THE BRAIN GAIN OF CORPORATE BOARDS: A NATURAL EXPERIMENT FROM CHINA

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Abstract
This paper establishes a channel through which the returnee emigrants’ acquisition of foreign human capital may benefit a large emerging market like China: the brain gain in the corporate boards of publicly listed companies. To establish causality, we exploit that at different times, Chinese provinces introduced policies to attract highly talented emigrants studying or working abroad. These policies led to an exogenous increase in the supply of individuals with foreign experience in the local labor market and ultimately increased the likelihood that firms in these provinces had directors with foreign experience in comparison to firms with similarly high demand for these skills elsewhere. We document that hiring directors with foreign experience results in higher firm valuation, productivity and profitability. Furthermore, corporate governance improves and firms are more likely to make international acquisitions, to export, and to raise funds internationally. These results indicate that the transfer of knowledge to emerging markets may occur not only through foreign investment, but also through labor flows and, in particular, return migration.
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JEL Classification: D22, D80, F21, F22, G30, J24
1. INTRODUCTION

Development economists have long warned about the costs for developing countries of the emigration of the best and brightest that decamp to universities and businesses in the developed world (Bhagwati, 1976). While this brain drain has attracted a considerable amount of economic research, more recently, arguments have been raised that the emigration of the brightest may actually benefit developing countries, because emigrants send remittances and may eventually return with more knowledge and organizational skills.\(^1\) Thus, the brain drain may actually become a brain gain.

In this paper, we highlight a specific channel through which the brain gain arising from return migration to emerging markets may benefit the overall economy: the brain gain in the corporate boards of publicly listed companies. Specifically, we explore the effects of individuals with foreign experience joining the boards of directors on firms’ performance and corporate policies in China.

We expect that the arrival of individuals with foreign experience in the board of listed companies can enhance the firms’ productivity and performance, because board members perform an important advisory role for the management (Fama and Jensen, 1983). Board members with foreign experience having learnt how foreign organizations work may facilitate the adoption of superior management practices, which as shown by Bloom and Van Reenen (2010) greatly enhance the performance and productivity of firms in advanced economies. Board directors with foreign experience could thus help bridging the large productivity gaps that persist across countries and firms (Hall and Jones, 1999; Jones and Romer, 2009).

Directors with foreign experience may also perform more effectively the monitoring function of the board and help improve firm level corporate governance, not only thanks to the foreign expertise accumulated abroad, but also because being relatively disenfranchised from local ties, they may have stronger incentives to pursue profitability rather than pleasing politicians and other local constituencies.

\(^1\) See The Economist, May 26, 2011.
It is empirically challenging to establish in a casual way whether directors with foreign experience affect firm performance in developing countries. In particular, firms with certain characteristics may select or attract directors with foreign experience. We surmount this challenge by exploring this research question using a unique dataset from China. We hand-collect information on foreign education, work experience and other demographic characteristics from the bios of 29,461 executive and non-executive directors of 1,673 publicly listed companies from 1999 to 2009. We consider an individual to have foreign experience if he or she obtained education and/or worked outside Mainland China.

China provides a unique environment to address the endogeneity problems for the following reasons. First, Chinese firms face talent shortage in filling managerial positions. Since individuals with foreign experience are scarce, not all firms with similarly high demand for directors with foreign experience are able to attract one. Second and most importantly, during the sample period, almost all provinces, at different times, introduced incentives, especially under the form of tax breaks, for highly skilled individuals with foreign experience to return. Since the labor market for board directors is largely local (Knyazeva, Knyazeva and Masulis, 2011), the introduction of the provincial policies determined exogenous changes in the supply of potential directors with foreign experiences in different provinces.

Not being directed at listed companies, the timing of the introduction of the incentives was largely independent from the characteristics and growth opportunities of the firms in our sample (an assumption that we test in a number of ways described below) and was rather determined by how progressive the provincial government was. We show that after the policy changes, the number of directors with foreign experience increases more for firms headquartered in the provinces adopting the policies than for comparable firms elsewhere. This is the case not only because some individuals return and become executive directors of the company as well as board members, but mostly because there is a larger pool of individuals with foreign experience working in the area who can also become independent directors. Since the increase in board members with
foreign experience provoked by the provincial policy changes is extremely unlikely to have coincided with changes in the demand for directors with these skills, we can interpret any effect of board members with foreign experience on firm performance as a causal effect.

We find that when individuals with foreign experience join the board of a company, the firm’s valuation improves and its total factor productivity increases. Furthermore, in the subsequent years, the firm’s profitability increases. We also find evidence that the way in which firms are run changes. First, firms’ propensity to manage earnings decreases, indicating that corporate governance improves. Second, among the firms that make mergers and acquisitions, the ones with board members with foreign experience are more likely to make an international merger or acquisition. This suggests that these firms are able to access a broader range of investment opportunities. Similarly, firms with board members with foreign experience are able to access more sources of external financing, as they are more likely to engage a foreign investor when raising capital through private placements than other firms without directors with foreign experience. Lastly, firms with board directors with foreign experience increase overseas sales. This suggests that firm performance improves because, among other effects, directors with foreign experience facilitate the adoption of strong practices of corporate governance and internationalization.

We provide a number of further tests supporting the mechanism behind the causal interpretation of the empirical evidence. First, we estimate various models including province fixed effects, firm fixed effects and control for changing economic conditions across provinces and across industries over time. All these tests, even when we exploit only differences in firms’ ability to attract directors with foreign experience within the same province, are fully consistent with our previous results and strongly support the positive causal effect of board members with foreign experience on firm performance.

Second, we show that the policy changes affect positively firm performance only for firms that actually end up hiring a director with foreign experience, thus supporting our identifying assumption that the increase in supply is truly exogenous and unrelated to province-specific growth
opportunities. This evidence also suggests that hiring directors with foreign experience is crucial and that our results are unlikely to be driven by similar talent hired at a lower rank.

Third, we find that firms employing a director with foreign experience do not pay (all) their directors more nor do they pay directors with foreign experience more than the other directors they employ. This suggests that no bidding process occurred and that these directors did not sort across firms on the basis of firms’ unobservable characteristics.

Finally, since individuals with foreign experience are a relatively scarce resource in China and there exist companies that would like to employ directors with foreign experience, but are unable to do so for idiosyncratic reasons, we can use propensity scores to compare the performance of similar companies with and without directors with foreign experience. All these tests consistently indicate a positive causal impact of directors with foreign experience on firm performance.

This paper is related to a growing literature exploring the effects of board expertise and structure on performance (e.g., Cole, Daniel and Naveen, 2008; Klein, 1998). Adams, Hermalin and Weisbach (2010) provide a recent and comprehensive survey of this literature. Ahearn and Dittmar (2011) explore the causal effect of changes in board composition on firm performance using the introduction of gender quotas in Norway. Particularly related to us are papers exploring how directors’ expertise affects corporate decisions and corporate governance. Most of these papers, spurred by Sarbanes Oxley, focus on the effects of board independence and financial expertise (Guthrie, Sokolowsky and Wan, 2012; Chhaochharia and Grinstein, 2009; Guner, Malmendier and Tate, 2008; Agrawal and Chadha, 2005). To the best of our knowledge, this is the first paper exploring the effect of foreign experience and returnee migrants in corporate boards. Furthermore, while most of the existing literature focuses on the US, we explore the role of boards in an emerging market. Since underdeveloped financial systems lack sophisticated gatekeepers (e.g., domestic and foreign institutional investors and analysts) monitoring listed companies (Stulz, 1999), the impact of the advisory and monitoring role of the board is potentially larger.
Our work is also related to the literature exploring how foreign investment and foreign acquisitions improve firm performance (e.g., Rossi and Volpin, 2004). We highlight that these benefits can accrue not only through foreign investment, but also by engaging individuals with certain skills in firm management and monitoring.

The rest of the paper is organized as follows. Section 2 discusses the institutional background in China and our research setting. Section 3 introduces our data sources and sample constructions. Section 4 describes our identification strategy. Sections 5 and 6 present the empirical results. Section 7 discusses the robustness tests. Section 8 concludes the paper. Variable definitions are in the Appendix.

2. BACKGROUND

2.1. The Chinese Environment

China is the largest emerging market and has experienced spectacular economic growth since the late 1970s, when it initiated an overhaul of its economic system. While the economy has a large surplus of unskilled labor, there exists a significant talent shortage. Multinational companies find that few Chinese university graduates have the necessary skills for service occupations, such as engineers, finance workers, accountants, quantitative analysts, generalists and life science researchers (Farrell and Grant, 2007). Little practical experience in projects or teamwork, poor English and, more in general, poor communication style and cultural fits are commonly adduced as limitations of local hires. Crucially, domestic firms with increasing global aspirations also have difficulties finding suitable employees for managerial positions.

Farrell and Grant estimate that over the next 10 to 15 years, firms active in China will need 75,000 leaders who can work effectively in an international environment; however, today they have only 3,000 to 5,000. This managerial talent mostly comes from expatriates who have worked or studied in developed economies. While availability of individuals is scarce, the policies we describe in Section 2.2 have been aimed at reducing this scarcity.
Another problem constraining the growth of Chinese firms is poor corporate governance and, in particular, poor disclosure (Green, 2003; Gul, Kim and Qiu, 2010). In this regard, the board of directors may perform an important monitoring role. Newcomers that have been exposed to governance practices in developed countries may educate and coax the older guard of directors to begin to adhere to international standards of governance (Khanna, 2008).

Scarcity of managerial talent and poor corporate governance are problems common to many emerging markets. For this reason, we believe that from the experience of China, we can draw broader conclusions on the effects of directors with foreign experience on firm performance in emerging markets.

2.2. The Policies to Attract Highly Skilled Emigrants

While the Chinese political elite often had periods of studies abroad, the flows of students from China towards universities in the developed world became sizable in the early 1990s. After obtaining their foreign education, many of these Chinese individuals also gained foreign work experience. Starting from the early 2000s, tens of thousands of individuals trained abroad have been returning to China. According to the China Statistical Yearbook 2006, while the number of individuals with foreign training returning to China in 1995 was about 5,000, the number of returnees had reached 35,000 in 2006. These returnees, often called “sea turtles”, are mostly foreign-trained scientists and academics, who once in China may join corporate boards as dependent or independent directors.

