Contract Enforcement and Family Control of Business: Evidence from China

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Abstract

Family control of business is prevalent in developing economies, and one of the leading theories suggests that it is a response to weak contract enforcement in such economies. In this paper, we investigate the impacts of contract enforcement on the degree of family control of business using a sample of China's private enterprises. It is found that weaker contract enforcement is associated with the higher degree of family control of business. Our results are robust to the control for omitted variables and reserve causality issues, to the adjustment for the sample attrition bias, to the use of a sub-sample, and to the inclusion of other explanations for the family control of business.

Keywords: Family Control of Business, Contract Enforcement, China's Private Enterprises
JEL Codes: P37, L22, D21, K12

1 Introduction

Family control of business is prevalent around the world, and it is especially so in developing economies (La Porta, Lopez-de-Silanes, and Shleifer, 1999; Claessens, Djankov, and Lang, 2000).[1] One of the leading theoretical explanations focuses on whether family control of business is a response to weak contract enforcement (see Bertrand and Schoar, 2006, for a review). Burkart, Panunzi, and Shleifer (2003) and Caselli and Gennaioli (2005) point out that while firm owners may want to recruit professional managers to run their business, they are concerned about the potential expropriation of their properties by professional managers. Alternatively, firm owners may want to sell their business to outside investors, but such a transfer of assets hinges upon the efficient functioning of capital markets. When contract enforcement is problematic, the managerial incentive contracts designed by firm owners may not have the *de facto* power in restraining the opportunistic behavior of professional managers. This is further exacerbated by the inefficient managerial labor market and the disrespect of fiduciary duties that often accompany the weak contract enforcement. Similarly, under weak contract enforcement, capital markets are inefficient, making it difficult for potential investors to finance their investment on one hand and secure protection of their investment from expropriation by firm owners on the other. Taken together, weak contract enforcement leads to a rise of family control of business.

However, empirical evidence regarding the impacts of contract enforcement on family control of business is rather limited. In this paper, we would like to fill the void by empirically investigating the impacts of contract enforcement on family control of business. Our analysis uses the data of China's privately-owned firms. Since China started its economic reform in 1978, there has been an explosive growth of private firms, mostly individually-owned or family-owned ones (McMillan and Woodruff, 2002). Currently, China's non-state sector accounts for around 65% of its GDP and 70-80% of its GDP growth (CAI JING Magazine, 2007). Meanwhile, there exist substantial variations in the effectiveness of the *de facto* contract enforcement across regions despite the fact that China is a unitary state with uniform legal codes (e.g., Du, Lu and Tao, 2008a; World Bank, 2008). Thus, China offers an ideal setting to investigate the impacts of contract enforcement on family control

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[1]There is a large literature on family firms, including their financial performances (e.g., Anderson and Reed, 2003; Pérez-González, 2006; Bennedsen, Nielsen, Pérez-González and D. Wolfenzon, 2007), internal organizations (e.g., Cai, Li, Park, and Zhou, 2007), and determinants (e.g., Burkart, Panunzi, and Shleifer, 2003; Bhattacharya and Ravikumar, 2003; Ilias, 2006).

of business.[2]

Following the literature on family firms (e.g., Anderson and Reeb, 2003; Villalonga and Amit, 2006, 2007), we measure the degree of family control of business as the extent to which firm owners make important management decisions such as operations, wages and benefits, human resource management, and long-term corporate decisions. And we measure the effectiveness of contract enforcement as the willingness of private firms to use courts to resolve business disputes (e.g., North, 1991; Cull and Xu, 2005).

Our ordinary least squares regression results show that the effectiveness of contract enforcement has a negative and statistically significant impact on the degree of family control of business, which is consistent with the theoretical predictions of Burkart, Panunzi, and Shleifer (2003) and Caselli and Gennaioli (2005).

This result, however, could be biased due to some omitted variables and reverse causality issues. We then control for a host of variables related to firm and firm owner's characteristics, region characteristics, and industry dummies, and find that our results are robust to these controls. To alleviate the concern of reverse causality, we use the regional average of other firms' perceptions regarding the effectiveness of contract enforcement, and find that our results still hold. To further address potential endogeneity problems, we use the instrumental variable method. Following La Porta, Lopez-de-Silanes, Shleifer, and Vishny (1997, 1998), we use legal origin (i.e., an indicator of whether a region was administered by Great Britain in the late Qing Dynasty) as an instrument for contract enforcement. The instrumental variable estimation results show that weaker contract enforcement causes firms to be more family-controlled.

The validity of our instrumental variable estimation hinges upon the satisfaction of two conditions: the relevance condition and the exclusion restriction. The relevance condition is confirmed by the highly significant correlation between the instrumental variable and the effectiveness of contract enforcement, and by the result of the Anderson canonical correlation LR statistic. Meanwhile, the large Shea partial R-squared and the Cragg-Donald

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[2]Indeed, there is anecdotal evidence suggesting the linkage between poor contract enforcement and the prevalence of family control of business in China. There are many examples indicating that firm owners and professional managers have disputes about incentive payments agreed upon ex ante, resulting in the departure of professional managers in the middle of their contracts (Li, 2006). Even worse, there are cases where the professional managers hired by family firms breach their employment contracts by taking away clienteles and setting up competing businesses (Dai, 2007). In general, the fulfillment of the fiduciary duties of professional managers is a big concern to firm owners, especially in the less developed regions of China.

F-statistic rule out the concern for the weak instrumental variable. With regard to the exclusion restriction, we conduct a test following Acemoglu, Johnson, and Robinson (2002). Specifically, if the instrumental variable affects the degree of family control of business only through the channel of contract enforcement, then the instrumental variable should not have any statistically significant impact when it is included together with the contract enforcement index in the regressions. Our results remain robust with this exclusion test, implying that our instrumental variable estimation is valid.

For further robustness checks, we use an alternative instrumental variable, adopt two methods to investigate if our results are biased due to the sample attrition problem, focus on a sub-sample of firms with their main owners having 100% equity shares, and finally control for three alternative explanations for the family control of business.

