

## **The Role of Institutional Development in the Prevalence and Performance of Entrepreneur and Family-Controlled Firms**

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## **The Role of Institutional Development in the Prevalence and Performance of Entrepreneur- and Family-Controlled Firms**

### **Abstract**

We investigate the role played by institutional development in the prevalence and performance of firms that are owned and/or managed by entrepreneurs or their families, while controlling for the potential effect of cultural norms. China provides a good research lab since it combines great heterogeneity in institutional development across its provinces with homogeneity in cultural norms, law, and regulation. Using hand-collected data from publicly listed Chinese firms, we find that, when institutional efficiency is high, entrepreneur- and family-controlled firms are more prevalent and exhibit superior performance than non-family firms. We find that the positive effects of family ownership and the negative effects of family control in excess of ownership that have been documented in earlier studies around the world are only significant in high-efficiency regions, and only for family-controlled firms proper, but not for entrepreneur-controlled firms. Institutional development also helps reconcile the divergence of results across prior studies regarding the performance impact of founders and their families as managers and not just owners. When institutional efficiency is high, the sign of the management effect is entirely contingent of whether the Chairman or CEO is the entrepreneur him/herself (positive) or a family member (negative); when institutional efficiency is low, the effect is positive in both cases, and more strongly so in the case of a family member serving as CEO.

**Keywords:** Family-Controlled firms; Entrepreneur-Controlled firms, Ownership; Management; Performance; Institutional development; China

A growing body of research shows that family firms dominate economic activity around the world, and that they are significantly different from other companies in their behavior, structural characteristics, and performance (Morck et al. (2005)). Nevertheless, the extant literature has documented significant geographical variation in the prevalence and performance of family firms (see Villalonga and Amit (2013) for a review). For instance, La Porta et al. (1999) report that the fraction of family firms among the 20 largest firms in 27 countries averages 35% but ranges from 10% to 100%. Villalonga and Amit (2006) show that the value of family firms relative to non-family firms in the United States is contingent on how three elements enter the definition of a family firm: family ownership per se is positively associated to firm value, as is family management by a founder-CEO; however, family control in excess of ownership and family management by descendant-CEOs are negatively related to value. Barontini and Caprio (2006) find similar effects for family ownership, control, and founder management in Europe, yet they find no significant performance differences between descendant-led firms and non-family firms.

Several explanations to this variation are plausible. Burkart et al.'s (2003) theoretical model of family succession suggests that it is attributable to the varying degrees of investor protection around the world: the lower the legal protection of outside investors, the higher the need for a large (family) shareholder that can mitigate the agency problem between owners and managers, but also the higher the ability of the large shareholder to expropriate minority investors. As a result, the model predicts that family firms will be more prevalent in countries with low investor protection, which is consistent with the evidence in La Porta et al. (1999). The theory also suggests that the variation in family firms' performance may be related to investor protection, but it is ambivalent about the sign of the relationship: whether family firms have

higher or lower value in high- or low- investor protection countries (relative to non-family firms) will depend on which of the two agency problems dominates—the one between owners and managers or the one between large and small investors. Indeed, the evidence on this point remains inconclusive; La Porta et al. (2002) find higher values for firms in countries with better investor protection and in firms with higher cash-flow ownership by the controlling shareholder, but find no significant interaction effect between the two factors.

A second explanation is suggested by Khanna and Palepu's (2000) arguments about diversified business groups in emerging markets (which are usually family-controlled): when the institutions that contribute to the efficiency of input and output markets are under-developed, family firms and business groups can act as substitute markets for capital and labor and thus contribute to mitigate market failures caused by agency and information problems. Families can also add value to their firms in product markets, through their business and political connections or reputation. While fundamentally different from the legal investor protection argument, this “internal markets” explanation shares with it the prediction that family firms should be more prevalent in less developed markets. It does, however, offer a more definite prediction about the sign of the moderating effect of institutional development on the value of family firms: family firms should have higher value relative to non-family firms in less developed environments.

A third explanation to the variation in the prevalence and performance of family firms is that it is the outcome of cultural norms such as family values or trust that are deeply embedded in social and economic behaviors in each country (Weber (1904), Banfield (1958), Fukuyama (1995)). Some macroeconomic evidence is consistent with this view: Morck et al. (2000) show that countries in which inherited wealth is large relative to their gross domestic product (GDP) have slower growth than similarly developed countries where entrepreneurs' self-made wealth is

large relative to GDP. Bertrand and Schoar (2006) show that countries with stronger family values such as children's obedience to parents or parental duties to their children have lower economic performance in terms of GDP per capita. As they acknowledge, however, family values may be the consequence rather than the cause of economic development. Moreover, because economic and institutional development are highly correlated, it is difficult to separate the cultural explanation from the central tenet, common to the other two explanations, that the variation in the prevalence and performance of family firms across countries results from differences in institutional and market development.

In this paper we apply Villalonga and Amit's (2006, 2009) ownership-control-management decomposition approach to a sample of publicly listed Chinese firms in order to tease these explanations apart. China provides a good research laboratory for this purpose, since there is great heterogeneity in the degree of institutional development of its provinces and regions, and at the same time great homogeneity in cultural norms, with strong emphasis on family values (Wong (1985), Allen et al. (2005)). We are thus able to investigate the role played by institutional development in the prevalence and value of family firms, while controlling for the potential effect of culture. Moreover, by decomposing family firms into their ownership, control, and management elements, we are able to test the specific predictions of the investor protection and internal markets explanations.

The use of Chinese data brings about an additional advantage for the study of family firms, which is that it allows us to examine these firms very soon after they become family-owned or controlled. This is important because many of the mechanisms used by families around the world to enhance their control over their firms are set up very early on and condition those firms' future ownership and control structure, which becomes very path-dependent. Yet in most

economies, analyzing firms since they become family firms de facto means analyzing firms since their inception, since there are relatively few instances in which a family buys out a widely held firm. Thus, studying family firms at the time their control structures are set up generally means analyzing an entrepreneurial setting, which may make it difficult to extrapolate comparisons between family and non-family firms to mature companies. In China, however, the massive privatization of SOEs has created a shock in the economy that facilitates this comparison.<sup>1</sup> Moreover, despite the recency of this shock and the development of the private sector in China, which may raise a concern that “family firms” there may really be controlled by an entrepreneur alone and not an actual family, our data show that this is only the case for a third of our sample; the other two thirds have the family or families of the founders or entrepreneurs involved in their firms ownership, control, and/or management. In this sense, our sample is thus quite comparable, and hence just as suitable for the study of families’ role in business, than those used in prior research about family firms in other parts of the world.<sup>2</sup>

An important difference between China and other parts of the world is that most non-family firms in China are state-owned—93% in 2007, as we show in Tables I and V, or even 96% if one considers collective organizations as a form of state ownership. Moreover, as we also show in those tables, most of the remaining non-family firms also have a controlling shareholder of a different nature, such as universities or concentrated foreign owners.

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<sup>1</sup> We do not claim that the shock is exogenous, as in a natural experiment, since neither the State’s decisions of which firms to privatize and when, nor the individual of family’s decision to take control of those firms are presumably random.

<sup>2</sup> For instance, 32% of the family firms in Villalonga and Amit (2006) sample (Fortune 500 firms) are in their first generation. Barontini and Caprio (2006) show a similar proportion (31%) for their sample of 675 European publicly listed family firms. When smaller firms are included, as in Villalonga and Amit (2009), who use a random sample of 2,100 US firms, the proportion is in fact much higher (72%). Furthermore, Miller et al. (2007) show that about two thirds of the first-generation family firms in their sample of 900 U.S. firms involve no other first-generation member beyond the “lone founder.”

For our research purposes, this feature of the data works as a double-edged sword. On the one hand, it makes our results more difficult to interpret and compare to those in earlier studies, in which non-family firms are typically widely held private sector corporations. On the other hand, it allows us to shed some light onto a fundamental question that remains unanswered in all of these papers; namely, whether the performance effects found in these studies are truly due to entrepreneurs and/or families or to ownership concentration in itself—regardless of the identity of controlling shareholders. Teasing apart these two effects, and the comparison of entrepreneur and family-controlled firms against state-owned firms in particular, has become even more relevant in recent years given that the global economic crisis of 2008–2009 has led to a worldwide increase in the role of governments in the economy.

We find that entrepreneur- and family-controlled firms are relatively more prevalent and have higher family ownership stakes in the more developed provinces. They also have the entrepreneur or a family member in the role of CEO and/or Chairman of the board more frequently than do entrepreneur- and family-controlled firms in the less developed parts of the country. These results may seem at odds with the investor protection and internal markets theories' predictions about the prevalence of entrepreneur- and family-controlled firms. They are, however, consistent with the findings in La Porta et al. (1999) that while family firms are more prevalent in low investor protection countries than they are in high investor protection countries, the same is true, and the difference even more pronounced, for state-controlled firms. On the other hand, we find that entrepreneurs and their families make greater use of control enhancing mechanisms in the less developed regions, just as the investor protection theory would predict.

We also find that ownership by entrepreneurs and/or their families significantly increases firm value as well as profitability, even after controlling for the endogeneity of entrepreneur or family ownership—a finding that is consistent with most of the earlier literature. Our empirical strategy however allows us to dig deeper than earlier studies into the drivers of this result, in at least three ways. First, in answer to our central research question, we find that the effect is entirely attributable to regions or provinces with high institutional efficiency. This finding is again at odds with the predictions of the internal markets view, but is not inconsistent with the investor protection view. It is also consistent with the evidence that entrepreneur- and family-controlled firms are more prevalent in high-efficiency regions. Whether it is the efficiency of the environment that attracts these firms' controlling owners and helps them thrive, or if these firms' success fosters the institutional development of the regions where they are present, or if both effects are at play (since they are mutually reinforcing) is a macro-level causality issue that is beyond the scope of this paper, but merits further investigation.

Second, we find that the result is largely driven by families rather than by lone entrepreneurs. The growing research field of family business has highlighted both the benefit and costs of family involvement (see Melin et al. (2014) for a collection of review papers on a variety of family business aspects). Our findings suggest that family-controlled firms in China are able to successfully harness the power of families so as to render positive the net effect of their involvement as owners.

Third, because the control group of non-family firms in China is largely composed of firms with controlling owners (most commonly the State), our results cannot be attributed to ownership structure (i.e., concentration) per se. Rather, they highlight the importance of controlling owners' identity for firm performance.



We also find that entrepreneur or family control in excess of ownership, which in China can be achieved through the use of pyramidal control structures as well as through disproportionate board representation, significantly decreases firm value. The significance of the effect is again entirely driven by the regions or provinces with high institutional efficiency and by family-controlled firms and not by entrepreneur-controlled firms. As with the ownership result, the primary finding is consistent with those in earlier studies (Villalonga and Amit (2006), Amit and Villalonga (2013)), but the evidence we present about the drivers of this result represent a new and unique contribution of this paper. In particular, our finding that the high institutional efficiency regions are driving the negative impact of excess family control on firm value, while not inconsistent with the internal markets view, is particularly consistent with the investor protection logic that the appropriation of private benefits that voting or board control in excess of ownership affords controlling families is more heavily penalized by stock markets in high-efficiency settings.

Finally, we find that institutional development plays a critical role in the relation between entrepreneur or family management and firm performance. When institutional efficiency is high, the sign of the effect is entirely contingent of whether the Chairman or CEO is the entrepreneur him/herself (positive) or a family member (negative)—similar to the results found by Villalonga and Amit (2006) for the United States. When institutional efficiency is low, the effect is positive in both cases, and in fact more strongly so for family-managed firms than for entrepreneur-managed firms. These findings provide empirical support for the internal markets view, which suggests that family firms may be a valuable source of management talent when the lack of institutional development makes the external labor market inefficient or in short supply. They

also help reconcile the divergence of results across prior studies regarding the performance impact of entrepreneurs and their families as managers.

Our results are robust to alternative measures of family ownership, control, management, firm performance, and institutional efficiency. The estimated effects on firm value are also robust to controlling for the endogeneity of family firm status. Altogether, our results show that institutional development, net of the effect of cultural differences, plays a critical role in the prevalence and performance of entrepreneur- and family-controlled firms. They also suggest a need for a more comprehensive theory of corporate ownership that evaluates and compares the contribution of different types of controlling owners (entrepreneurs, families, the State, banks, etc.) in their various roles (owners and/or managers), rather than comparing just one type to the common benchmark of widely held firms.

The rest of the paper is organized as follows. Section I provides background information about institutional development and family firms in China. Section II describes our data and variables. Sections III and IV present our results about the role of institutional development in the prevalence and performance, respectively, of entrepreneur- and family-controlled firms. In Section V we analyze whether our results are driven by the state-owned vs. private sector distinction rather than by the difference between family and non-family firms. Section VI concludes.

## **I. Background: Institutional Development and Family Firms in China**

Ever since China began its transition from a central planning system into a market economy in 1978, it has experienced unprecedented levels of growth: with average annual growth at around 9% and GDP quadrupled, China is now the world's largest and fastest-growing emerging economy. Two important features of this transition are of particular interest for our

research purposes: (1) the increasing disparity across regions in their degree of institutional development, and (2) the shift of the bulk of economic activity from the state-owned to the private sector.

#### *A. Regional Disparity in China*

The rapid growth of the coastal regions in China over the past 25 years has widened the regional disparity within the country (Jian et al. (1996)). Using the Gini coefficient and generalized entropy (GE) measures of inequality, Kanbur and Zhang (2005) show that inland-coastal disparity in income, health, and education have risen sharply and steadily since 1984. The World Bank's (2006) survey of the investment climate in 120 Chinese cities reports that the average per-capita GDP in Southeast China is more than 50 percent above that in the Northeast, and 150 percent above the averages for Central and Southwest China. Similarly, per-capita foreign direct investment (FDI) in the Southeastern provinces is 130 percent above per capita FDI for the Northeast, more than 7 times the average for Central China, and more than 25 times the average for Western China.

