm operating across a broad spectrum of industries is in a better position to benefit from such political ties. Particularly, the primary strategic objectives or direct outcomes of higher levels of diversification are the increase in firm size and the expansion of business scope. A key advantage of such a diversification strategy is that firms can use institutional, nonmarket-based capabilities and competitive advantages to repeatedly enter new markets, which often helps create more employment opportunities; but, at the same time, the firms become more powerful in the marketplace and more influential in the political arena. Although diversifying into broader product markets requires significant commitment of new resources, which often goes beyond the scope of an individual firm's core resources and capabilities (Tallman & Li, 1996), being a member of a central government-affiliated business group allows it to continuously extend its product and governance scope by seeking and leveraging resources from such business groups. The value of political ties (especially with the central government), which are generic resources (Li et al., 2012), is usually not tightly linked with a specific industry and is often applicable across many industries, even unrelated ones, in different regions (Guillen, 2000; Wu, Li, & Li, 2013). As such, a highly diversified firm can reap substantial positive benefits from political ties by extending its presence in a larger number of businesses (Li et al., 2012).

Therefore, affiliation with central government-owned business groups likely represents a positive piece of information to potential investors. In transition economies like China, where market mechanism is still in development and government involvement in economic and business activities remains common, political connections can play an important role that can mitigate the negative perception of investors on an IPO firm with uncertain prospects if purely understood by market logic. Specifically, political connections help increase investors' confidence in the IPO firm's capability of leveraging diversification. In light of these arguments, we argue that political capital moderates

the positive relationship between product diversification and IPO underpricing in a way that this relationship becomes weaker when an IPO firm is affiliated with a central government-owned business group.

Hypothesis 2 (H2) *Central government-owned business group moderates the positive relationship between levels of product diversification and IPO underpricing such that the effect of product diversification in increasing IPO underpricing is weaker in IPO firms affiliated with central government-owned business groups.*

3.3 | Business group's relational capital: related party transactions

Business groups differ in the extent to which member firms are connected by transactional relationships. Related party transactions are those taking place between members of a business group. Such internal ties represent bonding social capital of a business group (Adler & Kwon, 2002). In China, the accumulation of bonding social capital, particularly relationship-based contracting, creates value for firms in the form of protection against underdeveloped institutions and market competition (Peng, 2003). Such an “internal market” helps mitigate market failure resulting from agency and information problems under institutional void (Khanna & Palepu, 2000). In addition, bonding social capital represents group cohesiveness that facilitates the pursuit of collective goals (Adler & Kwon, 2002). The self-enforcing values and behaviors are more likely to be enhanced in groups with densely connected members (Carolis, Litzky, & Eddleston, 2009), promoting collective actions toward overall value maximization, sometimes at the expense of individual members' interests (Chang, 2003). As such, a business group's related party transactions may indicate its member firms' institutional embeddedness and shield it from external market competition.

Related party transactions strengthen institutional embeddedness. According to network theory, prior ties facilitate the formation of future exchange relationships or collaborative ties (Gulati, 1995). Members of business groups with high levels of related party transactions are more likely to rely on one another as future transaction partners. Such internalized markets protect these firms against market competition from outside the group.

Particularly, a key competitive advantage associated with business group affiliation stems from business groups' role as alternative institutions to market mechanisms through internalizing transactions among member firms from a diversity of industries. Institutional relatedness refers to “the degree of informal embeddedness with the dominant institutions in the environment that confer resources and legitimacy on the focal organization” (Peng et al., 2005, p. 623). Institutional relatedness helps firms capitalize on economies of scope from nonmarket relational capital (Peng, 2003). Business groups' advantages based on institutional relatedness fit very well the needs of firms pursuing product diversification strategy. Firms with high levels of diversification usually aim at the overall financial economies generated from a wide portfolio of businesses. The access to the broad relational capital of member firms can facilitate a firm's further expansion in scope—it will benefit from collaborative opportunities and information exchange among group affiliates, especially when information asymmetries are particularly high in transition economies like China.