The inversion of brain drain was fostered by an environment of economic growth and political stability. However, central government policies and inter-regional competition have favored the process. Starting in late 1990s, China’s central government has adopted a series of national policies and reforms, which made the domestic business and social environment more attractive to highly talented emigrants (Zweig, 2006). In 2001, the central government formally introduced a policy allowing and encouraging overseas students and scholars to “serve the country” in various forms
including temporary work and research visits. At different times, both before and after the central government, different local governments enacted policies to attract highly skilled emigrants. The preferential policies instituted by local governments include tax breaks, subsidized housing, tax-free imports of automobiles and computers, schooling for the children of the returnees, local grants and awards, medical benefits, jobs for spouses, and long-term residence permits.

We collect data on the timing of the incentives introduced by the central and the local governments in Mainland China from Wang, Zeng, and Pu (2011). Table 1 provides detailed information on the timing of these policies. It is apparent that an earlier adoption of the policies for reverting the brain drain is not necessarily related to the regional economic development: While the highly developed Beijing and Guangdong were early adopters (in 2001 and 1999, respectively), so was the far less developed Inner Mongolia (in 2001). Shanghai implemented similar policies only in 2005.

The main target of the policies was increasing the quality of academic and industrial research in China as well as fostering entrepreneurial activity and the entry of new businesses. The policies were not explicitly designed to attract directors (or other employees) for listed companies, but created a large pool of skilled individuals from which the board members of listed companies could be drawn.

Figure 1 provides a first glance on the relevance of the policies in explaining subsequent changes in board composition. On the aggregate, while in 1999 only 150 sample firms had at least one director with foreign experience, by the end of the sample about 600 firms had at least one director with foreign experience. Using the policy changes as instruments, in what follows, we capture the change in the proportion of board members with foreign experience due to the (exogenous) increase in the supply of individuals with these skills in the provinces adopting the policies. Being determined by an exogenous increase in supply, the change in individuals with

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2 In other words, we explore the effects of directors with foreign experience joining the board of firms located in 22 provinces, 5 autonomous regions, and 4 municipalities (Beijing, Chongqing, Tianjin, and Shanghai). The municipalities are directly governed by the central government and enjoy the same administrative and legislative status as other provinces and autonomous regions.
foreign experience is less likely to be related to unobserved firm factors affecting firms’ demand for directors and subsequent performance. We can thus identify the causal effect of board members with foreign experience on firm performance.

3. DATA AND SAMPLE CHARACTERISTICS

3.1. Data sources and sample construction

We hand-collect information on the foreign education and the work experience of executive and non-executive directors of all Chinese non-financial companies that are publicly traded on the Chinese A-share markets during the period of 1999-2009.³ We manually collect the directors’ bios from sina.com.cn finance and the companies’ annual reports. We screen over 29,461 directors’ bios and cross-verify the information obtained from the bios through various news and internet searches. In this way, we obtain information on any academic degrees that the board member obtained abroad, on the academic institution granting the degree, on whether the director has worked abroad, and on the country where the director studied or gained work experience. Chinese individuals who worked for a foreign branch of a Chinese company, or individuals who worked for a Chinese domestic branch of a foreign company or joint ventures are not considered to have foreign work experience.

To be included in our sample, directors must be affiliated with companies with basic accounting and market information. We extract accounting and stock price information for all sample firms from the China Stock Market & Accounting Research Database (CSMAR), designed

³ Historically, China’s capital controls have limited investors in mainland China from investing abroad, and foreigners from investing in the stock markets in mainland China. Chinese firms may have three categories of shares: A shares, B shares, and H shares. A-shares are publicly traded shares of Chinese listed companies, which are meant to be primarily for domestic individual investors and legal persons, such as domestic companies and joint ventures. Starting 2002, under a regulated structure known as the Qualified Foreign Institutional Investor System (QFII), foreign investors are permitted to purchase A shares in China. A limited number of companies incorporated in mainland China are also traded in the domestic B-share market. These shares are quoted in foreign currencies and could be traded only by foreign investors. Starting from March 2001, domestic investors can trade B shares (using legal foreign currency accounts). Lastly, a limited number of firms incorporated in mainland China can issue shares on the Hong Kong Stock Exchange. These shares are termed H shares. In our sample, there are 52 firms that have issued H shares during the sample period. Before the 2005-2006 ownership reform, Chinese firms also had non-tradable shares, which were held by the government and other domestic institutions.
and developed by GTA Information Technology, one of the major providers of Chinese data. After excluding firms with missing financial statements, our sample includes 1,738 firms for a total of 14,427 firm-year observations. We then apply the following filtering criteria. We first exclude 176 firm-year observations with missing information on year-end market value of equity, and 175 firm-year observations with a market-to-book ratio greater than 10. Next, we remove 1,115 firm-year observations with missing information on expenditures for material and services, or with less than 200 employees. We further exclude 6 firm-year observations for firms whose board consists of less than 2 directors, and 6 firm-year observations with missing industry information. Our final sample consists of 1,673 unique firms and 12,949 firm-year observations; when we consider the dataset at the director level, we have a total of 125,720 individual-firm-year observations.

From the CSMAR database, we also obtain information on the number of board members, their tenure, and the top 10 shareholders of each sample firm. We manually identify whether any of the top 10 largest shareholders is foreign through internet searches. Our definition of foreign ownership includes foreign institutional, corporate and individual investors, who hold shares of Chinese publicly traded companies (shares include A shares, B shares, H shares, and/or non-tradable shares). The definition of foreign ownership excludes the holdings of foreign branches of Chinese firms.

Lastly, we obtain from the CSMAR database information on private placements, foreign mergers and acquisitions, and foreign sales. We manually verify the presence of foreign investors in private placements. Information on foreign sales is based on regional sales breakdowns from Supplement Information on Sales in the annual reports. Firms with overseas sales generally provide information on the regional breakdown of their sales. Thus, if this information is missing, we set the firm’s foreign sales to zero.

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4 Private placements by Chinese firms become common after 2006. Therefore, our sample period for private placements is 2006-2009.
5 CSMAR began reporting the Supplement Information on Sales in 2002. We manually collect data on foreign sales for 2000-2001. None of our sample firms disclose their sales by region in 1999. Therefore, the sample period for the foreign sales is 2000-2009.
Information on firms’ industries and government ownership is from the CCER China Economic and Financial Database, managed by SinoFin Information Services. Firms are classified as state-owned if their largest ultimate shareholders are either the central or a provincial government.

Finally, we use the Academic Ranking of World Universities (2003-2010) to classify the quality of the foreign education obtained by the directors in our sample.

3.2. Descriptive Statistics

Table 1 shows the number of firms and the number of firm-years affected by the policies. The number of firms in different cities and provinces is such that each year we have a large sample of firms that are unaffected. For instance, our sample includes 104 unique firms (738 firm-year observations) headquartered in Beijing; 153 unique firms (1,237 firm-year observations) headquartered in Shanghai; 114 unique firms (751 firm-year observations) headquartered in Shenzhen.

Panel A of Table 2 presents the main characteristics of the director level dataset. About 5.3 percent of the observations (or 6,665 director-firm-year observations) involve directors with some foreign education; of these, 2.5 percent of, or 3,494 director-firm-year observations refer to directors that made short-term visits or post-docs in foreign academic institutes (including short-term training); 755 director-firm-year observations refer to directors with foreign bachelor degrees; 1,761 director-firm-year observations refer to directors with foreign master degrees; and 1,132 director-firm-year observations refer to directors with foreign doctoral degrees.

Most of the directors with foreign experience have periods of study or work in the US (2,656 director-firm-year observations), followed by the UK (776 director-firm-year observations), Japan (705 director-firm-year observations), Hong Kong (529 director-firm-year observations), Canada (410 director-firm-year observations) and Germany (325 director-firm-year observations). A considerable number of directors have foreign experience in a variety of other countries, such as
Australia, Singapore and Sweden. Thus, our data truly capture foreign experience and not experience in a particular country such as the US. Thus, it is a director’s foreign experience, rather than exposure to some specific culture or language, which likely explains our findings.

Besides foreign experience, we collect information on other characteristics of board members that are generally used in the literature. Starting from 2005, CSMAR reports a flag for directors that have positions in other companies. This flag indicates that being a board member is not the primary (or, at least, the only) occupation of the director. We next report two alternative definitions of independent directors. The first one is a definition of independence that captures whether the director is also an executive of the firm. Slightly over 60 percent of the directors can be defined independent according to this definition. The second definition of independence is broader and, as in the U.S. post Sarbanes-Oxley, aims to capture individuals who are not affiliated with the firm, except as directors, and do not have a relationship with the company that would interfere with their “independent judgment”. According to the second definition, executives of the parent company or individuals who obtain fees as consultants are not considered independent.6

Panel B of Table 2 describes the main variables at the firm level. We start by listing our performance measures: the firm’s market to book ratio, a measure of firm profitability, the ROA, and total factor productivity. As is common in the literature (see, for instance, Schoar, 2002), the firm’s total factor productivity is obtained as the residual, $\hat{\epsilon}_{it}$, of the following firm level regression

$$ y_{ijt} = \alpha_j + \beta_{jt} l_{ijt} + \gamma_{jt} k_{ijt} + \delta_{jt} m_{ijt} + \epsilon_{ijt}, $$

where $y_{ijt}$ are the sales of firm $i$ belonging to industry $j$ during year $t$, $l_{ijt}$ is the number of workers of firm $i$ during year $t$, $k_{ijt}$ is the total assets of firm $i$ during year $t$, and $m_{ijt}$ are the expenses for material and other inputs of firm $i$ during year $t$. We estimate all equations by industry and year. For this reason, our estimate of total factor productivity captures the firm’s rank within its industry in a given year, with more productive firms having higher rank.

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6 China did not enforce the presence of independent directors until 2001.
We then present the variables capturing the experience of the directors at the firm level. While in the empirical analysis we almost exclusively rely on the proportion of board members with foreign experience, we also report their number or a dummy variable taking value 1 if the firm has a director with foreign experience and taking value zero otherwise. Approximately 35 percent of the observations in our sample refer to firm-years in which firms have at least one director with foreign experience.7

Our dataset contains information on board structure and ownership structure. On average, Chinese firms have slightly less than 10 board members. Thus, board size is slightly smaller than in the U.S. where, for instance, on average, listed companies have about 12 directors (Yermack, 1996).