The disparity is even more remarkable given that business law, regulation, and culture are basically the same throughout China. Unlike the U.S., where corporate law differs across states, China has a centralized legal system where corporate law and security regulations are the same across all provinces. In their analysis of the law, finance, and economic growth in China, Allen et al. (2005) note that “despite the almost nonexistence of formal governance mechanisms, alternative mechanisms have been remarkably effective in the private sector. Perhaps the most important of these is the role of reputation and relationships (Greif (1989, 1993)). Without a dominant religion, the most critical force shaping China's social values and institutions is the widely held set of beliefs related to Confucius; these beliefs define family and social orders and

trust, and are different from western beliefs on the rule of law.” The cultural homogeneity across the country is reinforced by the fact that more than 90% of Chinese people are from the Han ethnic group, which has shared the same social norms, culture, language, and traditions for more than 5000 years.<sup>3</sup> Such a predominance of a single ethnic group in one nation is the highest among large countries all over the world. Given these commonalities in the Chinese culture and legal system, both Allen et al. (2005) and the World Bank study conclude that inter-regional differences in development mainly reflect local government efforts (or lack thereof) to support and participate in the growth of private-sector firms. Fan and Wang (2006) reach a similar conclusion in their survey of the institutional environment of the different Chinese provinces.

It is precisely this stark contrast between the heterogeneity in institutional and economic development and the homogeneity in law and culture across the country that makes China an ideal setting to analyze our research question about the role of institutional development in the prevalence and performance of entrepreneur- and family-controlled firms.

### *B. The Development of the Chinese Private Sector*

Regional disparity aside, the transition in China has been marked by the progressive decline in large state-owned enterprises (SOEs) and corresponding expansion of the private sector. Anderson et al. (2003) show that the contribution of SOEs to GDP as measured by output percentage dropped from 77% in 1978 to just over 28% in 1999, while the relative output of privately-owned enterprises rose from zero to 18% over the same period, and collectively-owned firms accounted for 35% in 1999.<sup>4</sup> The All-China Federation of Industry and Commerce survey

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<sup>3</sup> Most minority ethnic groups in China, such as the Hui, Zhuang, Manchu, and Mongolian (which are the biggest ones), use Mandarin as their primary language and hence are strongly influenced by the Han culture. Moreover, although there are various dialects in China, the ideographic nature of the Chinese language allows for the separation of speaking and writing and therefore the dialects only differ phonetically. As a result, the written version of Chinese reinforces the cultural homogeneity across the country.

<sup>4</sup> Collectively-owned firms in China are similar to cooperatives in Western economies but often started by local town governments. They can be seen as a hybrid between SOEs and private firms.

reports that the number of privately-owned and run firms with revenues above 120 million yuan (\$14.5 million) rose from 1,582 in 2002 to 2,268 in 2004.<sup>5</sup> In its 2005 survey on the private sector in China, Hong Kong based brokerage CLSA reported that the private sector in China was by then responsible for about three-quarters of economic output and employment.<sup>6</sup> Allen et al. (2005) show that the private sector grows much faster than the other and provides most of the economy's growth. In late 2009, the private sector represented 95% of all companies in China and contributed over 70% of all profits generated by Chinese companies.<sup>7</sup>

Part of the shift in balance between SOEs and private-sector firms has taken place through share-issue privatization in Chinese stock markets, the Shanghai and Shenzhen stock exchanges, which have gained considerable size and momentum since their establishment in 1990. On August 9, 2007, the total market capitalization for the first time exceeded the nation's previous-year GDP of 21 trillion yuan or about \$2.8 trillion.<sup>8</sup> As stated by the Chinese government, the main purposes of the stock market are to raise much-needed capital for SOEs, and to facilitate SOEs' restructuring as corporations. However, most privatization processes have been partial, since the government still retains majority ownership or control in most listed companies (Sun and Tong (2003), Allen et al. (2005)).

Most of the remaining (non-state-controlled) listed companies are controlled by entrepreneurs and/or their families, and the state has either withdrawn from the ownership group or never held any interest. Table I shows that, as of 2007, 896 (62%) of 1,453 publicly listed firms were state-controlled and 491 (34%) were entrepreneur- or family-controlled firms. Of

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<sup>5</sup> "Survey confirms China's reliance on private companies to fuel growth," *Financial Times*, August 26, 2004.

<sup>6</sup> "Private sector 'in control of China economy'," *Financial Times*, September 13, 2005.

<sup>7</sup> Speech given by the head of the National Statistic Bureau of China at the Annual Forum of Chinese Economists on November 22, 2009.

<sup>8</sup> "Mainland stocks become world giants after defying global rout," *South China Morning Post*, August 15, 2007.

these 491 firms, 201 were privatized from former SOEs, 32 changed ownership from a collective organization to an individual or family, and 258 were founded *de novo* within the private sector (see Table IV and its discussion later in the paper). These figures suggest that the development of the Chinese private sector is not just the outcome of the privatization of SOEs. Rather, the privatization process has been complemented to a significant degree by entrepreneurial activity in China.

The growth of firms that have been born in the private sector is particularly remarkable given the Chinese stock exchanges' official mandate to serve SOEs, which has translated into a large bias in equity issuance against non-SOEs. In our sample, for instance, 187 (93%) of the 201 entrepreneur- or family-controlled firms that were formerly state-owned had their IPO before they were privatized.<sup>9</sup> The first entrepreneur- or family-controlled listed firm appeared in 1992, but until 1997, the number of these firms was minimal compared with the rapid increase in market capitalization and the total number of listed firms. In 1997, less than six percent of listed firms were entrepreneur- or family-controlled, despite the increasing importance of non-SOEs in the Chinese economy. However, 1998 saw the start of a boom in family firm listings. The trend was further boosted by the establishment of the Shenzhen second board market in 2004, and by the opening of the Chinext market in October 2009, which is designed to be the NASDAQ-style exchange for startup and innovative companies.

### *C. Family Ownership, Control, and Management in China*

Starting with La Porta et al. (1999), the literature on international corporate ownership has documented that most firms around the world are controlled by large shareholders with the aid of mechanisms such as dual-class stock and pyramids that enable them to enhance their

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<sup>9</sup> In contrast, 14 (44%) of the 32 family firms that were previously collectively-owned firms had their IPO before the family took control of the company

control over and above their economic interest. Claessens et al. (2000) show that the wedge between share ownership and voting control in East Asia is particularly pronounced in family firms. Yet it is worth noting that their study does not include China. Unlike other Asian countries, China does not allow the issuance of dual-class stock with different voting rights.<sup>10</sup> However, pyramid structures are widespread among both SOEs and entrepreneur- or family-controlled firms, as suggested by Table I and discussed later in the paper. Fan et al. (2007b) analyze the pyramid structures of Chinese listed SOEs and conclude that the government uses them to decentralize decision rights to firm management without selling off its ownership.

In addition, Chinese entrepreneurs and family firm owners can control a fraction of the board that exceeds their ownership and even voting stake through provisions in the firm's bylaws. Villalonga and Amit (2009) investigate this “disproportionate board representation” in their sample and find that it is the most common form of control enhancement in the United States, even more so than dual-class stock.

Figure 1 shows an example of a Chinese family firm, CityChamp Dartong Co. Ltd. (GuanChengDaTong, ticker 600067). Following Villalonga and Amit (2009), we decompose the wedge between the family's ownership stake and its voting and board control into its various elements to determine the contribution of each control-enhancing mechanism at play.

CityChamp Dartong is controlled by the Han family, who owns a 23.07% equity stake through multiple control chains, as depicted in the Figure. The company's founder, Han Guolong, indirectly owns 4.75% of the listed company shares through a four-tier pyramid. He

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<sup>10</sup> In China there are multiple classes of common stock that are issued for different types of investors: Class A and Class B shares, which are tradable in the Shanghai or Shenzhen stock exchanges among Chinese and foreign investors, respectively; Class H shares, which trade in the Hong Kong stock exchange and can be held by anyone; and non-tradable shares that are held by the state, the firm's founders, foreign owners, employees or legal entities during the process through which firms are converted into limited liability corporations but before they are listed (Allen et al., 2005).

personally owns 80% of XinJing International, which holds 36.16% of China HaiDian Holdings Limited. HaiDian Holdings's, in turn, owns 100% of Starlex, which is the second largest shareholder in CityChamp Dartong with a 16.39% ownership stake. Han Guolong's ownership stake in CityChamp Dartong is the product of all these stakes along the chain of control:  $80\% \times 36.16\% \times 100\% \times 16.39\% = 4.75\%$ .

Meanwhile, Xue Lixi, who is Han Guolong's daughter-in-law, indirectly owns another 18.32% of the listed company shares through FuJian FengRong Investment, in which she personally owns a 68.5% equity stake. Since FuJian FengRong Investment owns 26.74% in CityChamp Dartong, Xue Lixi's indirect ownership in the listed company is:  $68.5\% \times 26.74\% = 18.32\%$ . Therefore, the Han family's combined ownership in the listed company is  $4.75\% + 18.32\% = 23.07\%$ .

The family's voting control of CityChamp Dartong is 43.13%, the sum of the weakest links in each control chain (16.39% and 26.74%), which is 20.1%, or 1.9 times, higher than the family's ownership stake. The family's control of the company is further enhanced through their presence on the board of directors: the family holds four out of nine board seats, or 44.4%, which is slightly above the 43.23% voting control: Han Guolong, the founder, is the Chairman, and his son Han XiaoHuang is the associate Chairman. His other son, Han XiaoJie, and Han XiaoJie's wife Xue Lixi occupy the other two board seats. In addition, Han XiaoJie is the CEO of the company.

In this paper, we perform a similar analysis of each entrepreneur- or family-controlled firm in our sample to arrive at separate measures of (1) the entrepreneur or family's ownership stake; (2) the extent to which the entrepreneur or family's voting control exceeds its ownership stake; (3) the extent to which the entrepreneur or family's board control exceeds its voting



control; and (4) the entrepreneur or a family member's presence in management in the role of CEO and/or Chairman of the Board. We then investigate how each of these measures impact firm value and profitability in different institutional settings.

## **II. Data and Variables**

### *A. Sample and Data*

Our sample consists of 1,453 A-share companies listed on the Chinese stock market in 2007, for which the ownership and financial data needed for our empirical analyses are available.<sup>11</sup> We note that this is not a random sample of the total population of firms in China; which also includes non-listed firms. However, it is the best and largest sample for which we can obtain reliable ownership data, which are critical to our research objective. Since 2007, listed companies are required by the China Security Regulatory Commission (the stock market's regulatory authority) to disclose information about their ultimate controllers. Prior to the enactment of this rule, ultimate controllers were difficult to identify due to lack of transparency. We thus take advantage of this new disclosure requirement and manually collect the following information from our sample companies' 2007 annual reports: (1) the identity and immediate ownership percentage of the two largest shareholders; (2) the identity, control mechanism, and ownership stake of the ultimate controller; and (3) the ultimate ownership stake of corporate insiders (officers and directors). Financial data for our sample firms are obtained from the Wind Data Company, the leading data provider in China, which collects financial information from company annual reports as well as from the Chinese stock exchanges.

It is perhaps worth noting that many Chinese firms are affiliated with business groups, as is often the case in other countries. In these situations, the group's controlling owner (be it the

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<sup>11</sup> See footnote 10 above for a description of the different types of shares in Chinese listed companies.

family, the state, or another owner) may rationally seek to maximize the value of the whole group, not just the publicly traded firm. We see this as part of the divergence of objectives between controlling shareholders and minority shareholders (the second type of agency problem described before), which is of critical interest to us, and which as such should be reflected in the value of the publicly listed firm. We therefore follow earlier studies of corporate ownership (La Porta et al., 1999, Claessens et al., 2000, etc.) whose main interest, like ours, is in the perspective of shareholders of the firm itself, including its public shareholders, and track the identity of the ultimate controllers of the group to which the firm belongs but keep the empirical analyses at the level of the firm that is publicly listed.

We define entrepreneur and family-controlled firms as those whose largest ownership stake is ultimately held by an individual, a family, or a team of co-founders or their families. More specifically, entrepreneur-controlled firms are those whose largest ownership stake can be traced back to its founder(s), if the firm was founded *de novo* within the private sector, or if the firm was previously state-owned, to the entrepreneur(s) who took control of it when it was privatized. When talking about our sample or results in this paper, we use the term “family-controlled” firms in a more restrictive sense than the generic “family firms” commonly used in the literature (and in the introduction to this paper) to refer to those firms in which at least one additional member of the entrepreneur or founder’s family is involved in the firm’s ownership and/or management. We use the term “non-family firms” to refer to all those firms that are neither entrepreneur-controlled nor family-controlled.

Of the 1,453 companies in our sample, 491 are either entrepreneur-controlled (167 firms) or family-controlled (324) firms and 962 are non-family firms. In 70 of the 491 firms (24 out of the 167 entrepreneur-controlled firms and 46 out of the 324 family-controlled firms) there are

multiple entrepreneurs or co-founders and/or their families present as owners and/or managers along with the founder/entrepreneur or family that is the largest shareholder and thus treated as the primary one in this paper.<sup>12</sup> Among the 962 non-family firms, 896 are ultimately controlled by the state (and referred to as SOEs in the remainder of the paper), and 66 are neither entrepreneur- or family- nor state-controlled. Included in this last category of owners are, in order of their prevalence, collective organizations, universities, foreign owners, and small Chinese investors.

Table I reports the average ownership and voting control stakes of different controlling owner types. On average, entrepreneurs and their families hold 26% of the shares and control 35% of the votes in the firms where they act as controlling shareholders. The average 26% family ownership in our sample is in line with what other studies of family firms in China have reported (Zhou et al. (2012), Xu et al. (2013)). As noted above, the ownership-control wedge of 9% (or 1.35 times ownership) is entirely attributable to the use of pyramids. The average holdings are larger for family-controlled firms (27% share ownership; 36% voting control) than they are for entrepreneur-controlled firms (23% share ownership, 32% voting control), and the same is true for median holdings. While this pattern may seem counterintuitive, it reflects the fact that some of the families may have been present in their firm's ownership and/or management since the beginning, as opposed to having inherited their positions from a deceased entrepreneur (which might lead to a dilution of the family's ownership stake). As might be expected, the average and median ownership and control stakes of the primary entrepreneur or family are higher when there is a single entrepreneur or family than when control is shared with other entrepreneurs / cofounders or their families.