Furthermore, the ability to enjoy restructuring benefits of the business group also induces investors to appreciate the efficiency opportunity when the business optimizes its portfolio mix through related party transactions (Chang & Hong, 2000). Indeed, it is possible that business groups would resort to within-group transactions to strengthen member firms that will be undergoing IPO. Firms with unattractive businesses and assets can strip away unsuitable assets internally, and such restructuring and matching opportunities can be considered particularly beneficial for high diversifiers. As such, we argue that related party transactions, representing a strong indication of the presence of bonding social capital as well as providing potential restructuring benefits, can serve as a credible validation of an IPO firm's potential ability to generate economic rent from product diversification, mitigating the *ex ante* uncertainty perceived by investors.

Hypothesis 3 (H3) *Related party transactions moderate the positive relationship between levels of product diversification and IPO underpricing such that the effect of product diversification in increasing IPO*

underpricing is weaker in IPO firms affiliated with business groups involving in high levels of related party transactions.

3.4 | Business group's reputational capital: business group prominence

Reputation—generally defined as stakeholder perceptions in regard to an organization's ability to deliver valued and desired outcomes (Rindova & Fombrun, 1999)—provides the firm with one of the most important strategic resources that can increase its competitive advantage (Flanagan & O'Shaughnessy, 2005). For example, reputation helps a firm stand out from its competitors because potential customers are made more aware of the firm (Peteraf, 1993). Firm reputation also mitigates information asymmetry and customer uncertainty about the firm so that customers will feel more confident about its offerings (Weigelt & Camerer, 1988). In this regard, reputation has been found to positively affect firm performance (Fombrun & Shanley, 1990; Shamsie, 2003).

One of the most important dimensions that contribute to reputation is prominence. Based on the sociological tradition, Rindova, Williamson, and Petkova (2010) define prominence as the extent to which an organization is recognized among stakeholders and the extent to which it stands out among firms in the industry. Because reputation is attained when outsiders are familiar with the firm, it can be enhanced by an affiliation with prominent firms or by publicity provided by the media (Rindova et al., 2010). Building connections with prominent, established organizations is an effective way for firms to show their legitimacy to external investors (Galaskiewicz & Wasserman, 1989). In transition economies like China, market imperfections make it even more costly for an IPO firm to attract a strong market reception. In this context, affiliation with a reputable business group that can lend immediate reputational capital to the IPO firm will offer a distinct benefit in the IPO market (Peng et al., 2005). A business group, due to its reputation, will allow the IPO firm to gain increased legitimacy. For example, there is some evidence that more reputable business groups can facilitate member firms' access to international joint venture markets (Khanna & Palepu, 2000). Firms affiliated with business groups can have better access to foreign capital and technology because international investors and joint venture partners often value business groups' investments in reputation and ready access to the local government. Foreign firms value this reputational capital of business groups because of significant information asymmetry and their inherent inability to protect their intellectual property rights in those markets. Viewed from this perspective, affiliation with a prominent business group will offer a more reliable means of property rights protection.

Moreover, for a diversified IPO firm, association with a prominent business group will provide increased benefits to its multiple lines of business. Customers in transition economies, due to market imperfections, often find it difficult to evaluate a firm's various products (Khanna & Palepu, 1997). For a diversified firm, gaining reputational capital from a prominent business group will increase the perception of the quality of its products across its various lines of business (Lamin, 2013). In addition to benefits to the product markets, the IPO firm will benefit from the service of management talent through attraction of those talents to the prominent business group and their subsequent training and experience in various group firms (Chang & Hong, 2000).

Similar to political capital, reputational capital in the form of prominence is likely to alter investors' negative perceptions of firms with uncertain economic prospects in a society like China where people deem building connections with high status entities important. As such, we argue that prominent business groups provide precious reputational capital that can spread over a firm's different businesses to reduce the positive effect of product diversification on IPO underpricing.