We control for the percentage ownership of the largest shareholder. Existing literature (e.g., Morck, Shleifer and Vishny, 1988; McConnell and Servaes, 1990) highlights that ownership concentration may improve performance, because it strengthens shareholders’ incentives to monitor. We also control for government ownership, which is particularly important in China. Central and local governments own shares in over 70 percent of the firm-year observations in our sample.

Last, but not least, foreign ownership is an important control in our analysis. Foreign blockholders are believed to bring superior technology, organizational capital, and access to international capital markets (see for instance, Chari, Chen and Domínguez 2009; Haskel, Pereira and Slaughter, 2007; Desai, Foley and Forbes, 2007). To the extent that firms with a foreign blockholder are more likely to engage directors with foreign experience, without including this control, we could erroneously ascribe changes in performance due to changes in foreign ownership to changes in board attributes.

7 In unreported specifications, we also distinguish between directors with foreign experience that are directly involved in management (such as CEOs and Chairmans of Board) and other directors with foreign experience. While our findings are qualitatively invariant, we do not find any differences between the two, highlighting the importance of the advising and monitoring role of the board.
In Panel A of Table 3, we compare firms with and without directors with foreign experience. There is preliminary evidence that firms that employ directors with foreign experience tend to have higher total factor productivity and profitability (ROA) and make more foreign M&A transactions. These firms, however, are also bigger, have larger board size, more foreign ownership indicating that these are important controls in our analysis. Furthermore, on average, they do not have higher growth opportunities because their market to book ratio is smaller than for firms without foreign directors.

Panel B of Table 3 reports the industry distribution of firms with directors with and without foreign experience. While all industries have firms with directors with foreign experience, the industries in which more firms do so are machinery, gas and chemistry, metal, information technology and pharmaceutical products. Unsurprisingly, these are industries in which scientific knowledge acquired abroad may play a particularly important role.

4. IDENTIFICATION

Identifying the causal effect of board expertise on performance poses serious challenges because firms choose board structure optimally. In particular, firms with higher growth opportunities could select board members with foreign expertise. We argue that our sample of Chinese firms is ideal to explore this challenging issue because given the scarcity of individuals with foreign experience, not all firms that would like to hire directors with foreign experience are able to do so. Since the labor market for board directors is largely local (Knyazeva, Knyazeva and Masulis, 2011), the provincial policies to attract highly skilled returnee emigrants cause an exogenous change in the supply of individuals with these skills that can join the board. We show below that the provincial policies indeed increase the likelihood that firms in the affected provinces are successful in hiring a board member with foreign experience and, most importantly, there is no reason to believe that the adoption of the policies occurs contextually to a change in the firms’
demand for directors with foreign experience. The policies can thus allow us to identify the causal effect of hiring directors with foreign experience.

In our tests, we use a dummy variable based on the timing of the policy changes as instrument to capture the plausibly exogenous variation in the proportion of directors with foreign experience. In addition, Beijing, Shanghai and Guandong attract most of the internal white and blue collar migration and also returnee emigrants may have a higher propensity to return to these areas, because they provide higher living standards, infrastructure, and economic opportunities (although the firms in these provinces do not perform better and are in all similar to other listed companies in our sample before the introduction of the policy). For this reason, we also present results in which we allow the policy changes to have an effect only for these cities. Furthermore, we allow the effect of the policies to differ across these provinces using policy dummies that take value one after the implementation of the policy in each of these provinces and conjecture that the impact of the provincial policies may have been stronger after the central government issued its policy recommendation. Thus, we also use as instruments the interaction of the above provincial policy dummies with the central government policy dummy.8

We show below that in the years following the adoption of the policies, the increase in the supply of individuals with foreign experience indeed translated in a higher number of board members with foreign experience. Our instruments are thus relevant.

Our instruments could fail to satisfy the exclusion restriction if the provinces issuing the policies earlier differed along unobserved dimensions that are related to firm performance. We address this concern by including province fixed effects. While this approach allows us to control for the time-invariant characteristics of the firms incorporated in a province, unobserved time-varying heterogeneity across provinces could still bias our estimates. For instance, provincial

8 Our results are similar to the ones we report hereafter if we use as instruments 31 policy dummies defined for all Chinese provinces in our sample.
governors could issue policies in expectation of a change in the province growth opportunities or demand for talent.

In order to mitigate this concern, we show that our results are invariant when we control for the yearly growth rate of GDP in the province. In addition, we conjecture that differences in growth opportunities may be industry specific. We thus explore not whether firms perform better after the introduction of the policies to attract highly skilled emigrants, but whether they perform better than the median firm in their industry during the same year.

Finally, and perhaps more convincingly, in other tests, we exploit firm heterogeneity within each province and control for province time-varying heterogeneity by considering how each firm performs in comparisons to the median firm in the province (and its own industry). To construct instruments, we note that after the introduction of the new policies, firms with certain ex ante characteristics are more likely to attract individuals with foreign experience to their boards. We construct new instruments by interacting these firm characteristics at the beginning of the sample period with our policy dummies. Firm characteristics at the beginning of the sample period are unlikely to predict future changes in firm performance, because we control in the second stage estimation, for the contemporaneous firm characteristics. In this way, we test whether after the policy changes, firms that are more likely to have benefitted from an increase in the supply of individuals with foreign experience, grow more than the average listed firm within the province.

5. RESULTS

5.1. Which Firms Have Directors with Foreign Experience?

Table 4 relates the proportion of directors with foreign experience to firm characteristics and the policy to attract highly skilled emigrants. It shows that firms with more directors with foreign

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9 Even though our dependent variable is truncated at zero and one, here, we estimate parameters by ordinary least squares instead of using a Tobit model. The Tobit estimator heavily relies on the distributional assumption and the maximum likelihood estimator is inconsistent when disturbances are non-normal (Arabmazar and Schmidt, 1982). In contrast, in a standard linear regression model, the ordinary least square estimator is unbiased and consistent even when the assumption of normality of the disturbances is violated.
experience have higher foreign ownership and are less likely to have the government as shareholder. It also appears that these firms are larger and more profitable. However, once we control for firm fixed effects in column 2, board structure seems to be affected only by ownership characteristics. The effect of foreign ownership is not only statistically significant but also economically large: A one-standard-deviation increase in foreign ownership increases the proportion of foreign directors in the board by nearly 50 percent.

In column 3, we include the dummies capturing the policy changes at national level as well as in Beijing, Shanghai and Guangdong; these dummies take value one after the central government or the respective local governments enacted the policies. As expected, the policy changes have a positive and highly significant effect on the proportion of board members with foreign experience. Not only are the dummies capturing the policy changes significant and of the expected sign, but the joint F test of their significance is over 50 in column 3, thus suggesting that our instruments are not weak (Bound, Jaeger and Baker, 1995).

In column 4, we include the dummy capturing the timing of the policy change in different provinces. Importantly, also in this case, our instrument appears to be significant in explaining the proportion of directors with foreign experience.

5.2. Directors with Foreign Experience and Firm Performance

We study whether a larger proportion of directors with foreign experience is associated with better firm performance. Table 5 focuses on corporate valuations, which we capture with the market to book ratio (MTB). In all columns but 6 and 9, we define the MTB in deviation from the year-industry median. This is similar to including industry times year fixed effects, but avoids problems related to the way our instruments are defined. In columns 1 to 3, we present parameter

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10 Importantly, in unreported results, we do not find that the percentage of foreign owners is followed by an increase in foreign ownership.

11 Results are qualitatively similar if instead of the proportion of directors with foreign experience, we use the number of directors with foreign experience (and control for board size) or, alternatively, a dummy variable that takes value one if the firm has at least one director with foreign experience. For brevity, we do not tabulate these results.
estimates based on ordinary least squares first using a limited set of controls, then controlling for ownership structure and finally including also firm fixed effects. Although the parameter estimate of our variable of interest becomes smaller especially when we add firm fixed effects, we always find a positive effect of a higher proportion of directors with foreign experience on performance.

In columns 4 to 9, we present the instrumental variable estimates. As explained in Subsection 5.1, we use the two sets of instruments in turn. In columns 4 and 5, the instrumental variables include the central government policy dummy, provincial policy dummies for Beijing, Shanghai, and Guangdong, and the interaction between the central government policy dummy and each of the three provincial policy dummies. In columns 7 and 8, we use the provincial policy dummy that takes equal one in the year after any of the provinces in Mainland China adopts a policy to attract highly skilled returnee migrants. In all cases, the estimates continue to suggest a positive and significant effect of a higher proportion of directors with foreign experience on performance.

While the results so far cannot be interpreted to depend on differences in growth opportunities across industries as the dependent variable is defined in deviation from the MTB of the median firm in the industry in year \( t \), concerns may remain that the provinces introducing the policies have different growth opportunities. For this reason in columns 5 and 8, we include province fixed effects, which account for time-invariant firm heterogeneity across provinces. Results are similar if instead of the province fixed effects we include firm fixed effects. Fully accounting for time-invariant heterogeneity increases the magnitude of the coefficient of our variable of interest. Thus, if anything, time-invariant unobserved heterogeneity biases our results downward.

In other (unreported) specifications, we control for the aggregate GDP growth in the province (instead of the province fixed effects), to take into account time-varying growth opportunities across provinces. Both our ordinary least squares and instrumental variable estimates are similar to the ones we report.

While these tests unambiguously indicate that our findings do not depend on time-invariant differences in demand across firms, it could still be possible that the policies are introduced
contemporaneously to changes in the demand for individuals with foreign experience within a province (which are not captured by the aggregate GDP growth in the province). While we deem this as highly unlikely because the policies were never aimed at listed companies, we perform tests to evaluate this possibility. In columns 6 and 9, we subtract from the firm’s MTB the median MTB of the firms in the same province in year $t$ as well as the median MTB of the firms in the same industry in year $t$.

Since in these specifications we need to exploit within province variation, we use as instruments the interactions between each of the two sets of provincial policy dummies mentioned above, in turn, and the firm-level characteristics (size, state-ownership and foreign ownership) that we showed to explain the proportion of directors with foreign experience in a firm. The firm characteristics used in the interaction terms are measured at the beginning of the sample period, 1999, and in the second stage estimation we control for their contemporaneous effects on firm performance. The estimates continue to imply a positive effect of the directors with foreign experience on firm valuation, indicating that precisely the firms that are more likely to attract directors with foreign experience perform better after the introduction of the policy.