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<sup>12</sup> Following earlier studies (e.g. Villalonga and Amit, 2006), in those cases we treat co-founding families as separate from the primary one so that the ownership and control stakes reflect only the holdings of the primary entrepreneur or family.

The state, in turn, holds an average of 36% of the shares and 40% of the votes in the listed companies that remain under its control. The 4% wedge (or 1.1 times ownership) indicates that the Chinese government also resorts to the use of pyramids to retain control, as suggested by Fan et al. (2007). Other types of owners also control more votes than the shares they hold (27% vs. 21%). Overall, however, families get considerably more leverage out of their pyramids than non-family firm owners, whose wedge averages only 4%.

Table I also reports the average ownership stake of the second-largest blockholder. We also collected additional information on who these owners are and find a dichotomous situation between state-owned and private firms: in listed SOEs, the second largest shareholders are often other SOEs; however, in firms where the controlling shareholder is private (entrepreneur, family, or other), we do not identify any influential SOE shareholders, except for some very small SEO-background private equity funds or mutual funds.

We find that, on average, the second largest blockholder in Chinese listed companies only holds 7% of the shares (as compared to a sample average of 32% for the largest shareholder). We note, however, that because the China Security Regulatory Commission only requires full ownership disclosure from the controlling (largest) shareholder, for other shareholders only direct ownership stakes can be obtained. To the extent that these shareholders too may use pyramids to enhance their control, the direct ownership figure of 7% is likely to overestimate their actual ownership in the listed company. This power imbalance suggests that second-largest blockholders may be unable or unwilling to prevent controlling shareholders from appropriating private benefits of control if they choose to do so.

### *B. Variable Descriptions*

Table II contains summary descriptions of all the variables we use in our empirical analysis. Two of the variables merit further explanation. The first is our key dependent variable, *Tobin's q*, which by definition is the ratio of the firm's market value to the replacement cost of its assets. Most Chinese listed companies have, in addition to their listed and tradable shares, a class of non-tradable shares that are not publicly listed on any stock market.<sup>13</sup> When non-tradable shares are traded in private, their price tends to be primarily determined by their book value. We therefore measure Tobin's *q* as the sum of the market value of tradable equity, plus the book values of non-tradable equity and net debt (liabilities minus liquid assets), divided by total assets. All the empirical analyses reported in the paper are based on Tobin's *q* calculated in this way. However, our results are robust to the use an alternative measure of *q*, in which equity value is computed as the product of the tradable stock's price by total number of shares outstanding (including tradable and non-tradable shares).

The second variable that is worth describing in some more detail than what is provided in Table II is *Institutional Efficiency*. We use two alternative measures of this variable. Our primary measure is derived from the World Bank's (2006) ranking of 30 Chinese provinces according to their investment climate. Using a survey on 12,400 firms from 120 cities in China, the World Bank measures investment climate by an index that captures: (1) market potential, (2) labor flexibility, (3) skill and technology endowment, (4) private sector participation, (5) government efficiency, (6) contract enforcement, (7) access to finance, and (8) harmonious society (which is a combination of a broad range of factors such as air quality, female education, and medical

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<sup>13</sup> In April 2005, the China Securities Regulatory Commission launched a so-called "non-tradable shares reform" to convert the non-tradable shares to be tradable on the open market. As stipulated by the reform, holders of the non-tradable shares paid cash and stock to the holders of tradable shares in exchange for their shares' "tradability." By 2007 (our sample year), the reform had been completed but the converted non-tradable shares were still within the 1-2 year official lock-up period.

insurance coverage). Based on this index, the World Bank (2006) ranks China's regions from best to worst as follows:

- (1) Southeast (Jiangsu, Shanghai, Zhejiang, Fujian, and Guangdong),
- (2) Bohai (Shandong, Beijing, Tianjin, and Hebei),
- (3) Central (Anhui, Henan, Hubei, Hunan, and Jiangxi),
- (4) Northeast (Heilongjiang, Jilin, and Liaoning),
- (5) Southwest (Yunnan, Guizhou, Guangxi, Sichuan, Chongqing, and Hainan), and
- (6) Northwest (Shanxi, Shaanxi, Neimenggu, Ningxia, Qinghai, Gansu, and Xinjiang).

Empirically, the World Bank's (2006) study finds that better regional investment climate is associated with higher productivity. Therefore, the ranking of investment climate can be viewed as a measure of regional institutional efficiency in China. For most of our analyses, we collapse the six regions into two groups to simplify tests across groups and to facilitate the comparison between those tests and the results of the regressions where we interact our family-related variables with the institutional efficiency dummy. Specifically, the top two regions, where 836 of our sample companies are headquartered, are classified as having high institutional efficiency, while the bottom four regions, which are home to the remaining 617 companies, are classified as having low institutional efficiency.<sup>14</sup> Nevertheless, the regression results are robust to measuring institutional efficiency by the six-category variable instead.

The second measure of institutional efficiency we use in this paper is based on Fan and Wang's (2006) index of the market development of Chinese provinces as an alternative source to the World Bank's survey. Fan and Wang's index takes into consideration the following factors: (1) relationship between government and market; (2) development of the private sector; (3)

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<sup>14</sup> Dividing the sample into the top three and bottom three regions would create a higher imbalance in the size of the two subsamples.

development of product markets; (4) development of the labor market; (5) development of financial markets; (6) foreign direct investment; and (7) the legal environment, particularly as it relates to the protection of entrepreneurs, employees, consumers, and intellectual property. In our analyses, provinces are classified as having high (low) institutional efficiency when they are above (below) the median index value. Because there are many more provinces than regions, the Fan and Wang index allows a more even sample split than the World Bank's ranking: 697 (756) firms are in provinces with high (low) institutional efficiency by the Fan and Wang measure.

*C. Descriptive statistics: Comparing firms across regions and controlling owner types*

Table III shows descriptive statistics for the full sample (Panel A) as well as separately for the subsamples of firms from regions with high vs. low institutional efficiency (Panels B and C, respectively), broken down by controlling owner type—specifically, given the focus of this paper, we run pairwise comparisons between firms in three groups: entrepreneur-controlled, family-controlled, and non-family firms (i.e., all others, pooled). In unreported analyses, we find no significant differences between the co-founder / multi-family v. single-entrepreneur / single-family subcategories. Therefore, in all subsequent analyses we pool co-founders and single-entrepreneurs together into the entrepreneur-controlled category, and single-family and multi-family together into the family-controlled category.

Panel A shows that entrepreneur and family-controlled firms, when pooled together as a single group (as most prior studies of family firms have done), have significantly better performance than non-family firms, regardless of how performance is measured—Tobin's  $q$ , industry-adjusted  $q$ , or ROA. In this regard, Chinese entrepreneur or family-controlled firms are no different from those in other parts of the world (Anderson and Reeb (2003), Villalonga and Amit (2006), Barontini and Caprio (2006)). However, the breakdown between entrepreneur-

controlled firms and family-controlled firms shows that these results are entirely driven by the family-controlled firms; entrepreneur-controlled firms are better performers than non-family firms, but the differences are not statistically significant. This finding does represent an important departure from prior literature, which has often found that much of the superior performance of family ownership and, especially, family management, is attributable to the first-generation, founder led firms.

Panel A of Table III also shows that entrepreneurs and their families use pyramids not just to a greater effect than other controlling owners (as reported in Table I), but also with much greater frequency—70% vs. 28%. Moreover, families on average control 28% of their companies' board (26% ownership plus 9% voting control in excess of ownership minus the 7% by which voting control *exceeds* board control). Considering that the number of shares outstanding in most companies is many orders of magnitude higher than the number of board seats, and hence board representation is much less divisible, board control in China seems very proportionate to share ownership. This leaves pyramids as the only mechanism that is widely and effectively used by Chinese families to enhance their control over their firms. In addition, 31% of entrepreneur- or family-controlled firms have a family member as CEO (23% of the entrepreneur-controlled firms and 35% of the family-controlled firms), and 56% have a family member as Chairman of the Board (62% of the entrepreneur-controlled firms and 53% of the family-controlled firms). The intersection between the two groups is substantial: 26% of all entrepreneur- or family-controlled firms have family members in both the CEO and Chairman roles, often the same individual.

On average, both entrepreneur-controlled firms as well as family-controlled firms are significantly smaller, younger, and less capital-intensive than non-family firms. Yet they exhibit



significantly lower systematic risk, and they are not significantly different from non-family firms in their growth and leverage. There are no significant differences in any of these variables between the entrepreneur-controlled and the family-controlled groups. In terms of economic magnitude, the most significant differences are in firm size: entrepreneur- and family-controlled firms' assets (sales) average 3.89 (1.43) billion yuan, while non-family firms average 40.4 (8.56) billion yuan—more than ten times larger. This striking difference suggests that, for all the growth that the Chinese private sector has seen, the largest companies in the country still remain under state control. Panels B and C of Table III further show that the largest, most capital-intensive, and least leveraged companies in China are concentrated in high institutional efficiency regions (and are, more specifically, the non-family firms (which are primarily SOEs) within those regions), while the smaller, more capital-intensive, and more highly leveraged firms are located in regions with low institutional efficiency.

Panels B and C of Table III also show that entrepreneurs and their families hold significantly higher ownership stakes in firms located in high institutional efficiency regions. Relative to entrepreneur- and family-controlled firms in low-efficiency regions, those that are headquartered in regions with high institutional efficiency have significantly higher family ownership (28% v. 22%) but slightly lower voting control (8% v. 9% in excess of ownership) and lower board representation both in absolute terms (26% v. 29%) as well as relative to family ownership and control (-10% v. -2%).

The comparison between entrepreneur/family and non-family firms within each regional subsample yields very similar results to the comparison between family and non-family firms in the whole sample (shown in Panel A of Table III). Of particular interest is the difference in Tobin's  $q$  between family and non-family firms, which is  $3.90 - 2.96 = 0.94$  in the full sample,

$3.84 - 2.90 = 0.94$  in the high institutional efficiency subsample, and  $4.01 - 3.04 = 0.97$  in the low-efficiency subsample. All three differences are statistically significant at the 1% level. The difference-in-differences is therefore  $0.94 - 0.97 = -0.03$ , and can be interpreted as a measure of the moderating role of institutional development in the effect of family ownership and control on firm value.

A similar calculation can be made with respect to the prevalence of entrepreneur- and family-controlled firms. These firms represent 37% (= 312/836) of the subsample of companies in regions with high institutional efficiency, but only 29% (=179/617) of companies in the low-efficiency subsample. The difference between the two, which can be interpreted as a measure of the role played by institutional development in the prevalence of entrepreneur- and family-controlled firms, is 8%. We explore these two effects in greater depth in Sections 3 and 4, but before that we analyze where the entrepreneur- and family-controlled firms in our sample come from and how their origin affects their structural characteristics.

#### *D. Entrepreneur- and Family-Controlled Firms' Origin*

Table IV shows that, of the 491 entrepreneur- or family-controlled firms in our sample, 258 were founded by families or individuals within the private sector and 233 were privatized from a former SOE (201) or a former collective organization, which can be seen as a hybrid between an SOE and a private firm (32). The proportions are similar across entrepreneur-controlled firms and family-controlled firms.

Panel A shows that there are statistically significant differences in the degree of entrepreneur- or family ownership, control, and management found in firms that were privatized as compared to those that were founded *de novo* in the private sector. The latter firms have higher family ownership stakes and more frequent presence of the family in management, but

lower board control relative to their ownership. Again, the pattern is very similar across entrepreneur-controlled firms and family-controlled firms, in terms of both the sign and the statistical significance of the differences. However, there are no significant differences in performance, with the exception of Tobin's q in entrepreneur-controlled firms, which is higher for private-origin firms than for public-origin firms, and the difference is statistically significant at the 10% level.

Panel B shows that the fraction of entrepreneur- or family-controlled firms that have been founded in the private sector is much higher in regions with high institutional efficiency (195 or 63.5% out of the 312 such firms that are headquartered in those regions) than in regions with low institutional efficiency (63 or 35% out of 179 firms), and again the proportions are similar across entrepreneur-controlled firms and family-controlled firms. This finding is consistent with the result, shown in Table III, that the state-owned sector in China carries a higher weight in the less developed regions. The implication is that institutional efficiency plays a positive role in the formation of entrepreneur- and family-controlled firms. However, there are few significant differences in performance when the sample is broken down by level of institutional efficiency. Thus, in the remainder of the paper we analyze entrepreneur- and family-controlled firms without regard to whether they come from the public or the private sector.

### **III. The Role of Institutional Development in the Prevalence of Entrepreneur- and Family-Controlled firms**

Table V shows how entrepreneur- and family-controlled firms, SOEs, and other firms are distributed across Chinese regions and provinces with different levels of institutional efficiency. As suggested above, when the sample is split into two subsamples with high vs. low efficiency, entrepreneur- and family-controlled firms are relatively more prevalent in the more developed

provinces: Panel A, where the division is based on the World Bank's (2006) ranking, shows again the 37% (29%) frequency of entrepreneur- and family-controlled firms in the high (low) institutional efficiency subsamples, and the proportions are similar across entrepreneur-controlled firms and family-controlled firms. Panel B shows that the difference is even more pronounced when the sample split is based on Fan and Wang's (2006) index: the equivalent numbers are 40% and 28%, respectively. This finding seems difficult to reconcile with either the investor protection theory or the internal markets theories, both of which share the common prediction that family firms should be more prevalent when institutions are relatively less developed.