Hypothesis 4 (H4) *Business group prominence moderates the positive relationship between levels of product diversification and IPO underpricing such that the effect of product diversification in increasing IPO underpricing is weaker in IPO firms affiliated with more prominent business groups.*

Figure 1 offers an overview of the conceptual model.

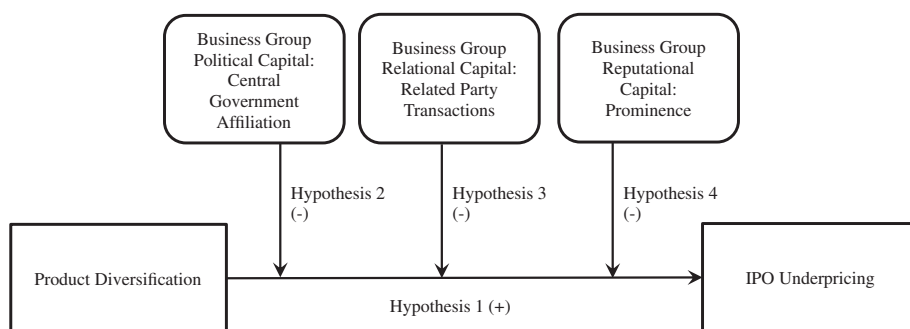


FIGURE 1 Conceptual framework

4 | METHODOLOGY

4.1 | Sample

Our study sample consists of 409 newly listed Chinese IPO firms in the two stock exchanges in China (Shanghai and Shenzhen) from 1999 to 2004. This was a time in which the Chinese IPO market was still in an early stage, with huge information asymmetry, thus investors had to rely heavily on IPO firms' attributes for quality signals. Also, new legal disclosure requirements for listed firms took effect in 1999, and a moratorium on IPOs was imposed from 2005 to 2006. We focus on China because it is the largest transition economy and its IPO market has been the most vibrant. Most of China's newly listed firms are privatized or restructured from state-owned enterprises (SOEs) (Aharony, Lee, & Wong, 2000). The IPO process represents China's ongoing transition from a centrally planned economy to a market-based economy. However, despite having a thriving IPO market, China's accounting and auditing standards, as well as its disclosure requirements, are still under development and cannot yet match the high standards of developed economies (Aharony et al., 2000). Limited information (except the prospectuses) on IPO firms is available for the investment public, and even the information in the prospectuses may not be totally reliable. In such an institutional context, an IPO firm's internal operating information sometimes may become less crucial for investors compared to its strategies and external connections and affiliations. Hence, signals become especially relevant for IPO performance. We obtained the data on IPO and other financial statement data from the CSMAR databases, which have been used widely in studies on China (e.g., Miller, Li, Eden, & Hitt, 2008). Market segment data were obtained from SDC Platinum IPO database.

4.2 | Measures

4.2.1 | Dependent variable

IPO underpricing is measured by the percentage difference between the offer price and the closing price on the first day of trading (Daily et al., 2003; Ljungqvist, 2007). When the amount of underpricing is large, it means the IPO firm has to price its shares much lower than the market in order to attract investors.

4.2.2 | Independent variable

While the entropy measure is the most popular measure of product diversification, many Chinese IPO firms did not report segment revenues. The SDC Platinum IPO database lists each firm's four-digit SIC codes in order of magnitude, with the first SIC code representing the primary market segment. Following Gedajlovic and Shapiro (1998) and Wan and Hoskisson (2003), we calculated a firm's level of product diversification using the imputed weighted diversification measure. By this measure, the market segment weights are imputed from a geometric series rather than based on actual segment revenues. This measure accounts for the three key elements of diversification: the number

of segments, the weights of segments, and the relatedness of segments. Gedajlovic and Shapiro (1998) found that the correlation of the weighted measure and the entropy measure is as high as 0.84, indicating that the former can be a reliable measure of product diversification alternative to the latter. Specifically, the level of product diversification is calculated as follows:

$$\text{Product diversification} = \sum P_i \times dij.$$

where

i = a firm's primary market segment;

j = a firm's secondary market segments;

d_{ij} = 0 if the firm operates in only one four-digit industry,

= 1 if j is in the same three-digit industry as i ,

= 2 if j is in the same two-digit industry as i , and

= 3 if j and i are in different two-digit industries;