Importantly, the effects we highlight are not only statistically significant, but also economically large, especially when we exploit only the exogenous variation in the proportion of directors with foreign experience. Using the ordinary least square estimates in column 3, a one-standard deviation change in the proportion of directors with foreign experience leads to a change in the dependent variable of 0.12, a tiny number given that the market to book adjusted by industry-year ranges from -3.65 to 8.112. By contrast, in column 8 when we consider only the variation in the proportion of board members with foreign experience due to the provincial policies, a one-standard deviation change in the proportion of directors with foreign experience leads to an economically more relevant increase in the market to book of the firm of 4.1, a change sufficient to bring a firm with median valuation to nearly the 99th percentile.
Table 6 and Table 7 repeat the same set of exercises for our two other measures of firm performance, total factor productivity and profitability, respectively. Since we expect any effects on accounting profits to be delayed, we consider profitability not the year following the policy like for the other performance measures, but two years afterwards. The estimates are still strongly supportive of a positive effect of directors with foreign experience on performance. For instance, based on column 8 in each table, a one-standard-deviation increase in the fraction of directors with foreign experience can bring a firm with median productivity to the 90th percentile and a firm with median ROA to have an ROA slightly above the 95th percentile.

6. WHAT DO DIRECTORS WITH FOREIGN EXPERIENCE DO?

6.1. Foreign Experience vs. Other Board Characteristics

So far we have shown that directors with foreign experience affect firm performance and corporate policies. However, it is possible that these highly skilled returnee emigrants change the structure of the board along other dimensions that are known to affect performance. For this reason, we explore whether the proportion of directors with foreign experience is still positively related to performance if we control for other characteristics of the board. We start by including controls for the average tenure of the directors, the proportion of board members who are also employed in the firm,12 and board size.

The first two proxies are sometimes believed to capture board entrenchment and may thus characterize boards that are less effective in performing their monitoring function. Others, however, argue that directors with longer tenure or who hold posts in the firm may have better information and are more effective advisors. Since given the nature of our experiment directors with foreign experience have shorter tenure, it is important to control for the average tenure of the board members.

12 Since China did not enforce the broader definition of independent directors until 2001, for the whole sample, we can only control for board independence using the fraction of board directors employed by the firm, an inverse measure of board independence.
Similarly, board size is often considered to influence the effectiveness of board of directors. Some argue that large boards are less effective because of coordination problems. Others object that firms with large boards are able to draw from a broader range of expertise. Directors with foreign experience may be added to corporate boards. To the extent that boards become too large, the negative effect of board size may attenuate the positive effects of their expertise on firm performance. Columns 1, 3, and 5 of Panels A, B and C in Table 8 indicate that the ordinary least square and instrumental variable estimates are unchanged and that the effect of board members with foreign experience is unaffected when we control for other characteristics of the board of directors.

We also report a second set of estimates in which we control for additional board characteristics: The average age of board members, the proportion of female directors, the proportion of directors that attended either Tsingua University or Peking University, which are considered the Chinese most selective universities, the proportion of foreign board members, and the proportion of board members with political connections.

Demographic characteristics are often included as controls in studies exploring the effect of board structure on firm performance. In particular, the proportion of directors that attended the Chinese most selective universities allows us to control for the extent to which the proportion of directors with foreign experience may be correlated to the directors’ innate abilities and quality of education, rather than to their foreign experience.

The proportion of foreign directors is particularly important in our context. As Masulis, Wang and Xie (2012) show for US listed companies, foreign individuals may also bring expertise deriving from being exposed to management practices and corporate governance abroad. However, because of physical distance and cultural differences, they appear not to be effective monitors, even in a high transparency environment like the US and are in fact extremely rare (especially, in our sample). As our estimates below indicate, foreign directors are not as beneficial for firm performance as the returnee emigrants with foreign experience.
Furthermore, board members’ political connections are particularly important in the Chinese context. Fan, Wong and Zhang (2007) show that Chinese companies with politically connected CEOs are more likely to appoint bureaucrats, rather than professionals, to the board and underperform those without politically connected CEOs. The concern may thus arise that board members with foreign experience are hired by more efficient companies without political connections and that this may be driving our results. This is unlikely because our results are invariant when we include firm fixed effects and we control for state ownership a proxy for formal political connections. Furthermore, the empirical evidence on the effect of political connections on firm performance is mixed. Calomiris, Fisman and Wang (2010) find a positive effect of political connections on firms’ valuations. Similarly, Cao et al. (2011) find that the CEOs that have political career concerns improve firm performance. Nevertheless, we further address this criticism and control for the political ties of the directors by including the proportion of politically connected board members, which, following Fan, Wong and Zhang (2007) and Calomiris, Fisman and Wang (2010), we define as directors that are currently or were previously employed as bureaucrats by the central or by a local government.

We observe from columns 2, 4, and 6 of Panel A in Table 8 that our estimates are invariant when we include these further controls. In Panel B and C of Table 8, we present the instrumental variable estimates of the same models as in Panel A. Our results are unchanged: the proportion of directors with foreign experience is still positively related to firm performance (although the result is not always statistically significant when we consider the effect on ROA and include this longer set of controls).

6.2. Directors or General Human Capital?

A potential alternative explanation of our results is that while the policies to attract talented emigrants with foreign experience had indeed a positive impact on firm performance, this may have affected firms also through other channels, such as the hiring of returnee emigrants in positions
other than the board of directors. Such an explanation would be broadly consistent with the positive effect of human capital we highlight, but we believe that it is unlikely to explain our findings. The highly talented returnee emigrants benefitting from the policies are a tiny proportion of the Chinese population and the workforce of each province (during the sample period the number of returnee emigrants goes from less than 5,000 to around 30,000 in a population of over 1.3 billion). Thus, the policies we consider cannot have changed the composition of the labor force of the large listed companies in our sample. Even if firms hired one or a few individuals with foreign experience in non-director positions, these could plausibly have a tiny effect on the firm’s overall performance, which we would be unlikely to be able to uncover. Directors affecting the firm strategy and the corporate governance can more plausibly generate the effects that we highlight. Consistently, with this explanation, in unreported specifications, we find that the effects we highlight are orthogonal to changes in the total wages paid by the sample firms to lower level employees, which should presumably reflect changes in the labor force composition of the firm.13

Nevertheless, we test whether the policies matter predominantly through the composition of the board of directors as follows. We ask whether the adoption of a policy for attracting highly talented returnee emigrants affects all firms in the province or rather only the firms with a non-zero proportion of directors with foreign experience, as we would expect if the impact of the policies is exclusively through the composition of the board of directors. Our estimates in Table 9 clearly indicate that the effect of the policies is through the composition of the board. While the policies appear to have a positive effect on all three measures of performance for firms that end up having at least one director with foreign experience, the effect for the remaining firms in the province is negative and is not statistically different from zero, indicating that the recruiting of human capital with foreign experience by all firms in the province is unlikely to drive our estimates.

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13 This is not inconsistent with the fact that we do not find an effect on director compensation, as being a board member of a listed company is a prestigious position per se and does not involve a full time commitment.
6.3. Corporate Policies

The causal mechanism behind our maintained hypothesis that directors with foreign experience positively affect firm performance implies that the way firms are run changes when directors with foreign experience join the board. In Table 10, we explore whether this is the case, by testing whether directors with foreign experience affect the type of M&A, equity issues and corporate governance, all policies that cannot be affected by individuals at a lower rank in the organization.

First, we consider firms that perform mergers and acquisition. We ask whether the probability that the firm does an international merger or acquisition, as opposed to a domestic deal, is larger when a higher proportion of the firm’s board members have foreign experience. As before, we present ordinary least squares and instrumental variable estimates. The estimates in columns 1 through 3 indicate that this is the case.

Second, we consider capital raising activities. In particular, we consider firms that do private placements with international vs. domestic investors. By conditioning on firms that do private placements we keep the demand for equity constant. Since our data on private placement starts in 2006, the first set of IVs that include the central government policy dummy as well as policy dummies for Beijing, Shanghai, and Guangdong, whose policy implementation date occurred prior to 2006, is no longer valid. Thus we report the IV results for the second set of IV (based on provincial policies for all provinces). As we observe from columns 4 and 5, a higher proportion of directors with foreign experience, increase the probability that the firm makes a private placement with a foreign investor.

Third, we examine the impact of larger portion of directors with foreign experience on firms’ foreign sales. Columns 9 through 11 provide the OLS and IV estimates. We observe that a higher

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14 Our sample includes very few cross-listed firms, because to be included in our sample firms must be traded in the Chinese A-share markets, which imply that their first listing was in one of mainland China’s stock markets. Chinese companies that are listed in New York or Hong Kong generally list first in the foreign market, and only relatively few of them afterwards obtain a listing in China.

15 We present the OLS and IV results so that the coefficients are comparable. In unreported tests, we estimate logit models for foreign mergers and acquisitions and for foreign private placement. We find similar results.
proportion of directors with foreign experience is associated with a larger fraction of sales outside mainland China. Interestingly, the coefficient of the fraction of directors with foreign experience is significantly larger when we use instrumental variable estimates. This suggests that after controlling for endogeneity problems, the effect of directors with foreign experience on overseas M&As and overseas sales is even larger. These findings suggest that board members with foreign experience help to shape the international activity of the firm.

Lastly, we consider an aspect of corporate governance, earning managements. Better governed firms should be more transparent for their investors and do less earning management. Chen and Yuan (2004) argue that in China a higher proportion of profits coming from non-operating income indicates more earning management. In columns 5 through 7, we adopt this definition of earning management. The results suggest that a higher proportion of directors with foreign experience is associated to lower earning management when we estimate the parameter by ordinary least squares and use the provincial dummies for Beijing, Shanghai and Guangdong as instruments. The effect is statistically insignificant when we use the provincial policy dummy only (without differentiating the effect across regions), probably because this instrument is weaker. Overall, however, the estimates suggest that directors with foreign experience improve corporate governance.

6.3. The Quality of Foreign Experience

In Table 11, we recognize that not all foreign experience is equal. If foreign experience really matters we would expect that a more effective foreign experience should have a larger impact on firm performance. Thus, we first distinguish between foreign work experience and education. Then we rank the education attributing a higher score to more advanced degrees (4 for a doctoral or a master degree obtained abroad, 3 for a bachelor obtained abroad, 2 for a short-term visit, and 1 for

16 The effect of the proportion of directors with foreign experience is negative and statistically significant if instead of the policy dummy, we use provincial dummies for all provinces in our sample as instruments, as we did for those for Beijing, Shanghai, and Guangdong.
no foreign education). The newly defined measure of foreign education is a weighted value of directors with various overseas degrees, scaled by the weighted value of all the directors in the firm.