Panel C throws some light into what is driving this counterintuitive result. When the full six-region classification of the World Bank is used instead of our two-group simplification of it, we can see that entrepreneur- and family-controlled firms are actually the most prevalent in the least developed region, the Northwest of China (44%). Yet the relation between institutional development and the prevalence of entrepreneur- and family-controlled firms appears to be non-monotonic: the second-least developed region, the Southwest, is where these firms are most scarce (22%), and the second-most developed region, Bohai, is where they are the second-most prevalent (35%).

To test for the effect of institutional development on the prevalence of entrepreneur- and family-controlled firms in a more systematic manner, we estimate probit models of the probability that a firm is a family firm, where the key independent variable, institutional efficiency, is measured in the same three alternative ways as in Table V. We also use, as an alternative continuous measure, Fan and Wang's (2006) original index of the market development of Chinese provinces (as opposed to a dummy variable based on it). In addition, we

include as independent variables several firm characteristics that Villalonga and Amit (2010) find to be theoretically-driven and empirically strong predictors of family control of firms and industries: firm size, as a proxy for efficient scale (measured by the natural logarithm of sales, although we obtain similar results if we use the logarithm of assets); the ratio of property, plant, and equipment (PPE) to total assets, as a proxy for capital requirements, which, like a large efficient scale, should progressively lead to the dilution of a family's ownership stake; and market risk (beta) as a measure of the noisiness of the environment, which should increase the need for large-shareholder monitoring (what Demsetz and Lehn (1985) refer to as "control potential"). We additionally include sales growth, leverage, and the natural logarithm of firm age as control variables.

Table VI shows the results of these probit models. Institutional efficiency is positive and significant under all four measures, including the continuous ones, although the magnitude of the coefficients is larger for the two dummy variables. Running separate models for entrepreneur-controlled firms (columns 3-4 in each panel) and family-controlled firms (columns 5-6 in each panel) yields very similar coefficients to the results for the full sample (columns 1-2). This finding reinforces our earlier conclusion that institutional efficiency overall plays a positive role in the formation and survival of entrepreneur- and family-controlled firms, contrary to what the investor protection and internal markets arguments lead us to expect. Relatedly, Allen et al. (2005) argue that China is an important counterexample to the findings in the law, institutions, finance, and growth literature in that neither its legal nor financial system are well developed, and yet it is one of the fastest-growing economies in the world. They show that this contrast is particularly stark in the private sector, which has been the main driver of growth in China. Consistent with their view, we find that entrepreneur- and family-controlled firms do not seem to

inhibit growth and institutional development; rather, they contribute to it and continue to thrive in more developed environments.

#### **IV. The Role of Institutional Development in the Performance of Entrepreneur- and Family-Controlled Firms**

##### *A. Main Effects of Family Ownership, Control, and Management on Firm Value*

We begin our investigation of the role of institutional development in the value of entrepreneur- and family-controlled firms by analyzing the impact of entrepreneur and family ownership, control, and management per se on different performance measures. The decomposition of the involvement of entrepreneurs and families into their various roles as owners, controllers, and/or managers, helps us understand the channels through which these individuals or groups influence firm value. Our empirical strategy specifically combines the approaches of Villalonga and Amit (2006) and Villalonga and Amit (2009). We follow Villalonga and Amit (2006) in analyzing the separate contributions to firm value of family ownership, excess voting control, and management, and within the latter, of the separate roles of CEO and Chairman of the Board, since under concentrated ownership, decision rights are typically in the hands of the Chairman with the CEO—if a different person from the Chairman—providing more of an implementation role. For greater detail about the control structure channel of family influence, we follow Villalonga and Amit (2009), who decompose the wedge between ownership and control into three components: (1) vote ownership in excess of share ownership (which is attributable to dual-class stock); (2) voting control in excess of vote ownership (which is attributable to pyramids and/or voting agreements; and (3) board control in excess of voting control (which is attributable to disproportionate board representation). Since there is no dual-class stock in China, and no data source that we are aware of allows us to identify any voting

agreements that may exist among shareholders, the decomposition for China simplifies to the last two elements.

Table VII shows the results of this analysis. In Panel A, entrepreneur- and family-controlled firms are pooled together in all measures of their involvement in the firm, whereas in Panel B, we use two separate sets of measures for each of the two subcategories. Within each panel, the first two columns use Tobin's  $q$  as a measure of firm value. In the first column, family ownership and control are measured by dummy variables, whereas in the second they are measured by continuous variables. Family management is always measured by two dummies indicating whether the CEO and/or the Chairman are members of the family. The results reported in the third and fourth columns of the table are based two different alternative measures of firm performance. In the third column we use industry-adjusted  $q$  to account for the fact that entrepreneur- and family-controlled firms are not distributed uniformly (nor randomly) across industries, as documented by Villalonga and Amit (2010); thus, a concern may be raised that the results from the raw  $q$  estimation may be attributable to industry factors unrelated to family ownership and control. In the fourth column we use return-on-assets (ROA) to address the potential concern that market-based performance measures in China are unreliable because Chinese stock markets are inefficient (Allen et al., 2005). For reasons of parsimony, for industry-adjusted  $q$  and ROA we only report the results of the specification with dummy variable measures of family ownership and control. However, the results are robust to using the continuous variable specification instead. Also for the same reason, although all regressions include the same control variables included in the probit models of Table VI, we only report the coefficients relative to the entrepreneurs or families' involvement in their firms.

Panel A shows that the results are very consistent across the three measures of performance and across the continuous v. dichotomous measurement of family ownership and control, although the statistical significance of the coefficients sometimes varies across the four regressions. Entrepreneur or family ownership is positively associated to firm performance, whether measured by Tobin's  $q$  (adjusted or unadjusted) or by ROA, but the coefficient is not significant when ownership is measured continuously. Likewise, family control in excess of ownership is negatively associated to performance, and the negative effect of excess control applies both to excess voting control and to excess board control in all four regressions. However, the coefficients are significant when performance is measured by Tobin's  $q$  and excess voting control is measured by a dummy or excess board representation is measured continuously. The entrepreneur or family's presence in management as CEO has a positive sign in all four regressions, but the coefficient is only significant when performance is measured by ROA. In contrast, when the entrepreneur or family serves as Chairman of the Board, the effect is negative and non-significant in any of the regressions. These results about family ownership and control are remarkably consistent with the findings of Villalonga and Amit (2006) for U.S. family firms, Barontini and Caprio (2006) for European family firms, and Claessens et al. (2002) for Asian firms with controlling shareholders (family or other).

One question that remains unanswered in all of these papers, however, is whether these performance effects are truly due to entrepreneurs or families or to ownership concentration in itself. Our unique setting—China—allows us to throw some light into this question, since as Table I shows, most of the firms that we use as a benchmark to evaluate the performance of entrepreneur- and family-controlled firms also have a controlling shareholder—most often the State, but in some cases others like universities, collective organizations, and concentrated



foreign owners. Moreover, to further investigate this question, we decompose all our ownership, control, and management measures based on whether the shares, votes, board seats, and management positions are held by the entrepreneur(s) or by a family. Villalonga and Amit (2006) show that the impact of family management on firm value is critically dependent on the CEO's generation—positive for founders, negative for their descendants—and that the family's generation also matters for families' roles as controlling owners (not just as managers).

The results of this decomposition are shown in Panel B on Table VII. Consistent with the findings of our univariate analyses reported in Table III, the multivariate regressions of Table VII, Panel B, reveals that the results shown in Panel A of the same table are entirely driven by family firms proper and not by entrepreneur-controlled firms, for which none of the coefficients are significant. In fact, the effect of ownership by entrepreneurs on firm performance is negative (although non-significant), which works to attenuate the significance of the coefficients in Panel A where the roles of entrepreneurs and their families are confounded by their pooled measurement. In Panel B, all the coefficients of family ownership are significant, including that of the continuous measure of ownership, which wasn't earlier. The results in Panel B suggest that entrepreneurs' families help them be better owners than what entrepreneurs can be by themselves.

#### *B. Effects of Family Ownership, Control, and Management on Firm Value in Different Institutional Contexts*

We next examine whether the effect of family ownership, control, and management on firm value varies across different institutional contexts. To this end, we estimate similar OLS regressions to those reported on Panel B of Table VII but on the subsamples of regions with low and high institutional efficiency. Table VIII reports the results when the sample is split in two

according to the World Bank's (2006) ranking on regional investment climate. Although not reported, similar results are obtained when the sample is split according to Fan and Wang's (2006) index instead.

Table VIII reveals a stark contrast in results between the two subsamples. Panel A shows that, in regions with high institutional efficiency, the results for ownership, control, and management by entrepreneurs and families are similar to those found in the full sample. Namely, family ownership and excess voting control are significantly associated to both Tobin's  $q$  and ROA, positively in the case of ownership and negatively in the case of control. Furthermore, the impact of family management in the form of a family Chairman in these regions, which is negative as it was in the full sample, now becomes statistically significant in the four regressions. As in the full sample, entrepreneurs without their families have no significant impact on performance in any of their three roles, with the exception of their management role as CEOs on the second regression, which is marginally significant.

Panel B shows that, in the low-efficiency regions, none of the measures of entrepreneur or family ownership and control are significantly related to performance, with the exception of the family excess control dummy on the ROA regression, which has a negative sign. With respect to family management, the Chairman coefficient isn't statistically significant either in any of the regressions; on the other hand, the positive effect of family-CEOs (but not entrepreneur-CEOs) becomes significant within the low institutional efficiency subsample.

The results suggest an pivotal role for institutional development on the performance of entrepreneur- and family-controlled firms. In a more efficient institutional context, external factors play an important role in disciplining and incentivizing both family and non-family firms. Product and factor markets are more competitive, and courts and regulatory authorities are more

effective in enforcing contracts and judging economic disputes. As a result, controlling families' interests are better aligned with those of their companies, and less motivated to expropriate minority shareholders. Furthermore, in an environment with better investor protection and effective legal enforcement, controlling families are also closely monitored, which makes the expropriation of minority shareholders more difficult and costly.

In more institutionally developed environments, the labor market is also more sophisticated and efficient, so that professional managers become a viable choice for entrepreneur- and family-controlled firms as they are for non-family firms. In contrast, in less developed regions, as labor is limited in supply and the market for it more inefficient, competent professional managers are a scarce resource, and family managers become a more attractive option—sometimes even the only one—for entrepreneur- and family-controlled firms.

### *C. Endogeneity of Family Firm Status*

As shown in Villalonga and Amit (2006, 2010) and in Section 3 of this paper, family firms do not occur at random but as a rational response on the part of their owners to keep ownership and control within the family. Hence, in estimating the effects of family ownership, control, and management on firm value, either by themselves or in their interaction with institutional development, one needs to control for the endogeneity of the family firm status.

We use Heckman's (1979) two-stage approach to estimate several treatment-effects models where the first stage is a probit model of the probability that a firm is a family firm like those reported in Table VI. The second stage consists of linear regressions of industry-adjusted Tobin's  $q$  on measures of entrepreneur and/or family ownership, control, and management as well as the same control variables included in all OLS regressions although only reported on Panel A of Table VII. Similar to instrumental variables, the estimation of a treatment effects

model using Heckman's procedure requires applying an exclusion restriction to at least one variable—i.e., finding an instrument that will predict the first-stage probability that a firm is a family firm, but that will not affect the dependent variable in the second-stage. One such instrument is the fraction of industry sales that comes from entrepreneur- and/or family-controlled firms, which is naturally correlated with the probability that a firm in the industry is such a firm, yet is independent of the second-stage dependent variable (Tobin's  $q$ ) because the latter is industry-adjusted by construction (Campa and Kedia (2002) use a similar instrument to estimate the diversification discount).

Tables IX through XI show the results of our treatment effects models. To conserve space, we only use industry-adjusted Tobin's  $q$  as a measure of performance and only report the results of the first stage and the second-stage coefficients of the control variables on Table IX, which reports on the pooled regressions (pooled both across regions of different institutional efficiency as well as across entrepreneur-controlled firms and family-controlled firms, i.e., similar to Panel A of Table VII). For all remaining regressions we report only the coefficients of interest. Also, for Tables IX and X, we report the results from two different specifications of the second stage: one where family control and management are measured by dummy variables, and one where they are measured as continuous variables. The first stage is common to both models, and family ownership is measured by a dummy in both as well since it is the treatment variable.

The models in Table X are similar to those in Table IX but run on two different subsamples, to test for the differential effects of entrepreneurs v. families. The first subsample excludes family controlled firms; therefore, the regressions effectively compare entrepreneur-controlled firms to non-family firms. The second subsample excludes entrepreneur-controlled firms; therefore, the regressions effectively compare family firms proper to non-family firms.

Table XI adds one further dimension to the breakdown: the models are similar to those in Table X but are run on the subsamples of either high or low institutional efficiency.

Tables IX and X show that, after controlling for the potential selectivity bias in our earlier results, the positive effects of family ownership found in the OLS analyses become much greater in size. The effects of family excess control (voting and board) are similar. Table X additionally shows that the effect of entrepreneur-Chairmen, which is positive as before, now become statistically significant. Table XI further confirms that the significant effects of family ownership and control are entirely driven by the regions or provinces with high institutional efficiency. As in the OLS analyses, the effects of family management on firm value are contingent on both the institutional efficiency of the region and on whether the firms are controlled and managed by entrepreneurs or their families. In high-efficiency regions, entrepreneur-Chairmen have a positive effect while family-Chairmen have a negative effect; both effects are statistically significant. In low efficiency regions, Chairmen have no significant effect, but family-CEOs have a positive and significant one.

## **VI. Conclusion**

In this paper, we use manually collected ownership data from a sample of publicly listed firms in China to test for the role of institutional development in the prevalence and performance of entrepreneur- and family-controlled firms. While legal investor protection and institutional development in general are often used to explain the observed variation in the prevalence and performance of family firms around the world, prior empirical studies have been unable to rule out cultural norms as an alternative explanation. Our focus on Chinese data allows us to do precisely this, since China offers great heterogeneity in institutional efficiency across its various

regions, yet the whole country shares a common baggage of cultural and social norms together with a common legal and regulatory framework.