P_i = a weight imputed to each industry, assumed to decline geometrically: 1, 2, 4, 8, 16. For example, if a firm operate in three industries, the revenues are assumed to be distributed in a 4:2:1 ratio, that is, 4/7 weight is assigned to the first SIC code (the primary market segment), 2/7 weight to the second SIC code (the first secondary market segment), and 1/7 to the third SIC code (the second secondary market segment).

4.2.3 | Moderating variables

We traced whether a listed firm or its ultimate owner is a business group according to the official list of Chinese business groups published annually by the State-owned Asset Supervision and Administration Commission (SASAC) of the State Council and the list of the Development Report of China's Large Enterprises (Groups) published by the National Bureau of Statistics. Central government-owned business group is coded 1 if the business group is on the list of central enterprises published by the National Bureau of Statistics, or 0 otherwise. Related party transaction of business group is measured by the total number of intragroup transactions taking place in the two years before the IPO. To classify whether a business group is a prominent one or not, we code it 1 if the business group is among the Top 500 Chinese Enterprises as ranked by the China Enterprise Confederation and China Enterprise Directors Association, or 0 otherwise.

4.2.4 | Control variables

We include a number of control variables relevant to the IPO context in the empirical analysis. We controlled for the IPO size in the models, which is measured by the total shares issued in the IPO. Because governance structure of an IPO firm may affect its valuation (Bell, Moore, & Filatotchev, 2012; Filatotchev & Bishop, 2002), we include several governance controls. We calculated the percentage of independent directors by dividing the number of independent directors by the total number of board members. We included the number of supervisors, who are usually the employee representatives, to enhance governance in the Chinese context. We controlled for CEO duality—whether or not the CEO serves as a board member. Because IPOs are an important vehicle for privatization of state-owned enterprises in transition economies (Aharony et al., 2000), we included a dummy variable to indicate whether the government holds more than 50% of equity in an IPO firm. In addition, we included a number of firm characteristics that are commonly controlled in prior studies on IPO performance/pricing, including firm size, firm profitability, firm risk, firm age, industry, and IPO year (e.g., Daily et al., 2003; Daily, Certo, & Dalton, 2005). We controlled for firm size by including total assets. Given then influence of firm profitability on IPO performance, we included ROA in the models. To control for firm risk, we included financial leverage, which is calculated by dividing total liabilities by stockholders' equity. Firm age was also included as a control variable given that in the early stage of Chinese stock market development, most IPO firms are generally more established than their counterparts in developed economies. Our analysis also includes a set of dummy variables to control for the primary industry (SIC level) of the IPO firm as well as the year of IPO for each firm. In the Appendix, we summarize the operationalization of the variables.

5 | RESULTS

We used OLS regression analysis to test the hypotheses. OLS regression analysis is appropriate given the cross-sectional nature of IPO data as well as the continuous dependent variable of the study (underpricing), and it is the most commonly used analytical approach in the study of IPO underpricing (e.g., Certo, Daily, & Dalton, 2001). We reported robust standard errors that are robust to departure from homoskedasticity.

Table 1 presents the descriptive statistics and correlations among variables used in this study. The main results of the regression analyses are reported in Table 2. Model 1 includes the control variables only. Model 2 adds the independent variable. Models 3, 4, and 5 add the three business group-related moderators. Model 6 is the full model including all control variables, the independent variable, and moderators.

Hypothesis 1 predicts a positive relationship between levels of product diversification and IPO underpricing. The coefficient for product diversification in Model 2 is positive and statistically significant ($p < .05$), which provides support for Hypothesis 1.