Our study is related to the recent literature on the importance of economic institutions for economic growth (e.g., Acemoglu, Johnson, and Robinson, 2001, 2002), incentives for investment (e.g., Besley, 1995; Johnson, McMillan, and Woodruff, 2002), and corporate decisions (e.g., Laeven and Woodruff, 2007; Du, Lu, and Tao, 2008b).

The remainder of the study is structured as follows. Section 2 introduces the data and variables for the empirical study, while Section 3 presents our main empirical results. The paper concludes with Section 4.

2   Data and Variables

The data set used in this study is from the *Survey of China's Private Enterprises* conducted in 2002. This survey is conducted jointly by the United Front Work Department of the Central Committee of the Communist Party of China, the All China Industry and Commerce Federation, and the China Society of Private Economy at the Chinese Academy of Social Sciences. To achieve a balanced representation across all regions and industries in China, the survey uses the multi-stage stratified random sampling method. The total number of private firms to be surveyed is first determined. After this, six cities/counties are selected from each of the 31 regions (i.e., 22 provinces, 4 province-level municipalities, and 5 minority autonomous regions), which include the capital city of the region, one prefecture-level city, one county-level city, and three counties. Next, the number of private firms to be surveyed in each region is determined by the product of the percentage of the region's share of private firms in the national total and the total number of private firms in the survey. The same method is used to determine the number of sample firms in every city/county and industry. Finally, private firms are

randomly chosen for each sub-sample. The data set contains 3,258 initial observations, which represents 0.16% of the total number of privately-owned firms nationwide by the end of 2001.

The dependent variables of this study are about the degree of family control of business. In the survey, there are four questions related to the degree of family control, (i) who makes the operations decisions, (ii) who makes decisions on wages and benefits for the employees, (iii) who makes the human resource management decisions, and (iv) whether firm owner or his relatives are required for the long-term development of the firm.[3] The possible answers for the first three questions are, the firm owner himself, the board of directors, the firm owner and the senior management, the firm owner and other organizations, the management, and others. We construct three dummy variables, Operations Decisions, Wages and Benefits, and HRM Decisions, corresponding to the first three questions, taking a value of 1 if the reply is "the firm owner himself" and 0 otherwise. Meanwhile, a dummy variable, Long-term Development, is constructed corresponding to the fourth question, taking a value of 1 if the reply is affirmative and 0 otherwise.

To have comprehensive characterizations of family control of business, we use the principal component and the simple average of the four variables discussed above, and construct two variables (*Family Control_pc* and *Family Control_average*) accordingly. The correlations of the four component measures of family control as well as the two comprehensive measures of family control are shown in Table 1.

Table 2 shows the pattern of family control of business in China.[4] Clearly, there are significant variations in each of the four component measures of family control of business across China's regions. For the variable *Operations Decisions*, Hainan has the highest degree of family control (with a mean value of 0.674), followed by Liaoning (0.616) and Yunnan (0.521), whereas Beijing has the lowest degree of family control (0.228), followed by Jilin (0.276) and Chongqing (0.286). Meanwhile, Liaoning has the highest percentage of firm owners making decisions on *Wages and Benefits* (0.598), followed by Hainan (0.533) and Shanxi (0.500), whereas Hubei has the lowest percentage (0.183), followed by Beijing (0.186) and Chongqing (0.196). As for *HRM Decisions*, Liaoning has the highest degree of family control (0.640), followed by Shanxi (0.560) and Hainan (0.543), whereas Chongqing has the lowest degree (0.232), followed by Beijing (0.236) and Hubei (0.274). For the variable *Long-term*

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[3]The respondent of the survey is the firm owner, who may or may not have 100% ownership of the firm.

[4]Tibet is excluded due to its sharply different business environment from other regions. However, our main results remain robust to the inclusion of Tibet presumably because of the small sample size of firms in Tibet.

Development, Hainan has the highest percentage of family control (0.630), followed by Xinjiang (0.521) and Yunnan (0.500), whereas Jiangxi has the lowest percentage (0.211), followed by Gansu (0.241) and Chongqing (0.250). Referring to the comprehensive measures of family control (i.e., *Family Control_pc* and *Family Control_average*), Liaoning, Hainan, and Yunnan are the three regions with the highest degree of family control of business, whereas Beijing, Chongqing, and Hubei are the three regions with the lowest degree.

Meanwhile, there are significant variations in the degree of family control of business across firms in terms of both size and age, with larger and older firms having lower degrees of family control. Finally, the last row of Table 2 shows that the percentage of firm owners involved in the decision on *Wages and Benefits* is the lowest (0.351) among the four component measures of family control of business, whereas the percentage of *Operations Decisions* is the highest (0.402).

Our key independent variable is the effectiveness of contract enforcement. In the survey, there is a question on whether a firm would like to use courts to resolve business disputes. A variable denoted by *Contract Enforcement* is constructed accordingly, taking a value of 1 if the reply is affirmative and 0 otherwise. Note that only 862 out of 3,258 firms responded to this question, thereby reducing the sample size in our regression analysis. Table 3 shows the pattern of family control of business in China in the regression sample, which are similar to those of the full sample reported in Table 2. Moreover, in the regression analysis, using two methodologies à la Duflo (2001) and Wooldridge (2002, 2007), we will confirm that our results are not biased due to the sample attrition with regard to the mis-reporting of contract enforcement.

It is important to note that there are significant variations in the effectiveness of contract enforcement across China's region despite China being a unitary state with uniform laws and national ordinances. The mean value of *Contract Enforcement* is 0.860 with a standard deviation of 0.348 in our sample.

Officially, China has a centralized legal structure, with the National People's Congress (NPC) having the sole power to enact laws and national ordinances. However, due to substantial variations in endowments, socioeconomic development, and culture across regions as well as the fast-changing socioeconomic environment as experienced during China's economic transition, the laws and national ordinances enacted by the NPC tend to be sketchy and need to be modified in order to be more applicable to local circumstances (Eggleston, Posner, and Zeckhauser, 2000). Meanwhile, the legal system in China comprises of four levels of courts: the Supreme People's Court at the national level, the Higher Level People's Courts at the regional level, and the

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Intermediate Level and Basic Level People's Courts at the local level. Despite the system's self-image as one in which courts only apply law and national ordinances, all these four levels of courts are capable of issuing rules and regulations purporting to be binding on various parties to varying degrees (e.g., Chen, 2004; Clarke, Murrell, and Whiting, 2005).