We find that family ownership, control, and management in China have very similar effects on firm value and profitability to those reported by Villalonga and Amit (2006) for the United States, and that these effects are largely driven by (1) families as opposed to lone entrepreneurs or founders and (2) the regions with high institutional efficiency. Specifically, we find that family ownership is positively and significantly related to performance; family control in excess of ownership, which in China is primarily achieved through the use of pyramids, is negatively and significantly related to it; and the effect of family management is contingent on the two factors mentioned. Namely, in high efficiency regions, having the entrepreneur him/herself as a top manager (CEO and/or Chairman) has a positive effect on performance, but having a family member has a negative effect. In low efficiency regions, the effect is positive in both cases, but the statistical significance is greater for family members than for the actual entrepreneurs. We further show that these results are neither driven by our choice of variables nor by the endogeneity of family firm status.

We conclude that family control is an optimal response (and possibly an active contributor) to institutional development, not to cultural differences. At the very least, the relatively higher prevalence of entrepreneur- and family-controlled firms in regions with high institutional efficiency suggests that these firms do not inhibit growth and development as is sometimes argued. These findings are particularly relevant for China as it continues its transition from a central planning system to a market economy, and suggest possible avenues for future research. For instance, there is mixed evidence about the success of privatization (see Estrin et al. (2009) for a review), and studies of political connectedness in China have found conflicting

evidence about the benefits of this type of connections for both family firms and listed SOEs (Fan et al. (2007a), Chen et al., 2011); Xu et al. (2013)); in both types of study, accounting for institutional development may help reconcile their findings. More generally, we shed new light onto the debate about the causes and consequences of family control around the world.

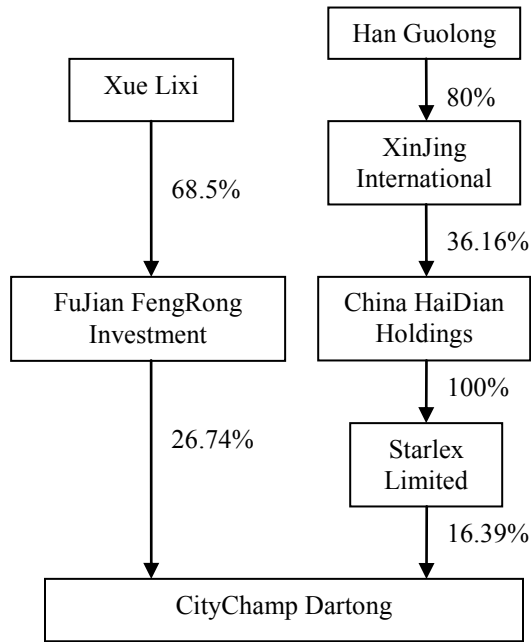
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<u>Han Family's Ownership and Control of CityChamp Dartong:</u>	<u>Wedge Components:</u>	<u>Control Mechanism Creating the Wedge:</u>	<u>Total Wedge:</u>
$O$ (Share ownership) = 23.07%	$(C - O) = 20.06\%$ → Pyramid $(B - C) = 1.31\%$ → Disproportionate Board Representation		$(B - O) = 21.37\%$
$C$ (Voting control) = 43.13%			
$B$ (Board control) = 44.44%			

**Figure 1. Family Ownership and Control of CityChamp Dartong.** Han Guolong, the company founder, owns  $80\% \times 36.16\% \times 100\% \times 16.39\% = 4.75\%$  of the shares of CityChamp Dartong, and controls  $\min(80\%, 36.16, 100\%, 16.39\%) = 16.39\%$  of the votes. Xue Lixi, who is Han Guolong's daughter-in-law, owns  $68.5\% \times 26.74\% = 18.32\%$  of the shares of CityChamp Dartong, and controls  $\min(68.5\%, 26.74\%) = 26.74\%$  of the votes. Therefore, the Han family's combined ownership in CityChamp Dartong is  $4.75\% + 18.32\% = 23.07\%$ , and their voting control is  $16.39\% + 26.74\% = 43.13\%$ . In addition, the family holds four out of nine board seats, or 44.44%.

**Table I**  
**Ownership and Control in Chinese Listed Firms**

Controlling owner is the holder of the largest ultimate ownership stake. Entrepreneurs include founders of private-sector firms as well as individual owners of privatized firms. Families refer to relatives, by blood or marriage, of the entrepreneur(s). State owners include the central and local governments. Other owners include collective organizations, universities, foreign owners, and the general public. Collectively owned firms in China are similar to cooperatives in Western economies but often started by local town governments. They can be seen as a hybrid between state-owned enterprises (SOEs) and private firms. The sample comprises 1,453 A-share companies listed on the Chinese stock market in 2007.

Controlling Owner Type	Number of Firms	Share Ownership				Voting Control				Direct Share Ownership of Second-Largest Shareholder			
		Mean	Median	Min.	Max.	Mean	Median	Min.	Max.	Mean	Median	Min.	Max.
1. Entrepreneur or Family	491	26%	22%	0%	80%	35%	32%	6%	80%	9%	7%	0%	37%
1.1. Entrepreneur	167	23%	20%	0%	80%	32%	29%	9%	80%	9%	7%	0%	37%
1.1.1. Single entrepreneur	24	23%	20%	2%	80%	32%	30%	9%	80%	9%	7%	0%	37%
1.1.2. Multiple entrepreneurs	143	21%	15%	0%	75%	32%	25%	14%	75%	9%	8%	0%	23%
1.2. Family	324	27%	24%	1%	78%	36%	34%	6%	78%	9%	7%	0%	29%
1.2.1. Single family	278	28%	24%	1%	78%	37%	35%	6%	78%	9%	8%	0%	29%
1.2.2. Multiple families	46	21%	15%	1%	72%	30%	26%	9%	72%	9%	7%	1%	24%
2. Non-Family	962	35%	34%	0%	86%	39%	39%	1%	86%	7%	4%	0%	47%
2.1. State	896	36%	35%	2%	86%	40%	40%	6%	86%	7%	4%	0%	47%
2.1.1. Local Government	614	36%	34%	2%	84%	39%	38%	6%	84%	6%	4%	0%	33%
2.1.2. Central Government	282	38%	36%	4%	86%	42%	44%	9%	86%	8%	4%	0%	47%
2.2. Other	66	21%	19%	0%	62%	27%	24%	1%	62%	8%	6%	0%	36%
2.2.1. Collective organization	31	24%	23%	3%	62%	29%	27%	9%	62%	7%	4%	1%	21%
2.2.2. University	13	18%	16%	2%	45%	26%	23%	11%	45%	8%	7%	0%	19%
2.2.3. Foreign	13	29%	29%	2%	84%	33%	33%	6%	84%	12%	8%	0%	33%
2.2.4. Widely Held	9	6%	5%	0%	16%	10%	9%	1%	33%	6%	6%	1%	14%
Total	1,453	32%	30%	0%	86%	38%	36%	1%	86%	7%	5%	0%	47%

**Table II**  
**Variable Descriptions**

Variable	Description
1	Entrepreneur-controlled firm Firm whose largest ownership stake can be traced back to its founder(s), if the firm was founded de novo within the private sector, or if the firm was previously state-owned, to the entrepreneur(s) who took control of it when it was privatized Source: 2007 firm annual reports.
2	Family-controlled firm Firm whose largest ownership stake can be traced back to the family of (one of) its founder(s) or the entrepreneur(s) who took control of a formerly state-owned enterprise when it was privatized . Source: 2007 firm annual reports.
3	Entrepreneur or family ownership stake Percentage of all shares outstanding owned by the entrepreneur or family as a group, directly and indirectly. E.g., if a family owns 25% of Firm X, which in turn owns 20% of all shares outstanding in Firm Y, then the family owns 5% of Firm Y (the product of the ownership stakes along the chain). Source: 2007 firm annual reports.
4	Entrepreneur or family excess voting control Difference between the controlling entrepreneur or family’s voting control and its ownership stake, where voting control is measured by the minimum voting stake (i.e., the “weakest link”) along the control chain. E.g., if a family holds 25% of the votes in Firm X, which in turn holds 20% of the votes in Firm Y, then the family controls 20% of the votes in Firm Y. Source: 2007 firm annual reports.
5	Entrepreneur or family excess board representation Difference between the percentage of founding family members or representatives in the firm’s board of directors and the family’s voting control. Source: 2007 firm annual reports.
6	Entrepreneur or family CEO Dummy variable equal to one if the family firm’s CEO is a member of the controlling family, and zero otherwise. Source: 2007 firm annual reports.
7	Entrepreneur or family Chairman Dummy variable equal to one if the family firm’s Chairman of the Board is a member of the controlling family, and zero otherwise. Source: 2007 firm annual reports.
8	Institutional efficiency Dummy variable equal to one if the institutional efficiency of the region or province in which the firm is headquartered is high, and zero if it is low. The classification of regions or provinces into the high and low institutional efficiency categories is based on two alternative rankings, which are described in more detail in the Appendix:  1. The World Bank’s (2006) ranking of investment climate of six regions in China, which are (from best to worst): (1) Southeast (Jiangsu, Shanghai, Zhejiang, Fujian, and Guangdong; and (2) Bohai (Shandong, Beijing, Tianjin, and Hebei); (3) Central (Anhui, Henan, Hubei, Hunan, and Jiangxi), (4) Northeast (Heilongjiang, Jilin, Liaoning), (5) Southwest (Yunnan, Guizhou, Guangxi, Sichuan, Chongqing, and Hainan), and (6) Northwest (Shanxi, Shaanxi, Neimenggu, Ningxia, Qinghai, Gansu, and Xinjiang). The ranking does not include Tibet. In our analysis, the top two regions are classified as having high institutional efficiency and the bottom four as having low institutional efficiency.  2. Fan and Wang’s (2006) index of market development of Chinese provinces. In our analyses, provinces are classified as having high (low) institutional efficiency when they are above (below) the median index value.
9	Tobin’s $q$ Ratio of the firm’s market value (= equity value + liabilities – liquid assets) to total assets, where equity value = stock price × tradable shares + net asset value per share × non-tradable shares. Source: Wind Data Co.
10	Industry-adjusted $q$ Difference between the firm’s Tobin’s $q$ and the median of $q$ of its main industry (4-digit SIC). Source: Wind Data Co.

11	ROA	Return on assets, computed as net income over total assets. Source: Wind Data.
12	Sales growth	Sales growth rate from 2006 to 2007. Source: Wind Data Co.
13	Beta	Slope from a market model in which the firm's 2007 weekly returns are regressed on the Chinese stock market value-weighted index. Source: Wind Data Co.
14	Leverage	Ratio of total liabilities to total assets. Source: Wind Data Co.
15	Firm age since founding	Number of years since the founding of the firm or the oldest of its predecessor companies. Source: 2007 firm annual reports.

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**Table III**  
**Descriptive Statistics**

Means, standard deviations, and *t*-statistics from tests of differences in means between firms with different types of controlling owners and from regions with different levels of institutional efficiency, in their ownership, control, and financial characteristics. The high institutional efficiency regions are the top two in the World Bank's (2006) ranking of investment climate of six regions in China: Southeast and Bohai. The low institutional efficiency regions are the remaining four in this ranking: Central, Northeast, Southwest, and Northwest. All variables are defined in Table II. The sample comprises 1,453 A-share companies listed on the Chinese stock market in 2007. Asterisks denote statistical significance at the 1% (\*\*\*), 5% (\*\*), and 10% (\*) level, respectively.

*A. By Controlling Owner Type*

	(1)		(2)		(3)		(4)		<i>t</i> -stat. of Diff. in Means (4) – (1)	<i>t</i> -stat. of Diff. in Means (4) – (3)			
	All Firms		Non-Family		Entrepreneur or Family-controlled		Entrepreneur-Controlled				Family-Controlled		
	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.			Mean	S.D.	
Tobin's <i>q</i>	3.28	3.62	2.96	3.37	3.90	4.00	3.12	1.42	4.30	4.77	5.52 ***	3.12 ***	
Industry-adjusted <i>q</i>	0.86	3.57	0.55	3.32	1.45	3.95	0.63	1.46	1.87	4.70	5.53 ***	3.32 ***	
ROA	0.08	0.14	0.07	0.08	0.11	0.20	0.08	0.08	0.12	0.24	5.20 ***	2.09 **	
Entrepreneur or family:													
- Ownership stake	0.09	0.15	0.00	0.00	0.26	0.16	0.23	0.16	0.27	0.16	44.24 ***	52.3 ***	3.02 ***
- Excess voting control	0.03	0.07	0.00	0.00	0.09	0.09	0.10	0.09	0.08	0.09	32.62 ***	28.48 ***	-1.28
- Board representation	0.09	0.17	0.00	0.00	0.28	0.18	0.27	0.19	0.28	0.18	43.42 ***	16.87 ***	0.70
- Excess board rep'n	-0.02	0.12	0.00	0.00	-0.07	0.20	-0.06	0.20	-0.08	0.20	-8.43 ***	-12.2 ***	-1.21
- CEO (dummy)	0.11	0.31	0.00	0.00	0.31	0.46	0.23	0.43	0.35	0.48	17.14 ***	22.74 ***	2.63 ***
- Chairman (dummy)	0.19	0.39	0.00	0.00	0.56	0.50	0.62	0.49	0.53	0.50	39.82 ***	32.76 ***	-2.01 **
Board size	9.55	2.13	9.86	2.19	8.93	1.86	8.94	1.91	8.93	1.84	-5.11 ***	-6.89 ***	-0.06
Pyramid	0.42	0.49	0.28	0.45	0.70	0.46	0.75	0.44	0.68	0.47	12.63 ***	13.96 ***	-1.53
Sales (RMB billion)	6.15	42.0	8.56	51.4	1.43	3.05	1.53	3.71	1.39	2.66	-1.77 *	-2.51 **	-0.48
Assets (RMB billion)	28.1	339	40.4	415	3.89	41.5	1.97	2.36	4.88	51.1	-1.20	-1.54	0.74
PPE/Assets	0.28	0.19	0.31	0.20	0.23	0.16	0.24	0.16	0.22	0.16	-3.73 ***	-6.71 ***	-1.38
Market risk (Beta)	1.01	0.23	1.02	0.20	0.98	0.28	0.99	0.22	0.98	0.31	-1.80 *	-3.00 ***	-0.53
Sales growth	0.34	1.51	0.31	1.44	0.39	1.63	0.32	1.82	0.42	1.53	0.08	1.19	0.66
Leverage	0.24	0.20	0.23	0.16	0.24	0.25	0.26	0.25	0.24	0.25	1.61	0.37	-0.81
Age since founding	11.64	5.59	12.08	4.53	10.79	7.16	10.53	5.23	10.93	7.97	-3.98 ***	-3.21 ***	0.58
Number of firms	1,453		962		491		167		324				