Models 3, 4, and 5 test the moderating effects of business group characteristics. The coefficient of the interaction between product diversification and central government-owned business group is negative and statistically significant ($p < .01$), supporting Hypothesis 2. This moderating effect is presented graphically in Figure 2. The coefficient of the interaction between product diversification and related party transactions of business group is positive and nonsignificant. Hypothesis 3 is not supported. The coefficient of the interaction between product diversification and business group prominence is negative and statistically significant ($p < .01$), supporting Hypothesis 4. Figure 3 plots this significant moderating effect.

6 | DISCUSSION AND CONCLUSION

The determinants of IPO underpricing have captured significant attention in various academic disciplines (Certo et al., 2009). Prior research has examined a variety of internal and external factors, such as board composition, legitimacy of top management team, ownership structure, VC affiliation, and underwriter reputation, that signal IPO firms' quality and prospects and influence investors' valuations of the stock (Bruton et al., 2010; Cohen & Dean, 2005; Filatotchev & Bishop, 2002). However, product diversification strategy and, relatedly, business group affiliation represent unexplored areas of IPO underpricing research. Drawing on the strategic actions arguments and the political connections arguments, this study explores the relationship between product diversification strategy—a key corporate strategy widely studied in extant strategic management research—and IPO underpricing in China. Specifically, we predicted that IPO firms' diversification strategies have a significant impact on underpricing.

In addition, we argued that such a relationship is moderated by characteristics of the business groups to which IPO firms affiliate. We used Chinese IPOs as our study sample, and the results of our study provide support to the hypotheses. Hence, our study demonstrates the importance of a firm's product diversification strategy in influencing IPO underpricing, as well as the relevance of an IPO firm's business group affiliation in moderating such a relationship. By examining the impact of product diversification strategy on IPO performance, our study extends the literature on product diversification to the study of IPO and provides a foundation for examining how other firm strategies may be viewed in IPO markets.

Moreover, the inclusion of characteristics of business groups as moderators indicates that product diversification strategy's influence on IPO underpricing is more complex than commonly expected, especially in transition economies where business groups are prevalent. Using political capital, relational capital, and reputational capital of business groups as the theoretical lenses, the joint examination of product diversification strategy and business group affiliation offers new insights to the IPO literature. Specifically, affiliations with business groups having certain attributes, such as political connection and market prominence, can mitigate the positive relationship between product diversification strategy and IPO underpricing. However, the internal transactions of a business group do not have a significant effect on the relationship between product diversification strategy and IPO underpricing. A potential explanation of this unexpected finding is

TABLE 1 Summary statistics and correlations

	Mean	Std. dev.	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1 Underpricing	1.12	0.79	1													
2 ROA	0.07	0.04	-0.08	1												
3 Firm size ^a	20.11	1.04	-0.26*	-0.35*	1											
4 Firm age	1.49	0.59	-0.08	-0.07	0.04	1										
5 Firm risk	1.68	3.01	-0.07	-0.21*	0.48*	0.05	1									
6 Duality	0.16	0.37	0.05	0.03	-0.08	-0.01	-0.04	1								
7 Independent director	0.19	0.17	-0.38*	0.12*	-0.05	0.43*	0.02	-0.09	1							
8 Supervisor	4.33	1.54	0.02	-0.09	0.20*	-0.06	0.16*	-0.10	-0.10*	1						
9 State-owned	0.43	0.50	0.04	-0.12*	0.26*	-0.27*	0.01	-0.15*	-0.07	0.17*	1					
10 IPO size ^a	101.43	122.84	-0.00	-0.07	0.64*	-0.11*	0.46*	0.04	-0.16*	0.18*	0.12*	1				
11 Diversification	0.87	0.45	-0.01	0.03	-0.03	-0.11*	-0.02	0.00	0.02	0.00	0.01	-0.04	1			
12 Central government	0.08	0.28	-0.09	-0.03	0.15*	-0.13*	-0.02	-0.06	0.05	0.06	0.16*	0.17*	0.13*	1		
13 Related transaction	0.29	1.63	-0.07	-0.06	0.19*	0.08	0.02	-0.05	0.12*	-0.04	0.03	0.07	0.07	0.25*	1	
14 Top 500	0.11	0.31	-0.11*	-0.03	0.19*	-0.03	-0.03	-0.04	0.10*	0.03	0.12*	0.14*	0.05	0.63*	0.24*	1

Note. n = 409. *p < .05.