In issuing rules and regulations with respect to laws and national ordinances, however, local courts (i.e., Higher Level, Intermediate Level, and Basic Level People's Courts) are vulnerable to the influences of respective local governments, and they are pressured to make rulings in favor of local firms and industries in lawsuits, which involves parties outside local jurisdictions (e.g., Zheng, 1988; Shi, 1989). This is because the power to appoint and dismiss court personnel is lodged in the local People's Congress, and local courts rely on local governments for their finance (Zhao, Zhou, Zhang, Qi, and Wang, 1989). Meanwhile, as local courts are short of autonomous enforcement powers in China, the enforcement of rulings, especially those against local firms and industries, hinges upon the cooperation of local authorities such as local public security bureaus (e.g., Fan, 1985; Lieberthal and Oksenberg, 1988; Zhao, 1989; Li, Zhang, and Wang, 1990; Clarke, 1991). As a result, there are substantial variations in the interpretation and enforcement of laws and national ordinances enacted by the central government across China's various regions (e.g., Tai, 1957; Cheng, Liu and Cheng, 1982; Yearbook of People's Court, 1990; Clarke, 1996, 2005). Indeed, a World Bank survey conducted in 2008 reveals substantial differences in the efficiency of courts to resolve business disputes across China's regions. For example, in coastal cities, it takes an average of 230 days to resolve an uncomplicated commercial dispute, whereas the corresponding number for Northeastern China is 363 days (World Bank, 2008).

In the empirical analysis, we also control for other factors that might possibly affect the degree of family control of business, including firm and firm owner's characteristics, regional characteristics, and industry dummies. The firm characteristics include *Firm Size* (measured by the logarithm of total sales) and *Firm Age* (measured by the logarithm of years of establishment by the end of 2001). The firm owner's characteristics include his human capital, *Education* (years of formal schooling), *Age* (the age of the firm owner by the end of 2001), and *Gender* (a dummy variable taking a value of 1 if the firm owner is a male and 0 otherwise); and his political capital, *CPC Membership* (a dummy variable taking a value of 1 if the firm owner is a member of the Chinese People's Congress and 0 otherwise) and *CPPCC Membership* (a dummy variable taking a value of 1 if the firm owner is a member of the Chinese People's Political Consultative Conference and 0 otherwise). Finally, we included industry dummy and the logarithm of regional GDP per capita to

account for the possible differences in the degree of family control of business across industries and regions.

As a way of controlling for the problem of reverse causality, for each firm, we use the regional average of other firms' perceptions on the effectiveness of contract enforcement. To further address potential endogeneity issues, we follow the literature (La Porta, Lopez-de-Silanes, Shleifer, and Vishny, 1997, 1998) and use legal origin as an instrumental variable for the effectiveness of contract enforcement. Specifically, it is a dummy variable (denoted by *British Administration*) indicating whether the respective region was administered by Great Britain in the late Qing Dynasty (details will be provided below in Section 3.4).

Finally, to examine other possible explanations for the degree of family control of business, we construct three variables: *Entrepreneurship of Family Members* (the fraction of the firm owner's grandfather, father, mother, and spouse being self-employed), *Diversification* (a categorical variable taking a value of 0 if the firm engages in only one business, a value of 1 if the firm engages in two businesses, a value of 2 if the firm engages in three businesses, and a value of 3 if the firm engages in four businesses), and *Difficult to Find Reliable Managers* (a dummy variable taking a value of 1 if the answer to the Survey question "whether it is difficult for firm owner to find reliable professional managers" is affirmative and 0 otherwise).

The summary statistics of all key variables are given in Table 4.

3 Empirical Analysis

3.1 Benchmark Results

To investigate the impacts of the effectiveness of contract enforcement on the degree of family control of business, we estimate the following equation:

$$y_f = \mu_i + \alpha \cdot Contract\ Enforcement_f + \beta \cdot Logarithm\ of\ GDP\ per\ capita_r + X_f'\gamma + \varepsilon_f \tag{1}$$

where y_f measures the degree of family control of business for firm f in region r and industry i, $Contract\ Enforcement_f$ is the perception regarding the effectiveness of contract enforcement by firm f in region r and industry i, μ_i is the industry dummy, X_f is a vector of control variables, and ε_f is a random error term. To deal with the possible heteroskedasticity, standard errors are clustered at the industry/region level.

The benchmark estimation results with both industry dummies and the logarithm of GDP per capita included are presented in Table 5. Columns 1-4

are the Probit regression results for the four component measures of family control of business: *Operations Decisions*, *Wages and Benefits*, *HRM Decisions*, and *Long-term Development*. Clearly, the degree of family control of business along with each of these four dimensions is negatively and statistically significantly correlated with the effectiveness of contract enforcement. As shown in Columns 5-6 of Table 5, similar results are found for the two comprehensive measures of family control of business: *Family Control_pc* (principal component of the four component measures) and *Family Control_average* (simple average of the four component measures). Specifically, a one-standard-deviation increase in the effectiveness of contract enforcement leads to a 0.153-standard-deviation decrease in *Family Control_pc* and a 0.159-standard-deviation decrease in *Family Control_average*.

3.2 Multivariate Analysis

The above benchmark regression results could be biased due to the lack of control for omitted variables and reverse causality issues. In Table 6, we control for a host of variables related to firm and firm owner's characteristics.