**Table III**  
**Descriptive Statistics—Continued**

*B. High Institutional Efficiency Regions, By Controlling Owner Type*

	All Firms		(1) Non-Family		(2) Entrepreneur or Family- controlled		<i>t</i> -stat. of Diff. in Means (2) – (1)	(3) Entrepreneur- Controlled		<i>t</i> -stat. of Diff. in Means (3) – (1)	(4) Family- Controlled		<i>t</i> -stat. of Diff. in Means (4) – (1)	<i>t</i> -stat. of Diff. in Means (4) – (3)
	Mean	S.D.	Mean	S.D.	Mean	S.D.		Mean	S.D.		Mean	S.D.		
	Tobin's <i>q</i>	3.25	3.60	2.90	3.21	3.84	4.11	3.66 ***	3.47	1.55	1.80 *	4.03	4.94	3.62 ***
Industry-adjusted <i>q</i>	0.84	3.54	0.51	3.16	1.38	4.05	3.46 ***	0.96	1.60	1.44	1.60	4.85	3.56 ***	1.33
ROA	0.08	0.11	0.07	0.09	0.10	0.13	3.99 ***	0.09	0.08	1.67 *	0.11	0.15	4.24 ***	1.44
Entrepreneur or family:														
- Ownership stake	0.11	0.17	0.00	0.00	0.28	0.16	39.92 ***	0.25	0.16	36.18 ***	0.30	0.16	42.42 ***	2.46 **
- Excess voting control	0.03	0.07	0.00	0.00	0.08	0.10	20.34 ***	0.08	0.09	20.64 ***	0.09	0.10	20.19 ***	0.08
- Excess board rep'n	-0.04	0.13	0.00	0.00	-0.10	0.21	-10.74 ***	-0.08	0.22	-8.10 ***	-0.11	0.20	-12.28 ***	-1.28
- CEO	0.13	0.34	0.00	0.00	0.35	0.48	16.89 ***	0.28	0.45	14.21 ***	0.39	0.49	18.37 ***	2.00 **
- Chairman	0.22	0.42	0.00	0.00	0.61	0.48	28.73 ***	0.73	0.45	37.48 ***	0.55	0.50	25.33 ***	-3.10 ***
Pyramid	0.42	0.49	0.26	0.44	0.67	0.47	12.57 ***	0.68	0.47	8.86 ***	0.66	0.47	10.78 ***	-0.33
Sales (RMB billion)	8.51	5.49	12.6	69.0	1.62	3.61	-2.81 ***	1.62	4.43	-1.65 *	1.62	3.11	-2.28 **	0.01
Assets (RMB billion)	45.9	446	70.1	561	5.08	52.0	-2.04 **	1.82	2.41	-1.26	6.79	64.2	-1.61	0.80
PPE/Assets	0.25	0.19	0.27	0.20	0.21	0.16	-4.15 ***	0.22	0.15	-2.21 **	0.21	0.16	-3.84 ***	-0.80
Market risk (Beta)	1.02	0.24	1.04	0.18	0.98	0.31	-3.48 ***	0.98	0.23	-3.13 ***	0.98	0.34	-2.88 ***	0.17
Sales growth	0.36	1.76	0.36	1.86	0.37	1.58	0.14	0.35	2.23	-0.03	0.39	1.10	0.21	0.19
Leverage	0.23	0.20	0.22	0.16	0.24	0.25	1.78 *	0.26	0.28	2.01 **	0.24	0.23	1.17	-0.75
Age since founding	11.81	6.22	12.44	4.81	10.76	7.95	3.82 ***	10.19	5.16	-4.37 ***	11.05	9.07	-2.68 ***	0.91
Number of firms	836		524		312			107			205			



**Table III**  
**Descriptive Statistics—Continued**

*C. Low Institutional Efficiency Regions, By Controlling Owner Type*

	(1)		(2)		<i>t</i> -stat. of Diff. in Means (2) – (1)	(3)		<i>t</i> -stat. of Diff. in Means (3) – (1)	(4)		<i>t</i> -stat. of Diff. in Means (4) – (1)	<i>t</i> -stat. of Diff. in Means (4) – (3)						
	All Firms		Non-Family			Entrepreneur or Family-controlled			Entrepreneur-Controlled				Family-Controlled					
	Mean	S.D.	Mean	S.D.		Mean	S.D.		Mean	S.D.			Mean	S.D.				
Tobin's <i>q</i>	3.32	3.65	3.04	3.55	4.01	3.80	3.02	***	2.50	0.85	-1.17	4.78	4.44	4.47	***	3.94	***	
Industry-adjusted <i>q</i>	0.88	3.60	0.60	3.49	1.56	3.77	3.03	***	0.05	0.94	-1.22	2.34	4.39	4.52	***	3.99	***	
ROA	0.08	0.17	0.07	0.08	0.11	0.29	2.65	***	0.06	0.08	-0.76	0.14	0.35	3.52	***	1.57		
Entrepreneur or family:																		
- Ownership stake	0.06	0.13	0.00	0.00	0.22	0.16	28.87	***	0.19	0.15	25.49	***	0.23	0.16	30.95	***	1.90	*
- Excess voting control	0.03	0.06	0.00	0.00	0.09	0.08	23.26	***	0.12	0.08	29.34	***	0.08	0.08	20.81	***	-2.48	**
- Excess board rep'n	-0.01	0.10	0.00	0.00	-0.02	0.18	-2.83	***	-0.02	0.18	-2.16	**	-0.03	0.19	-3.15	**	-0.35	
- CEO	0.07	0.25	0.00	0.00	0.24	0.43	11.61	***	0.15	0.36	8.86	***	0.28	0.45	12.94	***	1.85	*
- Chairman	0.14	0.34	0.00	0.00	0.47	0.50	19.65	***	0.43	0.50	18.26	***	0.49	0.50	20.37	***	0.68	
Pyramid	0.43	0.50	0.29	0.46	0.77	0.42	11.94	***	0.87	0.34	9.41	***	0.71	0.45	8.97	***	-2.29	**
Sales (RMB billion)	2.95	7.01	3.71	8.13	1.11	1.65	-4.23	***	1.37	1.86	-2.22	**	0.98	1.52	-3.64	***	-1.49	
Assets (RMB billion)	3.98	8.06	4.86	9.33	1.82	2.11	-4.32	***	2.24	2.27	-2.16	**	1.60	2.01	-3.78	**	-1.93	*
PPE/Assets	0.33	0.19	0.35	0.19	0.26	0.17	-5.45	***	0.29	0.18	-2.58	***	0.25	0.17	-5.25	***	-1.26	
Market risk (Beta)	1.00	0.23	1.01	0.23	0.99	0.23	-0.81		1.02	0.20	0.56		0.97	0.24	-1.40		-1.39	
Sales growth	0.30	1.07	0.26	0.62	0.42	1.73	1.66	*	0.27	0.63	0.14		0.49	2.07	2.02	**	0.80	
Leverage	0.25	0.19	0.25	0.17	0.24	0.25	0.32		0.25	0.16	0.18		0.24	0.29	-0.50		-0.36	
Age since founding	11.41	4.58	11.64	4.12	10.85	5.52	1.94	**	11.15	5.34	-0.83		10.71	5.63	-2.02	**	-0.51	
Number of firms	617		438		179				60				119					

**Table IV**  
**Entrepreneur- and Family-Controlled Firms of Public vs. Private Origin: Descriptive Statistics**

Means, standard deviations, and *t*-statistics from tests of differences in means between entrepreneur- or family-controlled firms of public and private origin in their ownership, control, and financial characteristics. Firms in this table are classified into two groups according to their origin: Private-origin firms are those that were founded within the private sector; Public-origin firms are those that were privatized from a formerly state-owned enterprise (SOE) or a former collective organization (which can be seen as a hybrid between an SOE and a private firm). The high institutional efficiency regions are the top two in the World Bank's (2006) ranking of investment climate of six regions in China: Southeast and Bohai. The low institutional efficiency regions are the remaining four in this ranking: Central, Northeast, Southwest, and Northwest. All variables are defined in Table II. The sample comprises 1,453 A-share companies listed on the Chinese stock market in 2007. Asterisks denote statistical significance at the 1% (\*\*\*), 5% (\*\*), and 10% (\*) level, respectively.

	Entrepreneur- or Family Controlled					Entrepreneur-Controlled					Family-Controlled				
	(1)		(2)		<i>t</i> -stat. of Diff. in Means (1) – (2)	(3)		(4)		<i>t</i> -stat. of Diff. in Means (3) – (4)	(5)		(6)		<i>t</i> -stat. of Diff. in Means (5) – (6)
	Public Origin		Private Origin			Public Origin		Private Origin			Public Origin		Private Origin		
	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.	
<i>A. Family Firms from All Regions</i>															
Tobin's <i>q</i>	3.83	3.93	3.97	4.06	-0.40	2.92	1.32	3.31	1.48	-1.76 *	4.29	4.69	4.31	4.85	-0.04
Industry-adjusted <i>q</i>	1.40	3.90	1.49	4.00	-0.24	0.48	1.32	0.77	1.57	-1.26	1.88	4.64	1.86	4.75	0.04
ROA	0.09	0.19	0.12	0.22	-1.21	0.07	0.08	0.08	0.09	-0.63	0.10	0.22	0.13	0.26	-1.10
Family ownership stake	0.22	0.15	0.29	0.17	-5.01 ***	0.19	0.15	0.26	0.16	-2.99 ***	0.24	0.15	0.31	0.17	-4.08 ***
Family excess voting control	0.09	0.08	0.09	0.10	0.19	0.10	0.08	0.10	0.10	-0.01	0.09	0.08	0.08	0.10	0.24
Family excess board rep'n	-0.15	0.18	-0.12	0.20	6.07 ***	0.01	0.21	-0.11	0.18	4.02 ***	-0.03	0.17	-0.13	0.21	4.58 ***
Family CEO dummy	0.22	0.41	0.40	0.49	-4.37 ***	0.14	0.35	0.32	0.47	-2.73 ***	0.25	0.44	0.44	0.50	-3.49 ***
Family Chairman dummy	0.49	0.50	0.62	0.49	-2.84 ***	0.48	0.50	0.75	0.44	-3.70 ***	0.50	0.50	0.55	0.50	-0.95
Pyramid	0.80	0.40	0.62	0.49	4.40 ***	0.85	0.36	0.66	0.48	2.86 ***	0.77	0.42	0.60	0.49	3.38 ***
Number of firms	233		258			79		88			154		170		
<i>B. Family Firms from Regions with High Institutional Efficiency</i>															
Tobin's <i>q</i>	3.96	4.72	3.76	3.70	0.41	3.29	1.57	3.59	1.54	-0.97	4.33	5.73	3.85	4.42	0.66
Industry-adjusted <i>q</i>	1.54	4.68	1.29	3.63	0.51	0.83	1.53	1.05	1.64	-0.67	1.91	5.68	1.42	4.30	0.70
ROA	0.09	0.08	0.11	0.15	-1.06	0.09	0.08	0.09	0.09	-0.18	0.10	0.08	0.12	0.18	-1.06 **
Number of firms	117		195			41		66			76		129		
<i>C. Family Firms from Regions with Low Institutional Efficiency</i>															
Tobin's <i>q</i>	3.69	2.93	4.61	4.98	-1.55	2.52	0.84	2.46	0.89	0.28	4.26	3.40	5.76	5.84	-1.76 *
Industry-adjusted <i>q</i>	1.27	2.91	2.10	4.95	-1.40	0.11	0.93	-0.06	0.97	0.66	1.85	3.36	3.25	5.80	-1.67 *
ROA	0.10	0.26	0.14	0.35	-1.02	0.06	0.08	0.07	0.09	-0.17	0.11	0.31	0.18	0.43	-1.06
Number of firms	116		63			38		22			78		41		

**Table V**  
**Prevalence of Family Firms and SOEs across China**

Distribution of entrepreneur- and family-controlled firms, State-Owned Enterprises (SOEs), and other firms across regions and provinces with different institutional efficiency. The classification of regions or provinces into the high and low institutional efficiency categories is based on different rankings in the three panels. In Panel A, the high institutional efficiency regions are the top two in the World Bank's (2006) ranking of investment climate of six regions in China, and the low institutional efficiency regions are the remaining four. In Panel B, the high (low) institutional efficiency provinces are those above (below) the median value in Fan and Wang's (2006) index of market development of Chinese provinces. Panel C uses the World Bank's six-region ranking. Firms are classified based on their controlling owner type. Entrepreneurs include founders of private-sector firms as well as individual owners of privatized firms. Families refer to relatives, by blood or marriage, of the entrepreneur(s). State owners include the central and local governments. Other owners include collective organizations, universities, foreign owners, and the general public. Collectively owned firms in China are similar to cooperatives in Western economies but often started by local town governments. The sample comprises 1,453 A-share companies listed on the Chinese stock market in 2007. Frequencies by row are shown to the right of each number; those by column are shown in italics under each number