We also rank the education on the basis of the quality of the foreign university. In particular, we assign a 3 to directors that obtained their foreign education in a top 500 university, a 2 to directors that obtained their education in a foreign university that does not belong to the top 500 and a 1 to directors with no foreign education. The university quality weighted proportion of directors with foreign experience is obtained as described above for the degree-weighted measure. Finally, we consider both degree and quality of the institution by adding the two weights and constructing a new proportion of directors with foreign experience using the new weights.

In all cases, it appears that the quality-weighted measures of directors with foreign education increase firm performance. Similarly, in Panel C, we focus on foreign work experience and find that it also increases firm performance, although the effect is not always significant at statistically significant levels when we use the policy dummy (without distinguishing the effect across provinces) as an instrument.

Furthermore, in unreported results, the effect of foreign education appears to be more important than the effects of foreign work experience. This may depend on the fact that individuals with foreign work experience also have foreign education. Since we are able to rank the quality of education, but it is more difficult to do so with the quality of work experience, it is unsurprising that foreign education has a stronger effect on firm performance.

7. ROBUSTNESS

7.1. Propensity Scores

Our main analysis is based on the whole sample of publicly traded companies. However, especially during the early part of the sample, individuals with foreign experience were a relatively scarce resource in China. This implies that our sample includes firms that would like to employ
directors with foreign experience, but are unable to do so for idiosyncratic reasons, even though they are similar to firms that have directors with foreign experience. Since whether similar firms have directors with foreign experience depends on idiosyncratic reasons, we can use a propensity score framework to check the robustness of our findings.

For firms employing directors with foreign experience, we estimate propensity scores based on year, industry, size, leverage and foreign ownership to create a matching sample of firms without directors with foreign experience. We then compare the performance of matched firms with and without directors with foreign experience by re-estimating Tables 5 through 7. The results, omitted for brevity, are similar to the ones we report.

7.2. More evidence on (the absence of) selection effects

So far we have presented a variety of tests that unambiguously indicate that our instruments capture changes in the supply of directors with foreign experience rather than firms’ demand for directors with these skills. Independent evidence supporting our identification strategy comes from the analysis of the compensation of board members. We surmise, as general equilibrium models of the allocation of talent imply (e.g., Murphy and Zabojnik, 2004), that if directors with foreign experience sort to firms with higher demand for their skills, then these firms should pay more for their services.

In unreported tests, we find unambiguous evidence that this is not the case. Firms with directors with foreign experience do not pay their directors more. Moreover, within these firms, directors with foreign experience are not paid more than other directors. Thus, this evidence indicate, consistently with our previous tests, that directors with foreign experience are unlikely to have joined companies in which their skills are needed more than in others. It rather appears that the widespread scarcity of talent in China makes the control sample of firms that do not employ directors with foreign experience highly comparable.
8. CONCLUSIONS

The brain drain from emerging markets may not only have costs, but also positive, indirect, benefits. Talented individuals migrating to foreign countries accumulate further knowledge and skills. If these highly skilled emigrants ever decide to return, the experience they gained abroad can benefit their home country and the brain drain becomes a brain gain.

This paper documents a specific channel leading to brain gain. We show that when individuals with foreign experience join corporate boards, firm performance improves and firms are run differently. The positive effects on firm valuations are large relative to the compensation of board members, which is moderate in China, and suggest that the externalities created by highly skilled returnees in emerging economies are potentially large.

We argue that the positive effects on firm performance we document depend on the adoption of superior management practices, improvements in corporate governance and easier access to foreign investors and technologies through M&As. The externalities created by highly skilled returnees are unlikely to be confined to the universe of listed companies and are likely to be found, and potentially be even larger, also in entrepreneurial firms or universities and education, the main target of the policies. We consider this an exciting area for future research.

REFERENCES


Appendix: Variable Definition and Construction

<table>
<thead>
<tr>
<th>Variable</th>
<th>Definition and Data Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assets</td>
<td>Total assets of the firm (in RMB 100 millions). Source: CSMAR database.</td>
</tr>
<tr>
<td>Block</td>
<td>Fraction of shares held by the largest shareholder. Source: CCER database.</td>
</tr>
<tr>
<td>Board Political Connection</td>
<td>Fraction of politically connected directors in the board. Following Fan et al. (2007) and Calomiris et al. (2010), a director is defined as politically connected if he or she is a current or former government bureaucrat. Source: Manual collection.</td>
</tr>
<tr>
<td>Board Size</td>
<td>The total number of board directors. Source: CSMAR database.</td>
</tr>
<tr>
<td>Earnings Management</td>
<td>Following Chen and Yuan (2004), computed as a firm’s non-operating income scaled by its book value of equity, minus the yearly industry median of this scaled non-operating income. Source: CSMAR database.</td>
</tr>
<tr>
<td>Executive Directors (Fraction)</td>
<td>Proportion of directors that are firms’ executives. Source: Manual collection.</td>
</tr>
<tr>
<td>Female Directors (Fraction)</td>
<td>Proportion of female directors. Source: Manual collection.</td>
</tr>
<tr>
<td>Foreign Directors (Fraction)</td>
<td>Proportion of directors that are foreign nationals. Source: Manual collection.</td>
</tr>
<tr>
<td>Directors with Foreign Experience Dummy</td>
<td>A dummy variable equal to one if at least one director has either foreign working experience, or foreign education, or both, and zero otherwise. Source: Manual collection.</td>
</tr>
<tr>
<td>Foreign Experience</td>
<td>Fraction of directors with foreign experience. Calculated as the number of directors that have either foreign working experience, or foreign education, or both, scaled by the total number of board directors. Sources: Manual collection and CSMAR database.</td>
</tr>
<tr>
<td>Number of Directors with Foreign Experience</td>
<td>The total number of directors that have either overseas working experience, or foreign education, or both. Source: Manual collection.</td>
</tr>
<tr>
<td>Foreign M&amp;A</td>
<td>A dummy equal to one if at least one of the merger &amp; acquisition transactions announced by a sample firm in a given year involves a foreign target firm, and zero if the M&amp;A transactions announced by a sample firm in a given year involve no foreign targets. Source: CSMAR database and manual collection.</td>
</tr>
<tr>
<td>Variable</td>
<td>Description</td>
</tr>
<tr>
<td>-----------------------------------------------</td>
<td>-------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Foreign Ownership</td>
<td>Fraction of shares held by foreign investors. Source: Manual collection.</td>
</tr>
<tr>
<td>Foreign Private Placement</td>
<td>A dummy equal to one if at least one of the private placements filed by the firm in a given year is targeted to foreign investors, and zero if none of these private placements is targeted to foreign investors. Source: CSMAR database and manual collection.</td>
</tr>
<tr>
<td>Leverage</td>
<td>Total liabilities divided by total assets. Source: CSMAR database.</td>
</tr>
<tr>
<td>MTB</td>
<td>Market-to-book ratio. Constructed as the sum of the market value of equity and book value of total liabilities, scaled by the book value of total assets. Sources: CCER and CSMAR databases.</td>
</tr>
<tr>
<td>Quality of Foreign Education (Degree)</td>
<td>The weighted value of the academic degrees of directors with foreign education, scaled by the weighted value of the academic degrees of all the directors. For each director, we assign 4 if he or she obtained a foreign doctoral or master degree, 3 for a foreign bachelor degree, 2 for a foreign short-term visit (no official degrees obtained), and 1 for no foreign education. If an individual obtains more than one academic degree abroad, in the variable construction, we consider only the most advanced foreign degree. Source: Manual collection.</td>
</tr>
<tr>
<td>Quality of Foreign Education (Degree-Ranking)</td>
<td>The weighted value of the university ranking and the academic degree of the directors with foreign education, scaled by the weighted value of the university ranking and academic degree of all the directors. For each director, we assign 7 if he or she has obtained a doctoral or master degree from a foreign university ranked among the top 500 universities, 6 for a doctoral or master degree from a foreign university ranked below the top 500, 5 for a bachelor degree from a university ranked among the world top 500, 4 for a bachelor degree from a university ranked below the world top 500, 3 for a visiting position in a university ranked among the top 500, 2 for a visiting position in a university ranked below the world top 500, and 1 for non-foreign education background. Sources: Our own manual collection and the Academic Ranking of World Universities (2003-2010).</td>
</tr>
<tr>
<td>Quality of Foreign Education (Ranking)</td>
<td>The weighted value of the ranking of the universities attended by the directors with foreign education, scaled by the weighted value of the ranking of the universities attended by all the directors. For each director, we assign 3 if he or she obtains a degree from a foreign university ranked among the world top 500 based on the Academic Ranking of World Universities (2003-2010), 2 for a foreign university ranked below the world top 500, and 1 for no foreign education. If an individual attends more</td>
</tr>
</tbody>
</table>
than one foreign university, we use the one with the highest ranking. Sources: Our own manual collection and the Academic Ranking of World Universities (2003-2010).

<table>
<thead>
<tr>
<th>Variable</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ROA</td>
<td>Operating income divided by total assets. Source: CSMAR database.</td>
</tr>
<tr>
<td>Size</td>
<td>Natural log of total assets.</td>
</tr>
<tr>
<td>State</td>
<td>A dummy variable equal to one if a firm is government controlled or owned, and zero otherwise. State ownership includes central and provincial government ownership. Source: CCER database.</td>
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<tr>
<td>Tenure</td>
<td>One plus the difference between the current year and the year when an individual joined the firm’s board of directors. Source: Manual collection and CSMAR database.</td>
</tr>
<tr>
<td>TFP</td>
<td>Total factor productivity. Defined as in Schoar (2002). For all firms in an industry and a given year, we regress the natural logarithm of sales on the natural logarithm of its total assets, the natural logarithm of its total number of employees, and the natural logarithm of cash payments for raw materials and service. The firm’s TFP is computed as the residual of this regression.</td>
</tr>
</tbody>
</table>
Figure 1
Fraction of Directors with Foreign Experience

This figure presents the fraction of board directors with foreign experience before and after the implementation of the provincial policies to encourage the return of highly skilled emigrants in the event time. The first two columns compare the fraction of directors with foreign experience before and after the implementation of the policies for firms in each of the provinces. We also compare the fraction of directors with foreign experience among the firms located in Beijing, Shanghai, and Guangdong before and after the implementation of the policies in each of these provinces.
Table 1
Geographic Distribution of Firms Affected by Central Government and Provincial Policies to Attract Highly Skilled Emigrants

This table reports the number of unique sample firms and of firm-year observations for each province that implements a policy to attract highly talented emigrants. Our sample period is 1999-2009. “Issuing year” is the year when the policy is issued. “After” includes firm-year observations after the issuing year. “Before” includes firm-year observations before and during the issuing year.