Columns 1-2 of Table 6 report the results for *Family Control_pc* when the firm owner's and firm characteristics are added stepwise along with industry dummies and the logarithm of GDP per capita. To deal with the concern that the results could still be biased due to the cross-regional variations in industrial structure, in Column 3, we use the industry/region dummies instead of industry dummies and the logarithm of GDP per capita.[5] In Columns 4-5, we repeat the analysis in Columns 2-3 using *Family Control_average* as a measure of the degree of family control of business. Clearly, our previous results on the negative correlation between the effectiveness of contract enforcement and the degree of family control of business remain robust to these controls. Meanwhile, the estimated coefficients of control variables also make economic sense. For example, firm owners with better education prefer to have less family control of their businesses, larger firms are less likely to be family controlled, and firms located in more developed regions have lower degrees of the family control of business.

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[5]We thank an anonymous referee for pointing out the concern that the estimation results could be biased due to the variations in industrial structure across China's regions. The inclusion of the interaction terms between industry and region dummies is meant to address this concern, though not perfectly.

3.3 Region-Level Analysis

To alleviate the concern of reverse causality, for each firm, we use the regional average of other firms' perceptions on the effectiveness of contract enforcement as the explanatory variable, and repeat the estimations. As shown in Table 7, firms in regions with weaker contract enforcement are found to have higher degrees of family control.

3.4 Instrumental Variable Estimation

It could still be argued that endogeneity issues remain. For example, we may not exhaust all possible variables that correlate with both the degree of family control of business and the effectiveness of contract enforcement. Meanwhile, firms with higher degrees of family control rely more on their family reputations for doing business with other firms, thus having less need for improvements of effective contract enforcement in their regions.

To further deal with these endogeneity problems, we use the instrumental variable estimation as a robustness check. Motivated by the recent literature on economic institutions (La Porta, Lopez-de-Silanes, Shleifer, and Vishny, 1997 and 1998; Acemoglu, Johnson, and Robinson, 2001, 2002), we look back into the Chinese history for suitable instruments. Specifically, we use a dummy variable indicating whether the respective region was administered by Great Britain in the late Qing Dynasty as an instrument for the effectiveness of contract enforcement. We compile historical information on the control of China's regions by foreign powers from relevant texts on the modern history of China such as the works of McAleavy (1967) and Dong, Zhang, and Jiao (2000).

During the late Qing Dynasty (1840-1911), China was defeated in a series of wars against foreign powers, including two Opium Wars with Great Britain, the Sino-Japanese War of 1894-95, and the Boxer Rebellion. In the wake of military defeats, the Qing government was forced to sign unequal treaties including territorial concessions. The wave of territorial partitioning climaxed at the end of the 19th century, with Great Britain governing regions along the Yangtze River (Guizhou, Sichuan, Hubei, Hunan, Jiangxi, Anhui, Jiangxu, Henan, and Zhejiang), France governing Yunnan, Hainan, Guangxi, and the majority of Guangdong, Germany governing Shandong, Japan governing Fujian, and Russia governing Xinjiang, Mongolia, and the three north-eastern provinces (Qian, 1948). Shanghai and Tianjin, the two leading commercial centers of China at that time, were divided into various foreign concessions.

Within their respective domains of control, the foreign powers effectively

established their sovereign authorities (McAleavy, 1967). Typically, the foreign powers imposed their own civil and military administration, including in partically their own legal systems (Dong, Zhang, and Jiao 2000). As a result, law suits taking place in the domains controlled by the foreign powers were adjudicated using the legal systems of the respective reigning foreign powers (e.g., Yang and Ye, 1993; Tan, 1996). The foreign powers imposed their legal systems by force, and hence the legal systems could be considered as exogenous to the local community.

The foreign powers had different legal systems, with Great Britain using the common law system and France, Germany, Japan, and Russia adopting the civil law system. It has been shown that the common law system supports private market outcomes while the civil law system imposes state-desired allocations, implying different types of social control of business (Damaška, 1986; Pistor, 2006; La Porta, Lopez-de-Silanes, and Shleifer, 2008). As a result, the common law system is associated with greater judicial independence (La Porta, Lopez-de-Silances, Pop-Eleches, and Shleifer, 2004), less formalism of judicial procedures (Djankov, La Porta, Lopez-de-Silanes, and Shleifer, 2003) and fewer judicial biases (Gennaioli, 2009) than the civil law system, which in turn leads to more effective contract enforcement under the common law system than that under the civil law system (Acemoglu and Johnson, 2005; La Porta, Lopez-de-Silanes, and Shleifer, 2008).

The imposition of the legal systems by the foreign powers in various parts of China in the late Qing Dynasty was expected to influence not only the legal rules, but also the legal institutions (including judicial independence and legal procedures), and human capital and beliefs of the key participants in the legal systems (Zweigert and Kötz, 1998; La Porta, Lopez-de-Silanes, and Shleifer, 2008). Indeed, the foreign powers in China were actively engaged in transplanting and cultivating their beliefs and ideologies to the local people by setting up and operating schools and colleges. Speaking at the Second Protestantism Propagators Congress held in Shanghai in China in 1890, F.L. Hawks Pott, President of Saint John's University, declared that "in our school, we trained China's future teachers and propagators, making them the leaders and comperes in the future and casting the greatest influences on the future China" (Yang and Ye 1993).

The legal institutions, human capital and beliefs that were transplanted and cultivated by different foreign powers are expected to persist over time (Zweigert and Kötz, 1998; Balas, La Porta, Lopez-de-Silanes, and Shleifer, 2009). Indeed, there is a growing body of literature on the persistence of culture, beliefs, and ideologies over time (e.g., Bisin and Verdier, 2000; Dohmen, Falk, Huffman, and Sunde, 2006; Tabellini, 2007a, 2007b, 2008).

Given that the contract enforcement is more effective under the common

law system used by Great Britain than under the civil law system used by France, Germany, Japan, and Russia, we therefore take whether a region of China was administered by Great Britain during the late Qing Dynasty as a reasonable instrument for the effectiveness of contract enforcement in 2001.[6]

The instrumental variable estimation results are summarized in Table 8. As shown in Panel B, the instrumental variable (*British Administration*) is positively and statistically significantly correlated with the effectiveness of contract enforcement, which is consistent with our above argument of the relevance on the instrumental variable. Columns 1-2 in Panel A report the second-stage estimation results, when *Family Control_pc* and *Family Control_ average* are used as the dependent variable, respectively. The results reinforce our earlier findings and show that weaker contract enforcement causes firms to be more family-controlled.