	Entrepreneur or Family- Controlled		Entrepreneur -Controlled		Family- Controlled		SOEs		Other		Total	
<i>A. Institutional Efficiency Dummy based on World Bank Ranking</i>												
High institutional efficiency regions (top two regions in Panel A)	312	37%	107	13%	205	24%	478	57%	46	6%	836	100%
	<i>64%</i>		<i>64%</i>		<i>63%</i>		<i>53%</i>		<i>70%</i>		<i>58%</i>	
Low institutional efficiency regions (bottom four regions in Panel A)	179	29%	60	10%	119	19%	418	68%	20	3%	617	100%
	<i>36%</i>		<i>36%</i>		<i>37%</i>		<i>47%</i>		<i>30%</i>		<i>42%</i>	
Total	491	34%	167	11%	324	22%	896	62%	66	5%	1,453	100%
	<i>100%</i>		<i>100%</i>		<i>100%</i>		<i>100%</i>		<i>100%</i>		<i>100%</i>	
<i>B. Institutional Efficiency Dummy based on Fan and Wang Index</i>												
High institutional efficiency regions	279	40%	100	14%	179	26%	374	54%	44	6%	697	100%
	<i>57%</i>		<i>60%</i>		<i>55%</i>		<i>42%</i>		<i>67%</i>		<i>48%</i>	
Low institutional efficiency regions	212	28%	67	9%	145	19%	522	69%	22	3%	756	100%
	<i>43%</i>		<i>40%</i>		<i>45%</i>		<i>58%</i>		<i>33%</i>		<i>52%</i>	
Total	491	34%	167	11%	324	22%	896	62%	66	5%	1,453	100%
	<i>100%</i>		<i>100%</i>		<i>100%</i>		<i>100%</i>		<i>100%</i>		<i>100%</i>	
<i>C. World Bank Six-Region Ranking</i>												
(1) Southeast (Jiangsu, Shanghai, Zhejiang, Fujian, and Guangdong)	38	27%	14	10%	24	17%	99	69%	6	4%	143	100%
	<i>8%</i>		<i>8%</i>		<i>7%</i>		<i>11%</i>		<i>9%</i>		<i>10%</i>	
(2) Bohai (Shandong, Beijing, Tianjin, and Hebei)	57	35%	16	10%	41	25%	101	61%	7	4%	165	100%
	<i>12%</i>		<i>10%</i>		<i>13%</i>		<i>11%</i>		<i>11%</i>		<i>11%</i>	
(3) Central (Anhui, Henan, Hubei, Hunan, and Jiangxi)	32	32%	12	12%	20	20%	66	67%	1	1%	99	100%
	<i>7%</i>		<i>7%</i>		<i>6%</i>		<i>7%</i>		<i>2%</i>		<i>7%</i>	
(4) Northeast (Heilongjiang, Jilin, Liaoning)	52	25%	18	9%	34	16%	152	72%	6	3%	210	100%
	<i>11%</i>		<i>11%</i>		<i>11%</i>		<i>17%</i>		<i>9%</i>		<i>15%</i>	
(5) Southwest (Yunnan, Guizhou, Guangxi, Sichuan, Chongqing, and Hainan)	55	22%	18	7%	37	15%	184	74%	11	4%	250	100%
	<i>11%</i>		<i>11%</i>		<i>11%</i>		<i>21%</i>		<i>16%</i>		<i>17%</i>	
(6) Northwest (Shanxi, Shaanxi, Neimenggu, Ningxia, Qinghai, Gansu, and Xinjiang)	257	44%	89	15%	168	29%	294	50%	35	6%	586	100%
	<i>52%</i>		<i>53%</i>		<i>52%</i>		<i>33%</i>		<i>53%</i>		<i>40%</i>	
Total	491	34%	167	11%	324	22%	896	62%	66	5%	1,453	100%
	<i>100%</i>		<i>100%</i>		<i>100%</i>		<i>100%</i>		<i>100%</i>		<i>100%</i>	

**Table VI**  
**Impact of Institutional Efficiency on Firms' Propensity to be Entrepreneur- or Family-Controlled**

Probit models of the probability that a firm is an entrepreneur- and/or family-controlled firm. Each panel uses a different measure of the institutional efficiency of the region or province in which each firm is headquartered. All variables are defined in Table II. World Bank Ranking is a six-category variable based on the World Bank's (2006) ranking of the investment climate in six regions in China, where higher values indicate higher efficiency. World Bank Dummy is a dummy variable that equals one if the the region is one of the top two in the World Bank's (2006) ranking. Fan and Wang's (2006) Index of market development of Chinese provinces is a continuous variable. Fan and Wang Dummy is a dummy variable that equals one if the province in which the firm is headquartered is above the median value of the Fan and Wang Index. The sample comprises 1,453 A-share companies listed on the Chinese stock market in 2007. Observations whose Tobin's  $q$  is greater than 20, or whose growth rate is greater than 1000% are considered outliers and excluded from estimation in the  $q$  regressions.  $t$ -statistics are in parentheses. Asterisks denote statistical significance at the 1% (\*\*\*), 5% (\*\*), and 10% (\*) level, respectively.

*A. Institutional Efficiency Measured According to World Bank Ranking*

	Full Sample		Entrepreneur-Controlled v. Non-Family (Excl. Family-Controlled)		Family Controlled v. Non-Family (Excl. Entrepreneur-Controlled)	
	World Bank Ranking	World Bank Dummy	World Bank Ranking	World Bank Dummy	World Bank Ranking	World Bank Dummy
Institutional efficiency	0.09 *** (4.28)	0.30 *** (3.91)	0.08 *** (2.90)	0.26 *** (2.58)	0.10 *** (3.89)	0.31 *** (3.59)
Ln(Sales)	-0.31 *** (-10.87)	-0.31 *** (-10.87)	-0.27 *** (-6.95)	-0.27 *** (-6.97)	-0.31 *** (-9.58)	-0.31 *** (-9.56)
PPE/Assets	-1.23 *** (-5.70)	-1.25 *** (-5.76)	-0.90 *** (-3.17)	-0.92 *** (-3.23)	-1.28 *** (-5.25)	-1.29 *** (-5.27)
Market risk (Beta)	-0.04 (-0.23)	-0.02 (-0.14)	-0.05 (-0.19)	-0.02 (-0.07)	-0.05 (-0.23)	-0.04 (-0.19)
Sales growth	0.02 (0.84)	0.02 (0.81)	0.01 (0.42)	0.01 (0.35)	0.02 (0.73)	0.019 (0.75)
Leverage	0.60 *** (2.72)	0.60 *** (2.69)	0.58 * (1.94)	0.59 ** (1.98)	0.54 ** (2.30)	0.53 ** (2.23)
Ln (age)	-0.36 *** (-5.51)	-0.36 *** (-5.51)	-0.38 *** (-4.52)	-0.38 *** (-4.50)	-0.34 *** (-4.69)	-0.34 *** (-4.71)
Intercept	6.69 *** (-5.51)	6.90 *** (-5.51)	5.19 *** (6.59)	5.39 *** (6.85)	6.33 *** (9.90)	6.53 *** (10.18)
Pseudo R2	0.14	0.14	0.12	0.11	0.14	0.14
Number of observations	1,450	1,450	1,127	1,127	1,283	1,283

**Table VI**  
**Impact of Institutional Efficiency on Firms' Propensity to be Entrepreneur- or Family-Controlled—Continued**

<i>B. Institutional Efficiency Measured According to Fan and Wang Index</i>						
	Full Sample		Entrepreneur-Controlled v. Non-Family (Excl. Family-Controlled)		Family-Controlled v. Non-Family (Excl. Entrepreneur-Controlled)	
	Fan and Wang Index	Fan and Wang Dummy	Fan and Wang Index	Fan and Wang Dummy	Fan and Wang Index	Fan and Wang Dummy
Institutional efficiency	0.09 *** (4.64)	0.42 *** (5.58)	0.09 *** (3.33)	0.42 *** (4.17)	0.09 *** (4.10)	0.39 *** (4.68)
Ln(Sales)	-0.31 *** (-10.91)	-0.31 *** (-10.82)	-0.27 *** (-6.98)	-0.27 *** (-6.86)	-0.31 *** (-9.61)	-0.30 *** (-9.53)
PPE/Assets	-1.20 *** (-5.53)	-1.27 *** (-5.90)	-0.86 *** (-3.04)	-0.92 *** (-3.28)	-1.24 *** (-5.07)	-1.33 *** (-5.42)
Market risk (Beta)	-0.05 (-0.28)	-0.06 (-0.31)	-0.06 (-0.23)	-0.06 (-0.25)	-0.06 (-0.28)	-0.05 (-0.27)
Sales growth	0.02 (0.82)	0.02 (0.76)	0.01 (0.38)	0.01 (0.26)	0.02 (0.71)	0.02 (0.72)
Leverage	0.59 *** (2.65)	0.58 *** (2.62)	0.56 * (1.87)	0.58 * (1.90)	0.53 ** (2.21)	0.51 ** (2.16)
Ln (age)	-0.36 *** (-5.62)	-0.38 *** (-5.76)	-0.38 *** (-4.58)	-0.39 *** (-4.68)	-0.35 *** (-4.85)	-0.36 *** (-4.95)
Intercept	6.46 *** (-5.62)	6.95 *** (-5.76)	4.94 *** (6.22)	5.38 *** (6.79)	6.10 *** (9.53)	6.59 *** (10.22)
Pseudo R2	0.14	0.15	0.13	0.13	0.15	0.15
Number of observations	1,450	1,450	1,127	1,127	1,283	1,283

**Table VII**  
**Impact of Entrepreneur and Family Ownership, Control, and Management on Firm Performance:**  
**OLS Regressions**

OLS Regressions of Tobin's  $q$  or ROA on different measures of entrepreneur or family ownership, control, and management. All variables are defined in Table II. The sample comprises 1,453 A-share companies listed on the Chinese stock market in 2007. Observations whose Tobin's  $q$  is greater than 20, or whose growth rate is greater than 1000% are considered outliers and excluded from estimation in the  $q$  regressions.  $t$ -statistics are in parentheses. Asterisks denote statistical significance at the 1% (\*\*\*), 5% (\*\*), and 10% (\*) level, respectively.

	Tobin's $q$	Tobin's $q$	Industry-Adjusted $q$	ROA
<i>A. Pooled entrepreneur or family ownership, control, and management measures</i>				
Entrepreneur or family ownership dummy	0.66 *** (2.69)		0.65 *** (2.70)	0.03 * (1.73)
Entrepreneur or family ownership stake		0.83 (1.57)		
Entrepreneur or family excess voting control dummy	-0.53 ** (-2.55)		-0.49 ** (-2.36)	-0.02 (-1.23)
Entrepreneur or family excess voting control		-1.18 (-1.37)		
Entrepreneur or family excess board representation dummy	-0.17 (-0.86)		-0.20 (-1.00)	-0.00 (-0.08)
Entrepreneur or family excess board representation		-0.90 * (-1.77)		
Entrepreneur or family CEO dummy	0.25 (1.15)	0.27 (1.21)	0.21 (0.96)	0.05 *** (4.00)
Entrepreneur or family Chairman dummy	-0.06 (-0.31)	-0.02 (-0.09)	-0.09 (-0.42)	-0.01 (-0.99)
Ln(Sales)	-0.43 *** (-11.22)	-0.44 *** (-11.51)	-0.40 *** (-10.43)	-0.03 (-1.47)
PPE/Assets	0.56 ** (2.00)	0.65 ** (2.162)	0.44 (1.50)	0.04 ** (1.99)
Market risk (Beta)	-0.89 *** (-3.63)	-0.89 *** (-3.64)	-0.84 *** (-3.44)	-0.09 *** (-6.14)
Sales growth	0.33 *** (3.82)	0.32 *** (3.63)	0.32 *** (3.68)	0.02 *** (3.03)
Leverage	-1.51 *** (-5.00)	-1.52 *** (-5.07)	-1.25 *** (-4.22)	-0.06 *** (-3.47)
Ln (Age)	-0.27 *** (-2.83)	-0.25 ** (-2.562)	-0.26 *** (-2.72)	-0.01 (-0.89)
Intercept	13.66 *** (16.66)	13.69 *** (17.07)	10.39 *** (12.83)	0.25 *** (5.08)
Adjusted $R^2$	0.15	0.16	0.14	0.05
Number of observations	1,435	1,435	1,435	1,435

**Table VII**  
**Impact of Entrepreneur and Family Ownership, Control, and Management**  
**on Firm Performance: OLS Regressions—Continued**

<i>B. Separate entrepreneur and family ownership, control, and management measures</i>				
	Tobin's $q$	Tobin's $q$	Industry-Adjusted $q$	ROA
Entrepreneur ownership dummy	-0.37 (-0.81)		-0.34 (-0.75)	-0.02 (-0.67)
Family ownership dummy	1.00*** (3.56)		0.97*** (3.51)	0.04** (2.33)
Entrepreneur ownership stake		-0.85 (-0.87)		
Family ownership stake		1.38** (2.28)		
Entrepreneur excess voting control dummy	-0.04 (-0.11)		-0.09 (-0.22)	0.02 (0.71)
Family excess voting control dummy	-0.65*** (-2.62)		-0.56** (-2.27)	-0.03* (-1.71)
Entrepreneur excess voting control		-2.05 (-1.48)		
Family excess voting control		-0.66 (-0.61)		
Entrepreneur excess board rep'n dummy	-0.17 (-0.52)		-0.22 (-0.65)	-0.01 (-0.46)
Family excess board representation dummy	-0.17 (-0.68)		-0.18 (-0.72)	0.00 (0.10)
Entrepreneur excess board representation		-1.36 (-1.60)		
Family excess board representation		-0.64 (-1.01)		
Entrepreneur CEO dummy	0.16 (0.40)	0.14 (0.36)	0.04 (0.10)	0.02 (0.97)
Family CEO dummy	0.23 (0.87)	0.30 (1.10)	0.20 (0.73)	0.06*** (3.80)
Entrepreneur Chairman dummy	0.56 (1.56)	0.39 (1.20)	0.53 (1.51)	0.01 (0.51)
Family Chairman dummy	-0.24 (-0.91)	-0.14 (-0.56)	-0.24 (-0.95)	-0.02 (-1.13)
Intercept	13.56*** (16.55)	13.61*** (16.95)	10.30*** (12.74)	0.25*** (5.08)
Control Variables included?	Yes	Yes	Yes	Yes
Adjusted $R^2$	0.18	0.17	0.15	0.07
Number of observations	1,435	1,435	1,435	1,442

**Table VIII**  
**Role of Institutional Efficiency in the Impact of Entrepreneur and Family Ownership, Control, and Management on Firm Performance: OLS Regressions**

OLS Regressions of Tobin's  $q$  or ROA on different measures of entrepreneur or family ownership, control, and management. The regressions are estimated on subsamples of regions with high or low institutional efficiency. The classification of regions into the high and low institutional efficiency categories is based on the World Bank's (2006) ranking of the investment climate in six regions in China. All variables are defined in Table II. The sample comprises 1,453 A-share companies listed on the Chinese stock market in 2007. Observations whose  $q$  is greater than 20, or growth rate greater than 1000% are considered outliers and excluded from estimation in the  $q$  regressions.  $t$ -statistics are in parentheses. Asterisks denote statistical significance at the 1% (\*\*\*) , 5% (\*\*), and 10% (\*) level, respectively.