^a Scaled by 1,000.

TABLE 2 Results of OLS regression analysis of IPO underpricing

Independent variables	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
ROA	-2.923*** (0.771)	-2.950*** (0.771)	-3.139*** (0.776)	-2.971*** (0.781)	-3.047*** (0.778)	-3.140*** (0.779)
Firm size ^a	-0.438*** (0.049)	-0.441*** (0.049)	-0.444*** (0.049)	-0.460*** (0.049)	-0.452*** (0.049)	-0.468*** (0.049)
Firm age	0.175** (0.067)	0.189** (0.067)	0.192** (0.066)	0.185** (0.066)	0.176** (0.066)	0.177** (0.066)
Firm risk	0.006 (0.009)	0.004 (0.009)	0.002 (0.009)	0.006 (0.009)	0.003 (0.009)	0.003 (0.009)
Duality	-0.006 (0.100)	-0.007 (0.100)	-0.009 (0.098)	-0.002 (0.098)	-0.018 (0.098)	-0.014 (0.097)
Independent director	-0.060 (0.417)	0.026 (0.417)	0.005 (0.417)	0.040 (0.421)	-0.057 (0.422)	-0.093 (0.401)
Supervisor	0.011 (0.020)	0.011 (0.020)	0.015 (0.021)	0.015 (0.021)	0.013 (0.021)	0.019 (0.021)
State-owned	0.227** (0.076)	0.231** (0.076)	0.237*** (0.075)	0.234** (0.076)	0.232** (0.077)	0.248** (0.075)
IPO size ^b	0.001** (0.000)	0.001** (0.000)	0.002** (0.000)	0.001** (0.001)	0.002** (0.000)	0.002*** (0.001)
Diversification		0.158* (0.076)	0.198** (0.076)	0.152* (0.079)	0.201** (0.076)	0.222** (0.082)
Central government			0.691** (0.257)			0.498* (0.312)
Central government × diversification			-0.681** (0.223)			-0.518* (0.285)
Related transaction				0.041* (0.019)		0.034* (0.019)
Related transaction × diversification				0.003 (0.056)		0.054 (0.049)
Top 500					0.459** (0.189)	0.368* (0.197)
Top 500 × diversification					-0.482** (0.185)	-0.395* (0.214)
IPO year dummies	Included	Included	Included	Included	Included	Included
Industry dummies	Included	Included	Included	Included	Included	Included
Constant	9.512*** (1.020)	9.369*** (1.020)	9.340*** (1.014)	9.695*** (1.012)	9.545*** (1.008)	9.727*** (1.015)
R ²	0.388	0.395	0.401	0.401	0.400	0.410
F	13.80***	14.30***	13.58***	14.02***	13.71***	12.64***

Note. n = 409. Entries represent coefficients and robust standard errors are in parentheses. Significant tests are two-tailed for control variables and one-tailed for hypothesized variables.

+p < .10, *p < .05, **p < .01, ***p < .001.

^a Scaled by 1,000.