The validity of our instrumental variable estimation hinges upon the satisfaction of the relevance condition and the exclusion restriction. The relevance condition is confirmed by the highly significant correlation between the instrumental variable and the effectiveness of contract enforcement (Panel B of Table 8), and the result of the Anderson canonical correlation LR statistic (Panel C of Table 8). Meanwhile, the concern for the weak instrument is ruled out by the large Shea partial R-squared and the result of the Cragg-Donald F-statistic (Panel C of Table 8).[7]

With regard to the exclusion restriction (i.e., the instrument variable does not affect family control of business through channels other than contract enforcement), we carry out a test following Acemoglu, Johnson, and Robinson (2002). This test is based on the premise that if the instrumental variable affects family control of business only through contract enforcement, then the instrumental variable should not have any significant impact on family control of business conditional on the effectiveness of contract enforcement. Indeed, as shown in Columns 3-4 of Table 8, the instrumental variable has a negative and significant impact on family control of business when it is used as the explanatory variable, but its significance disappears when *Contract Enforcement* is included as an additional explanatory variable.

For a further robustness check, we use an alternative instrumental variable. Specifically, we take the view that the effectiveness of contract en-

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[6]The classification of the legal origin for Shanghai and Tianjin requires some extra care because these two municipalities were occupied by several foreign powers. As over 60% of Shanghai's territories were occupied by Great Britain, it is classified to be administrated by Great Britain. Tianjin, however, is classified to be not administrated by Great Britain because only about 20% of its territories were occupied by Great Britain.

[7]The Cragg-Donald F-statistic values for our regressions are significantly above the value of 10, which is considered as the critical value by Staiger and Stock (1997).

forcement perceived by a firm is comprised of two components, a regional component and a firm-specific component. The first component is common to all firms located in the same region, while the second component captures the idiosyncratic factors specific to each firm. More importantly, since the regional component of contract enforcement is determined by the underlying factors at the regional level, such as the behavior of local government officials and the capability of local judges, it is thus exogenous to the firm. This enables us to use the regional average of other firms' perceptions on the effectiveness of contract enforcement as an instrument.[8] As shown in Column 5 of Table 8, our main results are robust to this alternative instrumental variable estimation.

Overall, our instrumental variable estimation results show that the effectiveness of contract enforcement has a negative and significant causal effect on the degree of family control of business.

3.5   Robustness Checks

Recall that there is a substantial attrition in sample size because a lot of firms do not answer the question regarding the effectiveness of contract enforcement. This may raise the concern that our estimation results could be biased due to this sample attrition problem, that is, firms that answer the question could be different from those that do not.[9] To address this possible concern, we use two recently developed methodologies on sample attrition bias. First, following Duflo (2001), we estimate the propensity of a firm to answer the survey question regarding contract enforcement based on firm and firm owner's characteristics, and then include the polynomial terms of the propensity in the main specification. Second, we use the inverse-probability-weighted (IPW) method developed by Wooldridge (2002, 2007), in which the inverse of the estimated propensity is used as the sample weight in the main specification. The estimation results using these two methods (reported in Table 9) show that contract enforcement still has a negative and statistically significant impact on the degree of family control of business, thereby ruling out the concern of sample attrition bias.

Next, we restrict our analysis to the subsample of firms, the main owner of which has 100% share of the firm. Firm owners in this subsample presumably worry more about the expropriation of their properties by professional managers and face greater difficulties in selling their companies to outside investors. The results are shown in Table 10, where *Family Control_pc* and

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[8]Fisman and Svensson (2007), for instance, use the same approach to construct instrumental variables.

[9]We thank an anonymous referee for pointing out this problem.

Family Control_average are used as the dependent variable in Columns 1-2, respectively. Clearly, our results are robust to this subsample.

For further robustness checks, we control for explanations for family control of business other than the contract enforcement argument. One hypothesis is that firm owners may have innate capabilities for running business, and hence are more likely to have family control of business (Demsetz and Lehn, 1985). A proxy for such innate capabilities of firm owners is the entrepreneurship of their family members.[10] Meanwhile, it has been argued that firms with a greater need for external finance may have to sell their shares to outside investors, thereby diluting their family control of business (Burkart, Panunzi, and Shleifer, 2003). A proxy for the need for external finance is the degree of corporate diversification (i.e., the number of business segments). Moreover, in developing countries such as China where the managerial labor market is underdeveloped, firm owners may encounter difficulties in identifying and retaining reliable professional managers, hence the high degree of family control of business.

To control for these alternative explanations for family control of business, we include *Entrepreneurship of Family Members* (the fraction of the firm owner's grandfather, father, mother, and spouse being self-employed), *Diversification* (the number of business segments), and *Difficult to Find Reliable Managers* (an indicator of difficulty in finding reliable professional managers) individually and collectively, and report the regression results in Table 11. It is found that *Contract Enforcement* always has a negative and statistically significant impact on the degree of family control of business. Of the three alternative explanations for the family control of business, we find support for *Diversification* and *Difficult to Find Reliable Managers*, but not *Entrepreneurship of Family Members*.

4   Conclusion

Family control of business is a widely-observed phenomenon in developing economies. One of the leading theories suggests that it is a response to weak contract enforcement in such economies (Burkart, Panunzi, and Shleifer, 2003; Caselli and Gennaioli, 2005). However, empirical evidence on the relevance of this theory remains limited.

In this paper, using a sample of China's private firms, we investigate the impacts of contract enforcement on the degree of family control of business.

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[10]Recent studies by Djankov, Qian, Roland, and Zhuravskaya (2006a, 2006b) find that entrepreneurs in China tend to have more entrepreneurs in their families than non-entrepreneurs.

We find that weaker contract enforcement is associated with a higher degree of family control of business. To alleviate the concern that our results could be biased due to omitted variables and reverse causality, we experiment with a host of control variables and a regional level measure of the effectiveness of contract enforcement, and find that our results are robust. Furthermore, we use the instrumental variable estimation to deal with the possible endogeneity problems, and establish that weaker contract enforcement causes firms to be more family-controlled. The results of this study highlight the importance of economic institutions on corporate decisions in developing economies.