<i>A. High Institutional Efficiency Regions</i>				
	Tobin's $q$	Tobin's $q$	Industry-Adjusted $q$	ROA
Entrepreneur ownership dummy	-0.46 (-0.78)		-0.42 (-0.74)	-0.03 (-0.93)
Family ownership dummy	1.26*** (3.74)		1.24*** (3.79)	0.04** (2.30)
Entrepreneur ownership stake		-1.22 (-0.98)		
Family ownership stake		1.80** (2.46)		
Entrepreneur excess voting control dummy	0.17 (0.37)		0.14 (0.31)	0.02 (0.64)
Family excess voting control dummy	-0.74** (-2.49)		-0.64** (-2.22)	0.01 (0.40)
Entrepreneur excess voting control		-0.83 (-0.48)		
Family excess voting control		0.24 (0.18)		
Entrepreneur excess board rep'n dummy	0.03 (0.07)		-0.03 (-0.06)	-0.01 (-0.55)
Family excess board representation dummy	-0.35 (-1.05)		-0.36 (-1.12)	-0.02 (-1.20)
Entrepreneur excess board representation		-1.07 (-1.10)		
Family excess board representation		-0.49 (-0.62)		
Entrepreneur CEO dummy	-0.12 (-0.27)	-0.08 (-0.17)	-0.21 (-0.48)	0.02 (0.91)
Family CEO dummy	-0.45 (-1.40)	-0.41 (-1.29)	-0.49 (-1.54)	0.02 (1.15)
Entrepreneur Chairman dummy	0.78 (1.63)	0.70* (1.75)	0.71 (1.52)	0.03 (1.26)
Family Chairman dummy	-0.72** (-2.24)	-0.65** (-2.07)	-0.76** (-2.40)	-0.03* (-1.82)
Intercept	14.62*** (13.59)	14.57*** (13.87)	11.19*** (10.65)	0.22*** (4.15)
Control Variables included?	Yes	Yes	Yes	Yes
Adjusted $R^2$	0.20	0.20	0.18	0.12
Number of observations	826	826	826	830



**Table VIII**  
**Role of Institutional Efficiency in the Impact of Entrepreneur and Family Ownership, Control, and Management on Firm Performance: OLS Regressions—Continued**

<i>B. Low Institutional Efficiency Regions</i>				
	Tobin's $q$	Tobin's $q$	Industry-Adjusted $q$	ROA
Entrepreneur ownership dummy	-0.73 (-0.91)		-0.60 (-0.74)	-0.01 (-0.21)
Family ownership dummy	0.61 (1.27)		0.55 (1.15)	0.05 (1.48)
Entrepreneur ownership stake		-0.60 (-0.39)		
Family ownership stake		0.37 (0.36)		
Entrepreneur excess voting control dummy	0.23 (0.30)		0.09 (0.12)	-0.00 (-0.05)
Family excess voting control dummy	-0.38 (-0.90)		-0.27 (-0.64)	-0.08 *** (-2.62)
Entrepreneur excess voting control		-2.14 (-0.95)		
Family excess voting control		-1.46 (-0.81)		
Entrepreneur excess board rep'n dummy	-0.04 (-0.07)		-0.12 (-0.22)	0.02 (0.57)
Family excess board representation dummy	-0.25 (-0.68)		-0.25 (-0.66)	0.02 (0.56)
Entrepreneur excess board representation		-0.82 (-0.49)		
Family excess board representation		-1.62 (-1.56)		
Entrepreneur CEO dummy	0.76 (0.94)	0.62 (0.79)	0.57 (0.71)	0.05 (0.790)
Family CEO dummy	2.43 *** (5.10)	2.50 *** (5.25)	2.39 *** (5.03)	0.15 *** (4.31)
Entrepreneur Chairman dummy	-0.35 (-0.60)	-0.51 (-0.85)	-0.26 (-0.45)	-0.016 (-0.38)
Family Chairman dummy	0.47 (1.13)	0.64 (1.58)	0.50 (1.20)	0.02 (0.79)
Intercept	11.36 *** (8.96)	11.43 *** (9.18)	8.34 *** (6.57)	0.19 ** (2.07)
Control Variables included?	Yes	Yes	Yes	Yes
Adjusted $R^2$	0.19	0.19	0.18	0.10
Number of observations	609	609	609	612

**Table IX**  
**Impact of Entrepreneur or Family Ownership, Control, and Management on Firm Performance:**  
**Treatment Effects Regressions**

Treatment effects regressions of industry-adjusted Tobin's  $q$  on entrepreneur or family ownership, control, and management, where the treatment is a family ownership dummy that equals one if the company is identified as an entrepreneur or family-controlled firm. The fraction of industry sales coming from family firms is used as an instrument. All variables are defined in Table II. The sample comprises 1,453 A-share companies listed on the Chinese stock market in 2007. Observations whose Tobin's  $q$  is greater than 20, or whose growth rate is greater than 1000% are considered outliers and excluded from estimation. Asterisks denote statistical significance at the 1% (\*\*\*), 5% (\*\*), and 10% (\*) level, respectively.

	First Stage:		Second Stage			
	Pr[Family Firm]		Model (1)		Model (2)	
	Coef.	<i>t</i> -stat.	Coef.	<i>t</i> -stat.	Coef.	<i>t</i> -stat.
Entrepreneur or family ownership dummy (treatment)			1.84	2.09 **	1.34	1.55
Entrepreneur or family excess voting control dummy			-0.53	-2.56 **		
Entrepreneur or family excess voting control					-2.09	-2.04 **
Entrepreneur or family excess board rep'n dummy			-0.21	-1.06		
Entrepreneur or family excess board representation					-1.19	-2.62 ***
Entrepreneur or family CEO dummy			0.21	0.96	0.24	1.1
Entrepreneur or family Chairman dummy			-0.14	-0.68	-0.11	-0.57
Fraction of industry sales from family firms	1.74	4.27 ***				
Ln(Sales)	-0.30	-10.22 ***	-0.34	-4.02 ***	-0.35	-4.18 ***
PPE/Assets	-1.42	-6.45 ***	1.05	2.25 **	1.04	2.23 **
Market risk (Beta)	0.06	0.35	-0.76	-3.03 ***	-0.75	-3.03 ***
Sales growth	0.10	1.72 *	0.33	3.62 ***	0.32	3.56 ***
Leverage	0.78	3.27 ***	-1.49	-4.37 ***	-1.50	-4.44 ***
Ln (Age)	-0.37	-5.56 ***	-0.11	-0.8	-0.12	-0.85
Intercept	6.48	10.88 ***	8.23	3.58 ***	8.52	3.73 ***
$\lambda$			-0.70	-1.38	-0.61	-1.2
Wald $\chi^2$ ( <i>p</i> -value)			441.0	0.00 ***	447.1	0.00 ***
Number of observations	1,431		1,431		1,431	

**Table X**  
**Impact of Entrepreneur and Family Ownership, Control, and Management on Firm Performance:**  
**Treatment Effects Regressions**

Selected coefficients from the second stage of treatment effects regressions of industry-adjusted Tobin's  $q$  on entrepreneur or family ownership, control, and management, where the treatment is a family ownership dummy that equals one if the company is identified as an entrepreneur-controlled firm (first two regressions) or a family-controlled firm (first two regressions). The first stage variables, including the instrumental variable, and the control variables in the second stage, are the same as in Table IX. All variables are defined in Table II. The full sample comprises 1,453 A-share companies listed on the Chinese stock market in 2007. Observations whose Tobin's  $q$  is greater than 20, or whose growth rate is greater than 1000% are considered outliers and excluded from estimation. Asterisks denote statistical significance at the 1% (\*\*\*), 5% (\*\*), and 10% (\*) level, respectively.

	Entrepreneur-Controlled v. Non-Family (Excl. Family-Controlled)				Family-Controlled v. Non-Family (Excl. Entrepreneur-Controlled)			
	Model (1)		Model (2)		Model (1)		Model (2)	
	Coef.	<i>t</i> -stat.	Coef.	<i>t</i> -stat.	Coef.	<i>t</i> -stat.	Coef.	<i>t</i> -stat.
Entrepreneur or family ownership dummy (treatment)	0.41	0.40	0.24	0.24	4.20	3.95***	3.65	3.48***
Entrepreneur or family excess voting control dummy	-0.15	-0.45			-0.54	-2.38**		
Entrepreneur or family excess voting control			-0.75	-0.5			-1.77	-1.5
Entrepreneur or family excess board rep'n dummy	-0.22	-0.75			-0.15	-0.68		
Entrepreneur or family excess board representation			-1.12	-1.69*			-0.90	-1.67*
Entrepreneur or family CEO dummy	0.05	0.15	0.03	0.09	0.24	0.97	0.28	1.11
Entrepreneur or family Chairman dummy	0.53	1.74*	0.54	1.77*	-0.38	-1.6	-0.36	-1.48
Control Variables included?	Yes		Yes		Yes		Yes	
$\lambda$	-0.34	-0.64	-0.34	-0.65	-1.93	-3.19***	-1.81	-2.99***
Wald $\chi^2$ ( <i>p</i> -value)	265.3	0.00***	267.8	0.00***	338.9	0.00***	343.3	0.00***
Number of observations	1, 117		1, 117		1,266		1,266	

**Table XI**  
**Role of Institutional Efficiency in the Impact of Entrepreneur and Family Ownership, Control, and Management on Firm Performance: Treatment Effects Regressions**

Selected coefficients from the second stage of treatment effects regressions of industry-adjusted Tobin's  $q$  on entrepreneur or family ownership, control, and management, where the treatment is a family ownership dummy that equals one if the company is identified as an entrepreneur or family-controlled firm (first two regressions), as an entrepreneur-controlled firm (next two regressions), or as a family-controlled firm (first two regressions). The regressions are estimated on subsamples of regions with high or low institutional efficiency. The classification of regions into the high and low institutional efficiency categories is based on the World Bank's (2006) ranking of the investment climate in six regions in China. The first stage variables, including the instrumental variable, and the control variables in the second stage, are the same as in Table IX. All variables are defined in Table II. The full sample comprises 1,453 A-share companies listed on the Chinese stock market in 2007. Observations whose Tobin's  $q$  is greater than 20, or whose growth rate is greater than 1000% are considered outliers and excluded from estimation. Asterisks denote statistical significance at the 1% (\*\*\*), 5% (\*\*), and 10% (\*) level, respectively.

*C. Selected Coefficients from Second-Stage, Subsamples excluding Entrepreneur-Controlled or Family-Controlled Firms, by Institutional Efficiency*

	Entrepreneur- and Family-Controlled Firms v. Non-Family Firms		Entrepreneur-Controlled v. Non-Family (Excl. Family-Controlled)		Family-Controlled v. Non-Family (Excl. Entrepreneur-Controlled)	
	High Institutional Efficiency	Low Institutional Efficiency	High Institutional Efficiency	Low Institutional Efficiency	High Institutional Efficiency	Low Institutional Efficiency
Entrepreneur or family ownership dummy (treatment)	3.11 ** (2.49)	0.86 (0.77)	1.08 (0.95)	-3.11 * (-1.86)	5.61 *** (3.42)	2.67 ** (2.06)
Entrepreneur or family excess voting control dummy	-0.49 ** (-2.06)	-0.51 (-1.39)	-0.03 (-0.07)	0.10 (0.18)	-0.63 ** (-2.55)	-0.25 (-0.61)
Entrepreneur or family excess board representation dummy	-0.23 (-0.90)	-0.18 (-0.57)	0.11 (0.29)	0.10 (0.23)	-0.28 (-1.06)	-0.23 (-0.64)
Entrepreneur or family CEO dummy	-0.50 ** (-2.04)	2.07 *** (5.10)	-0.14 (-0.37)	0.46 (0.78)	-0.36 (-1.35)	2.25 *** (4.91)
Entrepreneur or family Chairman dummy	-0.41 * (-1.65)	0.11 (0.33)	0.73 * (1.86)	-0.19 (-0.43)	-0.98 *** (-3.65)	0.45 (1.15)
$\lambda$	-1.32 * (-1.80)	-0.31 (-0.51)	-0.84 (-1.39)	1.34 * (1.71)	-2.55 *** (-2.70)	-1.33 * (-1.87)
Wald $\chi^2$	306.38 ***	195.25 ***	243.50 ***	61.26 ***	228.96 ***	192.96 ***
Number of observations	822	609	622	495	716	550