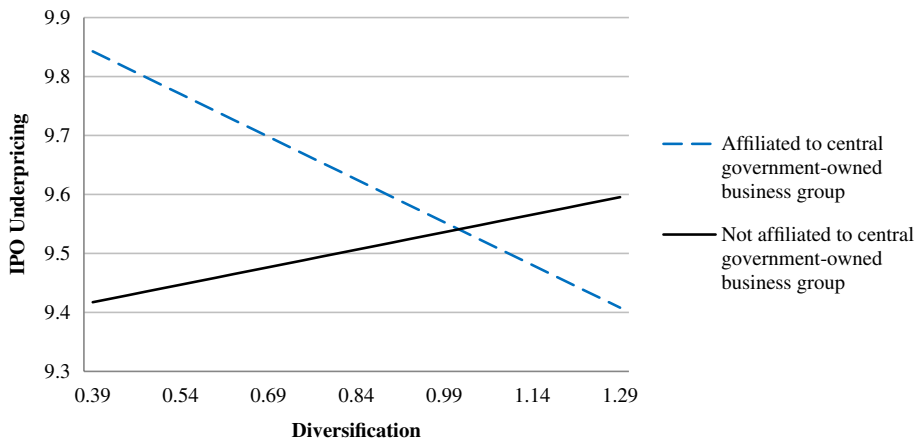


FIGURE 2 Moderating effects of business group political capital

that business groups relying heavily on internal transactions may sacrifice individual member firms' interest for the sake of the overall group goals, which does not help reduce the *ex ante* uncertainty perceived by investors. Future research examining the effects of business groups will want to take note that different business group attributes may influence strategic actions and outcomes heterogeneously. Overall, treating business group affiliation beyond a dummy variable allows us to have a more fine-grained understanding of business group affiliation than previous studies that tend to treat such affiliation as a dummy variable. Therefore, our study's focus on transition economies allows us to generate important knowledge about product diversification strategy, business group affiliation, and IPO underpricing.

In addition, our findings help increase investors' valuations of an IPO firm and have important practical implications for the initial shareholders who constitute the firms' pre-IPO owners. A better understanding of the determinants of IPO pricing may help founders and other initial shareholders reduce "money left on the table" and retain more wealth for post-IPO growth and development. Particularly, wealth retainment is critically meaningful for Chinese IPO firms given that IPO is the primary vehicle for privatization of state-owned enterprises and deemed as their starting point of transformation into modern enterprises to be competitive in the market economy. However, due to the lack of transparency in transition economies, investors face high levels of *ex ante* uncertainty and, thus, may expect IPO firms to leave more money on the table to compensate the high investment risks they have to bear. To ensure enough subscription, IPO firms usually need to discount their offerings to compensate investors for

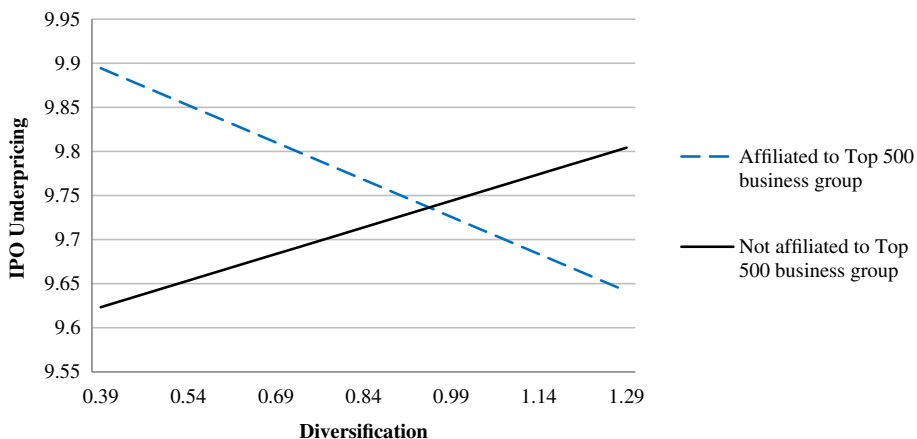


FIGURE 3 Moderating effects of business group reputational capital

uncertainty. In fact, the extent of IPO underpricing in transition economies is much higher than that in developed economies. As such, it is even more important for IPO firms in China to understand what factors may help reduce investor uncertainty so as to decrease the money left on the table. The findings of this study show that seeking social connections, especially political connections, can be a useful means to improve IPO performance in China.