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Table 1: Correlations between various measures of family control of business

	Operations Decisions	Wages and Benefits	HRM Decisions	Long-term Development	Family Firm_pc	Family Firm_average
Operations Decisions	1.0000					
Wages and Benefits	0.7472	1.0000				
HRM Decisions	0.7283	0.7809	1.0000			
Long-term Development	0.3604	0.3725	0.3266	1.0000		
Family Firm_pc	0.8886	0.9104	0.8935	0.5524	1.0000	
Family Firm_average	0.8704	0.8883	0.8699	0.6319	0.9951	1.0000

Table 2: Patterns of family control of business in China (full sample)

	Operations Decisions	Wages and Benefits	HRM Decisions	Long-term Development	Family Firm_pc	Family Firm_average
Across Regions						
Beijing	0.228	0.186	0.236	0.277	-0.640	0.229
Tianjin	0.326	0.283	0.311	0.356	-0.258	0.322
Hebei	0.391	0.305	0.367	0.391	-0.091	0.363
Shanxi	0.500	0.500	0.560	0.380	0.462	0.485
Inner Mongolia	0.520	0.500	0.540	0.327	0.460	0.480
Liaoning	0.616	0.598	0.640	0.445	0.848	0.578
Jilin	0.276	0.379	0.393	0.370	-0.212	0.333
Heilongjiang	0.441	0.441	0.492	0.458	0.305	0.458
Shanghai	0.360	0.292	0.335	0.309	-0.256	0.318
Jiangsu	0.431	0.371	0.389	0.434	0.083	0.406
Zhejiang	0.438	0.398	0.458	0.437	0.199	0.432
Anhui	0.310	0.268	0.338	0.420	-0.205	0.341
Fujian	0.324	0.282	0.380	0.338	-0.155	0.345
Jiangxi	0.385	0.333	0.282	0.211	-0.253	0.309
Shandong	0.382	0.366	0.371	0.433	0.008	0.389
Henan	0.467	0.419	0.467	0.397	0.254	0.441
Hubei	0.318	0.183	0.274	0.265	-0.467	0.269
Hunan	0.342	0.263	0.459	0.378	-0.152	0.347
Guangdong	0.393	0.348	0.404	0.413	0.010	0.387
Guangxi	0.341	0.366	0.390	0.366	-0.066	0.366
Hainan	0.674	0.533	0.543	0.630	0.820	0.589
Chongqing	0.286	0.196	0.232	0.250	-0.578	0.241
Sichuan	0.333	0.345	0.341	0.298	-0.233	0.320
Guizhou	0.370	0.326	0.326	0.359	-0.157	0.345
Yunnan	0.521	0.479	0.500	0.500	0.476	0.500
Shaanxi	0.487	0.387	0.480	0.347	0.204	0.425
Gansu	0.448	0.345	0.483	0.241	0.044	0.379
Qinghai	0.500	0.200	0.300	0.400	-0.160	0.350
Ningxia	0.417	0.292	0.292	0.435	-0.082	0.370
Xinjiang	0.396	0.375	0.438	0.521	0.164	0.432
Across Firm Size						
Small (bottom quarter)	0.586	0.554	0.579	0.519	0.739	0.560
Medium (second quarter)	0.439	0.374	0.414	0.425	0.125	0.415
Large (third quarter)	0.339	0.282	0.331	0.320	-0.277	0.315
Very Large (top quarter)	0.290	0.238	0.291	0.303	-0.421	0.281
Across Firm Age						
Less than 10 years	0.368	0.322	0.355	0.362	-0.137	0.350
More than 10 years	0.424	0.369	0.418	0.396	0.085	0.403
Mean	0.402	0.351	0.394	0.383	0.000	0.383

Table 3: Patterns of family control of business in China (regression sample)

	Operations Decisions	Wages and Benefits	HRM Decisions	Long-term Development	Family Firm_pc	Family Firm_average
Across Regions						
Beijing	0.217	0.109	0.174	0.283	-0.796	0.196
Tianjin	0.100	0.100	0.100	0.000	-1.212	0.075
Hebei	0.452	0.387	0.581	0.290	0.239	0.427
Shanxi	0.250	0.125	0.250	0.250	-0.680	0.219
Inner Mongolia	0.571	0.643	0.500	0.143	0.475	0.464
Liaoning	0.667	0.611	0.717	0.453	1.053	0.625
Jilin	0.000	0.000	0.000	0.250	-1.376	0.063
Heilongjiang	0.077	0.154	0.154	0.462	-0.797	0.212
Shanghai	0.209	0.186	0.190	0.247	-0.744	0.202
Jiangsu	0.328	0.262	0.252	0.341	-0.356	0.300
Zhejiang	0.333	0.289	0.444	0.422	-0.065	0.372
Anhui	0.375	0.333	0.333	0.478	-0.001	0.391
Fujian	0.167	0.160	0.280	0.280	-0.648	0.227
Jiangxi	0.667	0.444	0.444	0.000	0.191	0.389
Shandong	0.294	0.294	0.294	0.309	-0.346	0.298
Henan	0.273	0.364	0.273	0.455	-0.213	0.341
Hubei	0.333	0.200	0.400	0.286	-0.236	0.321
Hunan	0.273	0.273	0.500	0.455	-0.042	0.375
Guangdong	0.333	0.352	0.370	0.389	-0.097	0.361
Guangxi	0.167	0.167	0.167	0.083	-0.930	0.146
Hainan	0.429	0.308	0.429	0.429	-0.079	0.365
Chongqing	0.143	0.071	0.071	0.286	-1.032	0.143
Sichuan	0.400	0.400	0.385	0.269	-0.049	0.354
Guizhou	0.379	0.345	0.310	0.379	-0.128	0.353
Yunnan	0.571	0.536	0.607	0.607	0.790	0.580
Shaanxi	0.417	0.313	0.417	0.250	-0.095	0.349
Gansu	0.583	0.417	0.500	0.250	0.301	0.438
Qinghai	0.667	0.000	0.333	0.333	-0.217	0.333
Ningxia	0.429	0.429	0.429	0.429	0.188	0.429
Xinjiang	0.529	0.412	0.588	0.412	0.445	0.485
Across Firm Size						
Small (bottom quarter)	0.610	0.586	0.610	0.476	0.816	0.573
Medium (second quarter)	0.412	0.364	0.420	0.382	0.059	0.395
Large (third quarter)	0.275	0.242	0.309	0.292	-0.422	0.279
Very Large (top quarter)	0.245	0.181	0.218	0.265	-0.643	0.228
Across Firm Age						
Less than 10 years	0.299	0.260	0.300	0.328	-0.357	0.297
More than 10 years	0.384	0.332	0.382	0.336	-0.084	0.359
Mean	0.351	0.304	0.351	0.333	-0.188	0.335