<table>
<thead>
<tr>
<th>Issuing year</th>
<th># of unique firms</th>
<th># of firm-year observations</th>
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<tr>
<td></td>
<td></td>
<td>Total</td>
</tr>
<tr>
<td>Central Government</td>
<td>2001</td>
<td>1,673</td>
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<tr>
<td>Province</td>
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<tr>
<td>Anhui</td>
<td>1994</td>
<td>54</td>
</tr>
<tr>
<td>Beijing</td>
<td>2000</td>
<td>104</td>
</tr>
<tr>
<td>Chongqing</td>
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<td>30</td>
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<td>Fujian</td>
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<td>61</td>
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<tr>
<td>Gansu</td>
<td>2003</td>
<td>23</td>
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<td>Guangdong</td>
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<td>216</td>
</tr>
<tr>
<td>Guangxi</td>
<td>2005</td>
<td>26</td>
</tr>
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<td>2003</td>
<td>18</td>
</tr>
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<tr>
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Table 2
Summary Statistics
Panel A: Director Characteristics

This panel summarizes the characteristics of the directors of our sample firms from 1999 to 2009. The unit of observation is the director-firm-year. “Director with foreign experience” is a dummy equal to one if a director in a given year has either foreign education or foreign work experience, and zero otherwise. “Director with foreign work experience” is a dummy equal to one if a director has foreign work experience, and zero otherwise. “Director with foreign education” is a dummy equal to one if a director has foreign education, and zero otherwise. “Foreign visiting scholar/training/postdoc” is a dummy variable equal to one if a director was visiting scholar, post-doc or did a short-term training program, and zero otherwise. “Foreign bachelor degree” is a dummy variable equal to one if a director holds a bachelor degree from a foreign country, and zero otherwise. “Foreign master degree” is a dummy variable equal to one if a director holds a master degree from a foreign country, and zero otherwise. “Foreign doctoral degree” is a dummy variable equal to one if a director holds a doctoral degree from a foreign country, and zero otherwise. “Age” is the difference between the current year and the birth year of the director. “Female director” is a dummy variable equal to one if the director is female, and zero if male. “Tenure” is one plus the difference between the current year and the year when the individual joined the board of a given firm. “Busy director” is a dummy variable equal to one if a director holds positions in other firms, and zero otherwise. “Director employed in the firm” is a dummy variable equal to one if a director is also an executive of the firm, and zero otherwise. “Independent director” is a dummy variable equal to one if a director is an independent director, defined according to the China Securities Regulatory Commission as an individual who is not affiliated with the firm except as a director, and does not have a relationship with the company that would interfere with independent judgment. “Foreign director” is a dummy variable equal to one if a director is a foreign national and zero otherwise. “Politically connected director” is a dummy variable equal to one if a director is a current or former government bureaucrat and zero otherwise.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>Median</th>
<th>Std. Dev.</th>
<th># of obs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Director with foreign experience</td>
<td>0.067</td>
<td>0</td>
<td>0.25</td>
<td>125,758</td>
</tr>
<tr>
<td>Director with foreign work experience</td>
<td>0.027</td>
<td>0</td>
<td>0.162</td>
<td>125,758</td>
</tr>
<tr>
<td>Director with foreign education</td>
<td>0.053</td>
<td>0</td>
<td>0.225</td>
<td>125,758</td>
</tr>
<tr>
<td>Foreign visiting scholar/training/postdoc</td>
<td>0.025</td>
<td>0</td>
<td>0.155</td>
<td>125,758</td>
</tr>
<tr>
<td>Foreign bachelor degree</td>
<td>0.006</td>
<td>0</td>
<td>0.074</td>
<td>125,758</td>
</tr>
<tr>
<td>Foreign master degree</td>
<td>0.014</td>
<td>0</td>
<td>0.118</td>
<td>125,758</td>
</tr>
<tr>
<td>Foreign doctoral degree</td>
<td>0.009</td>
<td>0</td>
<td>0.095</td>
<td>125,758</td>
</tr>
<tr>
<td>Age</td>
<td>48.313</td>
<td>47</td>
<td>8.886</td>
<td>125,743</td>
</tr>
<tr>
<td>Female director</td>
<td>0.095</td>
<td>0</td>
<td>0.294</td>
<td>125,758</td>
</tr>
<tr>
<td>Tenure</td>
<td>2.006</td>
<td>2</td>
<td>1.05</td>
<td>125,758</td>
</tr>
<tr>
<td>Busy director</td>
<td>0.743</td>
<td>1</td>
<td>0.437</td>
<td>63,843</td>
</tr>
<tr>
<td>Director employed in the firm</td>
<td>0.396</td>
<td>0</td>
<td>0.489</td>
<td>125,661</td>
</tr>
<tr>
<td>Independent director</td>
<td>0.271</td>
<td>0</td>
<td>0.445</td>
<td>125,758</td>
</tr>
<tr>
<td>Foreign director</td>
<td>0.004</td>
<td>0</td>
<td>0.061</td>
<td>125,758</td>
</tr>
<tr>
<td>Politically connected director</td>
<td>0.087</td>
<td>0</td>
<td>0.282</td>
<td>125,668</td>
</tr>
</tbody>
</table>
Panel B: Directors’ Foreign Experience

This panel reports the distribution of countries and regions where the directors in our sample obtained their foreign education or work experience. If an individual has been in more than one country, we consider only the country where the individual obtains his highest level of academic degree.

<table>
<thead>
<tr>
<th>Country/Region</th>
<th># of directors</th>
<th># of director-firm-year obs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>61</td>
<td>261</td>
</tr>
<tr>
<td>Austria</td>
<td>2</td>
<td>7</td>
</tr>
<tr>
<td>Belgium</td>
<td>9</td>
<td>39</td>
</tr>
<tr>
<td>Canada</td>
<td>66</td>
<td>410</td>
</tr>
<tr>
<td>Croatia</td>
<td>1</td>
<td>7</td>
</tr>
<tr>
<td>Denmark</td>
<td>3</td>
<td>15</td>
</tr>
<tr>
<td>Egypt</td>
<td>1</td>
<td>7</td>
</tr>
<tr>
<td>Finland</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>France</td>
<td>37</td>
<td>158</td>
</tr>
<tr>
<td>Germany</td>
<td>52</td>
<td>325</td>
</tr>
<tr>
<td>Greece</td>
<td>1</td>
<td>24</td>
</tr>
<tr>
<td>Hong Kong</td>
<td>80</td>
<td>529</td>
</tr>
<tr>
<td>Italy</td>
<td>10</td>
<td>31</td>
</tr>
<tr>
<td>Japan</td>
<td>144</td>
<td>705</td>
</tr>
<tr>
<td>Korea</td>
<td>9</td>
<td>29</td>
</tr>
<tr>
<td>Macao</td>
<td>19</td>
<td>100</td>
</tr>
<tr>
<td>Malaysia</td>
<td>2</td>
<td>7</td>
</tr>
<tr>
<td>Morocco</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Netherlands</td>
<td>20</td>
<td>128</td>
</tr>
<tr>
<td>New Zealand</td>
<td>5</td>
<td>12</td>
</tr>
<tr>
<td>Pakistan</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Philippines</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Poland</td>
<td>3</td>
<td>15</td>
</tr>
<tr>
<td>Russia</td>
<td>9</td>
<td>26</td>
</tr>
<tr>
<td>Singapore</td>
<td>20</td>
<td>71</td>
</tr>
<tr>
<td>Spain</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Sweden</td>
<td>9</td>
<td>52</td>
</tr>
<tr>
<td>Switzerland</td>
<td>14</td>
<td>47</td>
</tr>
<tr>
<td>Syrian</td>
<td>1</td>
<td>7</td>
</tr>
<tr>
<td>Taiwan</td>
<td>34</td>
<td>116</td>
</tr>
<tr>
<td>Thailand</td>
<td>4</td>
<td>12</td>
</tr>
<tr>
<td>The Soviet Union</td>
<td>13</td>
<td>94</td>
</tr>
<tr>
<td>UK</td>
<td>169</td>
<td>776</td>
</tr>
<tr>
<td>USA</td>
<td>479</td>
<td>2,656</td>
</tr>
<tr>
<td>Yugoslavia</td>
<td>2</td>
<td>20</td>
</tr>
</tbody>
</table>
Panel C: Firm Characteristics
This panel reports the summary statistics for the sample firms between 1999 and 2009. The unit of observation is the firm-year. Variable definitions are in the Appendix. ROA is the firm’s return on assets led by one year. Assets, Block, Board Size, Foreign Experience, Number of Directors with Foreign Experience, Foreign Ownership, Leverage, and ROA are winsorized at 1% and 99% levels.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>Median</th>
<th>Std. Dev.</th>
<th># of obs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>MTB</td>
<td>2.359</td>
<td>1.933</td>
<td>1.397</td>
<td>12,949</td>
</tr>
<tr>
<td>TFP</td>
<td>-0.002</td>
<td>-0.007</td>
<td>0.289</td>
<td>12,949</td>
</tr>
<tr>
<td>ROA</td>
<td>0.025</td>
<td>0.033</td>
<td>0.085</td>
<td>12,903</td>
</tr>
<tr>
<td>Foreign Experience</td>
<td>0.067</td>
<td>0</td>
<td>0.1</td>
<td>12,949</td>
</tr>
<tr>
<td>Number of Directors with Foreign Experience</td>
<td>0.645</td>
<td>0</td>
<td>0.983</td>
<td>12,949</td>
</tr>
<tr>
<td>Directors with Foreign Experience Dummy</td>
<td>0.344</td>
<td>0</td>
<td>0.475</td>
<td>12,949</td>
</tr>
<tr>
<td>Board Size</td>
<td>9.524</td>
<td>9</td>
<td>2.141</td>
<td>12,949</td>
</tr>
<tr>
<td>State</td>
<td>0.714</td>
<td>1</td>
<td>0.452</td>
<td>12,949</td>
</tr>
<tr>
<td>Foreign Ownership</td>
<td>0.024</td>
<td>0</td>
<td>0.073</td>
<td>12,949</td>
</tr>
<tr>
<td>Block</td>
<td>0.406</td>
<td>0.39</td>
<td>0.166</td>
<td>12,949</td>
</tr>
<tr>
<td>Assets (RMB 100 millions)</td>
<td>34.64</td>
<td>15.28</td>
<td>66.8</td>
<td>12,949</td>
</tr>
<tr>
<td>Leverage</td>
<td>0.491</td>
<td>0.486</td>
<td>0.212</td>
<td>12,949</td>
</tr>
<tr>
<td>Foreign M&amp;A</td>
<td>0.056</td>
<td>0</td>
<td>0.231</td>
<td>3,781</td>
</tr>
<tr>
<td>Foreign private placement</td>
<td>0.156</td>
<td>0</td>
<td>0.363</td>
<td>321</td>
</tr>
</tbody>
</table>
Panel D: Industry Distribution of Sample Firms

This panel reports the industry distribution of the sample firms. Statistics are based on firm-year observations. Information about a firm’s industry classification in a given year is from the CCER database. The 21 industries are based on the official industry classification of the China Securities Regulatory Commission.