Prior research on IPO has generally focused on one firm attribute in each study, such as ownership composition (Bruton, Chahine, & Filatotchev, 2009), shareholder characteristics (Filatotchev & Bishop, 2002), and top management team legitimacy (Cohen & Dean, 2005). However, investors are unlikely to make decisions based solely on one piece of information. Rather, they collect comprehensive firm information for precise assessments and valuations. Taking into consideration several related firm attributes, and in our case product diversification and business group affiliation, simultaneously will contribute to a better understanding of investors' decision making. Also, the existing research on IPO underpricing may benefit from exploring the impact of different institutional elements that are unique for different countries (business groups) that may enhance or reduce the impact of an IPO firm's main corporate strategy (product diversification) on stock valuation. Future IPO research may find it fruitful to continue exploring conditions where a combination of information may affect IPO underpricing.

Extant studies on IPOs seldom emphasize the strategies of IPO firms (Certo et al., 2009). The strategy-performance relationship has been a key area of inquiry in the strategy literature (Hoskisson & Hitt, 1990). A firm's strategy represents its value proposition. A solid and feasible value proposition is likely to reduce the perceived uncertainties and increase investors' confidence in the firm's growth potential. The focus on product diversification strategy is of value when studying relatively large and established IPO firms (e.g., those in China). However, IPO firms in developed economies are primarily successful new ventures with narrow scopes. Thus, product diversification strategy may not be as good a piece of information in IPO markets in developed economies as in China. Strategy researchers may find it worthwhile to examine the performance impact of other strategies of IPO firms, such as internationalization (e.g., entry mode, location choice) and social responsibility (e.g., environment strategy, public relations), as well as specific strategic actions such as merger and acquisition, organizational restructuring, and introduction of new products.

In addition, the pursuit of product diversification strategy may be endogenously determined. Like other corporate strategies, product diversification strategy is likely a managerial choice rather than randomly assigned (Masten, Meehan, & Snyder, 1991). Some unobservable factors may systematically influence executive decisions to diversify. That is, diversifying firms often share some common unobservable attributes that distinguish them from focused firms (Campa & Kedia, 2002). Therefore, identifying and including both theoretically and empirically relevant instruments would be necessary in the future study of diversification strategy.

In conclusion, by exploring the effects of IPO firms' product diversification on market response, this study extends the research on the strategy-performance relationship from a corporate strategy perspective and demonstrates the important role of corporate strategies in the IPO process. The ability to raise funds is critical to the long-term success of a firm. Even in transition economies such as China where transfer of wealth to the first-day investors may not appear to be a big concern of initial shareholders (often the state), from the perspective of managers of the newly privatized firms, the large amounts of wealth they fail to retain weaken their capacity and flexibility to pursue growth strategies in the long run. Thus studies on factors influencing IPO underpricing are of great research interest and importance. Future research may explore further the role of firm strategies in the IPO process in other contexts, especially in market environments with unique institutional features.

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APPENDIX: VARIABLE OPERATIONALIZATION

Variables	Operationalization
<i>Dependent variable</i>	
Underpricing	The percentage difference between the offer price and the closing price on the first day of trading
<i>Independent variables</i>	
Diversification	The imputed weighted diversification measure: $\sum P_i \times d_{ij}$
Central government	A dummy variable that equals 1 if the business group is affiliated to central government
Related transaction	The total number of intragroup transactions taking place in the 2 years before the IPO
Top 500	A dummy variable that equals 1 if the business group is among the Top 500 Chinese Enterprises

Variables	Operationalization
<i>Control variables</i>	
ROA	Ratio of earnings to total assets
Firm size	Natural logarithm of total assets
Firm age	The number of years between the firm's founding year and its IPO year
Firm risk	Ratio of the total liabilities to stockholders' equity
Duality	A dummy variable that equals 1 if the CEO serves as a board member
Independent director	Ratio of the number of independent directors to the total number of board members
Supervisor	The number of supervisors
State-owned	A dummy variable that equals 1 if government holds more than 50% of equity in an IPO firm
IPO size	The total shares issued in the IPO