Table 4: Summary statistics of key variables

Variable	Obs	Mean	Std. Dev.	Min	Max
Operations Decisions	3074	0.402	0.490	0.000	1.000
Wages and Benefits	3071	0.351	0.477	0.000	1.000
HRM Decisions	3069	0.394	0.489	0.000	1.000
Long-term Development	3049	0.383	0.486	0.000	1.000
Family Firm_pc	3033	0.000	1.650	-1.548	2.503
Family Firm_average	3033	0.383	0.396	0.000	1.000
Contract Enforcement	862	0.860	0.348	0.000	1.000
Education	3077	12.978	3.063	5.000	19.000
Age	3053	43.946	8.119	7.000	76.000
Gender	3079	1.112	0.315	1.000	2.000
CPC Membership	3084	0.176	0.381	0.000	1.000
CPPCC Membership	3084	0.351	0.477	0.000	1.000
Firm Size	2774	6.344	1.735	0.693	13.911
Firm Age	3069	2.369	0.557	0.000	3.611
Entrepreneurship of Family Members	3084	0.047	0.140	0.000	1.000
Diversification	2936	0.337	0.644	0.000	3.000
Difficult to Find Reliable Managers	3025	0.669	0.471	0.000	1.000

Table 5: Benchmark results

Dependent Variable	1 Operations Decisions	2 Wages and Benefits	3 HRM Decisions	4 Long-term Development	5 Family Firm_pc	6 Family Firm_average
Contract Enforcement	-0.475***	-0.477***	-0.457***	-0.504***	-0.725***	-0.181***
	(-3.29)	(-3.03)	(-2.69)	(-3.92)	(-3.28)	(-3.44)
Controls						
Logarithm of GDP per capita	-0.332***	-0.314***	-0.302***	-0.044	-0.365***	-0.083***
	(-4.35)	(-3.65)	(-3.99)	(-0.64)	(-4.43)	(-4.23)
Chi2/F-statistic for Industry Dummies	[31.23]***	[24.95]**	[26.29]***	[22.24]**	[4.61]***	[4.92]***
Number of Observations	825	825	824	825	816	816
Pseudo R2/R-squared	0.0581	0.0563	0.0525	0.0387	0.0864	0.0864
Wald chi2/F-statistic	58.25	46.13	49.21	39.21	6.96	6.96
p-value	0.0000	0.0000	0.0000	0.0003	0.0000	0.0000

Note: Probit regressions are used in Columns 1-4 whereas ordinary-least-squares regressions are used in Columns 5-6. *t*-values, clustered at the industry/region level, are reported in the parenthesis. *, **, *** represent statistical significance at 10%, 5%, 1% respectively.

Table 6: Multivariate analysis

Dependent Variable	1 Family Firm_pc	2 Family Firm_pc	3 Family Firm_pc	4 Family Firm_average	5 Family Firm_average
Contract Enforcement	-0.558**	-0.622***	-0.726***	-0.159***	-0.184***
	(-2.53)	(-2.84)	(-3.03)	(-3.06)	(-3.25)
Controls					
Logarithm of GDP per capita	-0.278***	-0.147		-0.031	
	(-3.04)	(-1.57)		(-1.40)	
F-statistic for Industry Dummies	[3.40]***	[3.81]***		[3.93]***	
F-statistic for Industry * Region Dummies			[228.13]***		[225.63]***
Firm Owner's Human Capital					
Education	-0.106***	-0.081***	-0.110***	-0.019***	-0.026***
	(-5.16)	(-3.76)	(-4.78)	(-3.66)	(-4.67)
Age	0.017***	0.012**	0.011	0.003**	0.003*
	(2.65)	(1.77)	(1.56)	(2.01)	(1.83)
Gender	0.196	0.262	0.265	0.073	0.073
	(0.94)	(1.20)	(1.17)	(1.43)	(1.39)
Firm Owner's Political Capital					
CPC Membership	-0.217	0.005	0.019	-0.000	0.004
	(-1.45)	(0.03)	(0.12)	(-0.01)	(0.11)
CPPCC Membership	0.063	0.115	0.090	0.029	0.024
	(0.52)	(1.00)	(0.70)	(1.05)	(0.79)
Firm Characteristics					
Firm Size		-0.262***	-0.251***	-0.063***	-0.060***
		(-7.60)	(-7.24)	(-7.57)	(-7.20)
Firm Age		0.091	0.089	0.018	0.018
		(1.02)	(0.98)	(0.86)	(0.85)
Number of Observations	810	739	739	739	739
R-squared	0.1440	0.2242	0.2674	0.2257	0.2638
F-statistic	21.27	19.56	.	19.38	.

| p-value | 0.0000 | 0.0000 | . | 0.0000 | . |

Note: *t*-values, clustered at the industry/region level, are reported in the parenthesis. *, **, *** represent statistical significance at 10%, 5%, 1% respectively.