<table>
<thead>
<tr>
<th>Industry</th>
<th>%</th>
<th># of obs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture</td>
<td>2.44%</td>
<td>316</td>
</tr>
<tr>
<td>Mining</td>
<td>1.76%</td>
<td>228</td>
</tr>
<tr>
<td>Food</td>
<td>4.55%</td>
<td>589</td>
</tr>
<tr>
<td>Apparel</td>
<td>4.56%</td>
<td>590</td>
</tr>
<tr>
<td>Furniture</td>
<td>0.27%</td>
<td>35</td>
</tr>
<tr>
<td>Printing</td>
<td>2.09%</td>
<td>270</td>
</tr>
<tr>
<td>Gas and Chemistry</td>
<td>11.67%</td>
<td>1,511</td>
</tr>
<tr>
<td>Electronic</td>
<td>3.92%</td>
<td>508</td>
</tr>
<tr>
<td>Metal</td>
<td>9.99%</td>
<td>1,294</td>
</tr>
<tr>
<td>Machinery</td>
<td>16.36%</td>
<td>2,119</td>
</tr>
<tr>
<td>Pharmaceutical Products</td>
<td>6.49%</td>
<td>841</td>
</tr>
<tr>
<td>Other Manufacturing</td>
<td>1.43%</td>
<td>185</td>
</tr>
<tr>
<td>Energy Supply</td>
<td>4.09%</td>
<td>530</td>
</tr>
<tr>
<td>Construction</td>
<td>2.12%</td>
<td>274</td>
</tr>
<tr>
<td>Transportation</td>
<td>4.19%</td>
<td>542</td>
</tr>
<tr>
<td>Information Technology</td>
<td>5.48%</td>
<td>709</td>
</tr>
<tr>
<td>Retail &amp; Wholesale</td>
<td>7.21%</td>
<td>934</td>
</tr>
<tr>
<td>Real Estate</td>
<td>2.19%</td>
<td>284</td>
</tr>
<tr>
<td>Other Service Supply</td>
<td>3.12%</td>
<td>404</td>
</tr>
<tr>
<td>Entertainment</td>
<td>0.73%</td>
<td>94</td>
</tr>
<tr>
<td>Other</td>
<td>5.34%</td>
<td>692</td>
</tr>
</tbody>
</table>
### Table 3
#### Univariate Comparisons

**Panel A: Firm Characteristics and the Presence of Directors with Foreign Experience**

We report univariate tests comparing firms with directors with foreign experience and firms without directors with foreign experience. The unit of observation is the firm-year and the sample goes from 1999 to 2009. “Assets”, “Block”, “Board Size”, “Foreign Ownership”, “Board Political Connection”, “Leverage”, and “ROA” are winsorized at 1% and 99% levels. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

<table>
<thead>
<tr>
<th>Firm Characteristics</th>
<th>Board director without foreign experience</th>
<th>Board director with foreign experience</th>
<th>t-statistic</th>
<th>( \chi^2 )</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td># of obs.</td>
<td>Mean</td>
<td># of obs.</td>
<td>Mean</td>
</tr>
<tr>
<td>MTB</td>
<td>8,496</td>
<td>2.414</td>
<td>4,453</td>
<td>2.254</td>
</tr>
<tr>
<td>TFP</td>
<td>8,496</td>
<td>-0.011</td>
<td>4,453</td>
<td>0.016</td>
</tr>
<tr>
<td>ROA</td>
<td>8,460</td>
<td>0.024</td>
<td>4,443</td>
<td>0.035</td>
</tr>
<tr>
<td>Board Size</td>
<td>8,496</td>
<td>0.931</td>
<td>4,453</td>
<td>0.972</td>
</tr>
<tr>
<td>Foreign Ownership</td>
<td>8,496</td>
<td>0.013</td>
<td>4,453</td>
<td>0.044</td>
</tr>
<tr>
<td>Block</td>
<td>8,496</td>
<td>0.411</td>
<td>4,453</td>
<td>0.398</td>
</tr>
<tr>
<td>Assets (RMB 100 millions)</td>
<td>8,496</td>
<td>28.31</td>
<td>4,453</td>
<td>46.72</td>
</tr>
<tr>
<td>Leverage</td>
<td>8,496</td>
<td>0.493</td>
<td>4,453</td>
<td>0.489</td>
</tr>
<tr>
<td>Board Political Connection</td>
<td>8,496</td>
<td>0.079</td>
<td>4,453</td>
<td>0.077</td>
</tr>
<tr>
<td>State</td>
<td>8,496</td>
<td>0.727</td>
<td>4,453</td>
<td>0.690</td>
</tr>
<tr>
<td>Foreign M&amp;A</td>
<td>2,377</td>
<td>4.50%</td>
<td>1,404</td>
<td>7.50%</td>
</tr>
<tr>
<td>Foreign Private Placement</td>
<td>200</td>
<td>14.50%</td>
<td>121</td>
<td>17.40%</td>
</tr>
</tbody>
</table>
Panel B: Industry Distribution of Firms with and without Directors of Foreign Experience

This panel reports the industry distribution of firms with and without directors with foreign experience. The unit of observation is the firm-year and the sample goes from 1999 to 2009. The Wald $\chi^2$ test for the difference between the two types of firms within each industry is reported in the last column. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

<table>
<thead>
<tr>
<th>Industry</th>
<th>Firms with no director with foreign experience</th>
<th>Firms with at least one director with foreign experience</th>
<th>$\chi^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td># of obs.</td>
<td>%</td>
<td># of obs.</td>
</tr>
<tr>
<td>Agriculture</td>
<td>205</td>
<td>2.41%</td>
<td>111</td>
</tr>
<tr>
<td>Mining</td>
<td>132</td>
<td>1.55%</td>
<td>96</td>
</tr>
<tr>
<td>Food</td>
<td>411</td>
<td>4.84%</td>
<td>178</td>
</tr>
<tr>
<td>Apparel</td>
<td>431</td>
<td>5.07%</td>
<td>159</td>
</tr>
<tr>
<td>Furniture</td>
<td>21</td>
<td>0.25%</td>
<td>14</td>
</tr>
<tr>
<td>Printing</td>
<td>188</td>
<td>2.21%</td>
<td>82</td>
</tr>
<tr>
<td>Gas and Chemistry</td>
<td>1,077</td>
<td>12.68%</td>
<td>434</td>
</tr>
<tr>
<td>Electronic</td>
<td>287</td>
<td>3.38%</td>
<td>221</td>
</tr>
<tr>
<td>Metal</td>
<td>872</td>
<td>10.26%</td>
<td>422</td>
</tr>
<tr>
<td>Machinery</td>
<td>1,405</td>
<td>16.54%</td>
<td>714</td>
</tr>
<tr>
<td>Pharmaceutical Products</td>
<td>527</td>
<td>6.20%</td>
<td>314</td>
</tr>
<tr>
<td>Other Manufacturing</td>
<td>97</td>
<td>1.14%</td>
<td>88</td>
</tr>
<tr>
<td>Energy Supply</td>
<td>342</td>
<td>4.03%</td>
<td>188</td>
</tr>
<tr>
<td>Construction</td>
<td>184</td>
<td>2.17%</td>
<td>90</td>
</tr>
<tr>
<td>Transportation</td>
<td>314</td>
<td>3.70%</td>
<td>228</td>
</tr>
<tr>
<td>Information Technology</td>
<td>362</td>
<td>4.26%</td>
<td>347</td>
</tr>
<tr>
<td>Retail &amp; Wholesale</td>
<td>671</td>
<td>7.90%</td>
<td>263</td>
</tr>
<tr>
<td>Real Estate</td>
<td>153</td>
<td>1.80%</td>
<td>131</td>
</tr>
<tr>
<td>Other Service Supply</td>
<td>264</td>
<td>3.11%</td>
<td>140</td>
</tr>
<tr>
<td>Entertainment</td>
<td>77</td>
<td>0.91%</td>
<td>17</td>
</tr>
<tr>
<td>Other</td>
<td>476</td>
<td>5.60%</td>
<td>216</td>
</tr>
<tr>
<td>Total</td>
<td>8,496</td>
<td>100%</td>
<td>4,453</td>
</tr>
</tbody>
</table>
Table 4
Policy Changes and the Board of Directors

This table relates the proportion of directors with foreign experience (“Foreign Experience”) to firm characteristics and the policy adoption. “Central Government” is a dummy variable equal to one if the year is greater than 2001, the year when the central government adopted a nationwide policy to encourage the return of highly skilled emigrants, and zero otherwise. “Beijing”, “Shanghai”, and “Guangdong” are dummy variables equal to one if a firm is headquartered in Beijing, Shanghai, or Guangdong, respectively in the years following the adoption of the provincial policy in each of these provinces, and zero otherwise. “Provincial Policy” is a dummy variable that takes value one if the firm is headquartered in a given province in the years following the adoption of a policy to encourage the return of highly skilled emigrants and zero otherwise. All other variables are defined in the Appendix. All equations include the constant term, but the coefficient is not reported. T-statistics, computed with robust standard errors clustered at firm level, are reported in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