Table 7: Region-level analysis

Dependent Variable	1 Family Firm_pc	2 Family Firm_average
Contract Enforcement	-1.270***	-0.297***
	(-3.17)	(-3.21)
Controls		
Logarithm of GDP per capita	-0.123	-0.026
	(-1.26)	(-1.13)
F-statistic for Industry Dummies	[3.80]***	[3.92]***
Firm Owner's Human Capital		
Education	-0.082***	-0.019***
	(-3.98)	(-3.92)
Age	0.012*	0.003**
	(1.86)	(2.09)
Gender	0.249	0.069
	(1.13)	(1.35)
Firm Owner's Political Capital		
CPC Membership	-0.020	-0.006
	(-0.13)	(-0.15)
CPPCC Membership	0.025	0.008
	(0.23)	(0.29)
Firm Characteristics		
Firm Size	-0.261***	-0.063***
	(-7.75)	(-7.69)
Firm Age	0.098	0.020
	(1.07)	(0.90)
Number of Observations	739	739
R-squared	0.2219	0.2204
F-statistic	19.18	19.17
p-value	0.0000	0.0000

Note: *t*-values, clustered at the industry/region level, are reported in the parenthesis.
*, **, *** represent statistical significance at 10%, 5%, 1% respectively.

Table 8: Instrumental variable estimation

	1	2	3	4	5
Estimation	Panel A, Second Stage of TSLS		OLS		Panel A, Second Stage of TSLS
Dependent Variable	Family Firm_pc	Family Firm_average	Family Firm_pc	Family Firm_pc	Family Firm_pc
Contract Enforcement	-1.984*	-0.469*		-0.706***	-2.163***
	(-1.75)	(-1.75)		(-3.26)	(-4.51)
British Administration			-0.182**	-0.116	
			(-2.35)	(-1.10)	
Controls					
Logarithm of GDP per capita	-0.284***	-0.064***	-0.161***	-0.360***	-0.273***
	(-2.85)	(-2.73)	(-2.62)	(-4.34)	(-3.16)
Chi2/F-statistic for Industry Dummies	[69.05]***	[74.39]***	[4.59]***	[4.61]***	[68.62]***
	Panel B, First Stage of TSLS Dependent Variable Contract Enforcement				Panel B, First Stage of TSLS Dependent Variable Contract Enforcement
British Administration	0.091***	0.091***			
	(2.86)	(2.86)			
Regional Average of Other Firms' Responses					0.818***
					(9.95)
	Panel C, Various First Stage Tests				Panel C, Various First Stage Tests
Anderson Canonical Correlation LR Statistic	[12.85]***	[12.85]***			[26.87]***
Shea Partial R-squared	0.0148	0.0148			0.1351
Cragg-Donald F-Statistic	13.36	13.36			42.41
No. of Observations	816	816	816	816	816

Note: *t*-values, clustered at the industry/region level, are reported in the parenthesis. *, **, *** represent statistical significance at 10%, 5%, 1% respectively. The first stages of TSLS have the same controls as those in the second stage of TSLS but their results are not reported to save space (available upon request).

Table 9: Sample attrition issue

	1	2	3	4
Estimation	OLS		WLS	
Dependent Variable	Family Firm_pc	Family Firm_average	Family Firm_pc	Family Firm_average
Contract Enforcement	-0.625***	-0.160***	-0.881***	-0.222***
	(-2.90)	(-3.12)	(-4.09)	(-4.34)
Probability of Mis-reporting	-0.581	-0.131		
	(-0.90)	(-0.87)		
Probability of Mis-reporting ^ 2	0.594	0.146		
	(1.50)	(1.57)		
Controls				
Logarithm of GDP per capita	-0.168*	-0.036*	-0.387***	-0.089
	(-1.96)	(-1.75)	(-3.96)	(-3.76)
F-statistic for Industry Dummies	[4.26]***	[4.28]***	[4.94]***	[5.18]***
Number of Observations	741	741	741	741
R-squared	0.2131	0.2137	0.1033	0.1047
F-statistic	15.29	14.91	7.14	7.40
p-value	0.0000	0.0000	0.0000	0.0000

Note: *t*-values, clustered at the industry/region level, are reported in the parenthesis. *, **, *** represent statistical significance at 10%, 5%, 1% respectively.

Table 10: Sub-sample

Dependent Variable	1 Family Firm_pc	2 Family Firm_average
Contract Enforcement	-0.735**	-0.175**
	(-2.56)	(-2.55)
Controls		
Logarithm of GDP per capita	-0.439**	-0.098**
	(-2.25)	(-2.09)
F-statistic for Industry Dummies	[2.20]**	[2.10]**
No. of Observations	307	307
R-squared	0.1041	0.1009
F-statistics	3.22	3.06
p-value for F-statistics	0.0002	0.0004

Note: *t*-values, clustered at the industry/region level, are reported in the parenthesis. *, **, *** represent statistical significance at 10%, 5%, 1% respectively.

Table 11: Controls for other explanations

Dependent Variable	1 Family Firm_pc	2 Family Firm_pc	3 Family Firm_pc	4 Family Firm_pc	5 Family Firm_average
Contract Enforcement	-0.727***	-0.677***	-0.674***	-0.626***	-0.156***
	(-3.32)	(-3.09)	(-3.06)	(-2.88)	(-3.01)
Entrepreneurship of Family Members	-0.469			-0.459	-0.104
	(-1.12)			(-1.14)	(-1.08)
Diversification		-0.251***		-0.256***	-0.061***
		(-3.50)		(-3.55)	(-3.61)
Difficult to Find Reliable Managers			0.576***	0.603***	0.156***
			(5.59)	(5.94)	(6.32)
Controls					
Logarithm of GDP per capita	-0.367***	-0.406***	-0.353***	-0.394***	-0.089***
	(-4.48)	(-4.62)	(-4.18)	(-4.41)	(-4.19)
F-statistic for Industry Dummies	[4.70]***	[8.47]***	[3.38]***	[2.97]***	[2.75]***
No. of Observations	816	816	806	806	806
R-squared	0.0877	0.0994	0.1168	0.1321	0.1372
F-statistics	6.61	32.61	8.31	26.13	22.69
p-value for F-statistics	0.0000	0.0000	0.0000	0.0000	0.0000

Note: *t*-values, clustered at the industry/region level, are reported in the parenthesis. *, **, *** represent statistical significance at 10%, 5%, 1% respectively.