<table>
<thead>
<tr>
<th></th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
<th>(4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Foreign Ownership</td>
<td>0.436***</td>
<td>0.517***</td>
<td>0.420***</td>
<td>0.435***</td>
</tr>
<tr>
<td></td>
<td>(10.53)</td>
<td>(8.69)</td>
<td>(10.13)</td>
<td>(10.55)</td>
</tr>
<tr>
<td>ROA</td>
<td>0.053**</td>
<td>0.018</td>
<td>0.055***</td>
<td>0.054**</td>
</tr>
<tr>
<td></td>
<td>(2.48)</td>
<td>(1.15)</td>
<td>(2.60)</td>
<td>(2.52)</td>
</tr>
<tr>
<td>Block</td>
<td>-0.019</td>
<td>-0.025</td>
<td>-0.021</td>
<td>-0.019</td>
</tr>
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Table 5
Directors with Foreign Experience and Firm Value

In this table we relate the firm’s market to book ratio (MTB) to the presence of directors with foreign experience. In columns 1 to 3 we, present ordinary least squares estimates. In columns 4 to 9, we present instrumental variable estimates. The dependent variable in columns 6 and 9 is the firm’s MTB from which we subtract the industry-year median and the province-year median. The first set of instrumental variables (IV1) used in columns 4 to 6 includes the central government policy dummy, which equals 1 if a given year is greater than 2001, and dummies for the adoption of policies by Beijing, Shanghai, and Guangdong, and the interactions of these province policy dummies with the central government policy dummy. The second set of instrumental variables (IV2) used in columns 7 to 9 includes “Provincial Policy”, a dummy variable that takes value of one in years following the implementation of the policy in each province. In columns 6 and 9, where we define the performance measure in deviation from the industry and province median, we also interact the instruments with the firm characteristics “State”, “Foreign Ownership”, and “Size” in 1999 (the beginning of the sample period). If a firm enters our sample later than 1999, firm characteristics computed in the year of the firm’s entry in the sample are used to construct the interaction terms. All the variables are defined in the Appendix. All equations include the constant term, but the coefficient is not reported. T-statistics computed with robust standard errors clustered at firm level are reported in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

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<td>No</td>
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### Table 6

**Directors with Foreign Experience and Total Factor Productivity**

In this table we relate the firm’s total factor productivity (TFP) to the presence of directors with foreign experience. In columns 1 to 3 we present ordinary least squares estimates. In columns 4 to 9 we present instrumental variable estimates. In columns 1 to 5 and 7 to 8 the dependent variable is the firm’s TFP from which we subtract the industry-year median. The dependent variable in columns (6) and (9) is the firm’s TFP from which we subtract the industry-year median and the province-year median. The first set of instrumental variables (IV1) used in columns 4 to 6 includes the central government policy dummy, which equals 1 if a given year is greater than 2001, and dummies for the adoption of policies by Beijing, Shanghai, and Guangdong, and the interactions of these province policy dummies with the central government policy dummy. The second set of instrumental variables (IV2) used in columns 7 to 9 includes “Provincial Policy”, a dummy variable that takes value of one in years following the implementation of the policy in each province. In columns 6 and 9, where we define the performance measure in deviation from the industry and province median, we also interact the instruments with the firm characteristics “State”, “Foreign Ownership”, and “Size” in 1999 (the beginning of the sample period). If a firm enters our sample later than 1999, firm characteristics computed in the year of the firm’s entry in the sample are used to construct the interaction terms. All the variables are defined in the Appendix. All equations include the constant term, but the coefficient is not reported. T-statistics computed with robust standard errors clustered at firm level are reported in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

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</thead>
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<td>(3)</td>
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<td>0.166***</td>
<td>0.109**</td>
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<td>(2.65)</td>
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<td></td>
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<td>-0.034</td>
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<td>(3.03)</td>
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<td>(1.35)</td>
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<td>(1.35)</td>
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<td>0.141***</td>
<td>0.121***</td>
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<td>0.02</td>
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## Table 7

**Directors with Foreign Experience and Profitability**

In this table we relate the firm’s profitability to the presence of directors with foreign experience. In columns 1 to 3 we present ordinary least squares estimates. In columns 4 to 9 we present instrumental variable estimates. In columns 1 to 5 and 7 to 8, the dependent variable is the firm’s ROA at \( t + 1 \) from which we subtract the industry-year median. The dependent variable in columns 6 and 9 is the firm’s ROA at \( t + 1 \) from which we subtract the industry-year median and the province-year median. The first set of instrumental variables (IV1) used in columns 4 to 6 includes the central government policy dummy, which equals 1 if a given year is greater than 2001, and dummies for the adoption of policies by Beijing, Shanghai, and Guangdong, and the interactions of these province policy dummies with the central government policy dummy. The second set of instrumental variables (IV2) used in columns 7 to 9 includes “Provincial Policy”, a dummy variable that takes value of one in years following the implementation of the policy in each province. In columns 6 and 9, where we define the performance measure in deviation from the industry and province median, we also interact the instruments with the firm characteristics “State”, “Foreign Ownership”, and “Size” in 1999 (the beginning of the sample period). If a firm enters our sample later than 1999, firm characteristics computed in the year of the firm’s entry in the sample are used to construct the interaction terms. All the variables are defined in the Appendix. All equations include the constant term, but the coefficient is not reported. T-statistics computed with robust standard errors clustered at firm level are reported in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

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<td>(3)</td>
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<td>(5.14)</td>
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<td>0.03</td>
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Table 8  
Proportion of Directors with Foreign Experience and Other Board Characteristics

In this table we relate the proportion of directors with foreign experience to performance including additional control variables. For all panels, the dependent variable is the market to book ratio (MTB) from which we subtract the industry-year median in columns 1 and 2, the total factor productivity (TFP) from which we subtract the industry-year median in column 3 and 4, and the ROA at year $t+1$ from which we subtract the industry-year median in columns 5 and 6. The additional controls are: “Average Tenure”, defined as the average tenure of the firm’s directors, where a director’s tenure is computed as one plus the difference between the current year and the year when the director joined the board of a given firm; “Executive Directors (Fraction)”, defined as the proportion of directors that are executives of the sample firm; “Female Directors (Fraction)”, defined as the proportion of female directors in the firm’s board; “Average Age”, defined as the average age of the directors; “Foreign Directors (Fraction)”, defined as the proportion of foreign directors in the firm’s board; “Board Political Connections”, defined as the proportion of politically connected directors, where a politically connected director is a current or former government bureaucrat as in Fan et al. (2007) and Calomiris et al. (2010); and “Top Chinese University (Fraction)”, defined as the proportion of directors that have a degree at the two Chinese top universities: Peking University and Tsinghua University. The rest of variables are defined in the Appendix. In Panel A we present ordinary least squares estimates. Panels B and C report the instrument variable estimates. In Panel B, the instrumental variables (IV1) include the central government policy dummy, which equals 1 if a given year is greater than 2001, and dummies for the adoption of policies by Beijing, Shanghai, and Guangdong, and the interactions of these province policy dummies with the central government policy dummy. In Panel C the instrumental variable is “Provincial Policy”, a dummy variable that takes value of one in years following the implementation of the policy in each province. All equations include the constant term, but the coefficient is not reported. T-statistics computed with robust standard errors clustered at firm level are reported in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

Panel A: Ordinary Least Squares

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<td>-0.401**</td>
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<td>0.000</td>
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45
Table 8 continued.  
Panel B: Instrumental Variable Estimates (IV1)

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<td>(3.39)</td>
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<td>(-0.76)</td>
<td>(-0.74)</td>
<td>(-5.61)</td>
</tr>
<tr>
<td>Average Tenure</td>
<td>0.030**</td>
<td>0.024*</td>
<td>0.003</td>
</tr>
<tr>
<td></td>
<td>(2.14)</td>
<td>(1.75)</td>
<td>(0.90)</td>
</tr>
<tr>
<td>Executive Directors (Fraction)</td>
<td>-0.245***</td>
<td>-0.246***</td>
<td>0.036</td>
</tr>
<tr>
<td></td>
<td>(-2.92)</td>
<td>(-2.84)</td>
<td>(1.50)</td>
</tr>
<tr>
<td>Board Size</td>
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<td>0.008</td>
<td>0.006***</td>
</tr>
<tr>
<td></td>
<td>(0.97)</td>
<td>(1.12)</td>
<td>(2.69)</td>
</tr>
<tr>
<td>Female Directors (Fraction)</td>
<td>-0.163</td>
<td>-0.024</td>
<td>0.006</td>
</tr>
<tr>
<td></td>
<td>(-0.98)</td>
<td>(-0.56)</td>
<td>(0.61)</td>
</tr>
<tr>
<td>Average Age</td>
<td>0.008*</td>
<td>0.004***</td>
<td>0.001**</td>
</tr>
<tr>
<td></td>
<td>(1.66)</td>
<td>(3.21)</td>
<td>(2.58)</td>
</tr>
<tr>
<td>Foreign Directors (Fraction)</td>
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<td>-1.030**</td>
<td>-0.018</td>
</tr>
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<td>(-0.21)</td>
</tr>
<tr>
<td>Board Political Connection</td>
<td>0.005</td>
<td>-0.046</td>
<td>0.003</td>
</tr>
<tr>
<td></td>
<td>(0.04)</td>
<td>(-1.03)</td>
<td>(0.30)</td>
</tr>
<tr>
<td>Top Chinese University (Fraction)</td>
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<td>-0.008</td>
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<td>12,949</td>
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<tr>
<td>R-squared</td>
<td>0.08</td>
<td>0.09</td>
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Table 8 continued.  
Panel C: Instrumental Variable Estimates (IV2)

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<th>TFP</th>
<th>ROA (t+1)</th>
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<tbody>
<tr>
<td></td>
<td>(1)</td>
<td>(2)</td>
<td>(3)</td>
</tr>
<tr>
<td>Foreign Experience</td>
<td>6.590**</td>
<td>7.464**</td>
<td>1.349**</td>
</tr>
<tr>
<td></td>
<td>(2.56)</td>
<td>(2.28)</td>
<td>(2.04)</td>
</tr>
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<td>Foreign Ownership</td>
<td>-1.954*</td>
<td>-1.742</td>
<td>-0.572**</td>
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<td>(-1.80)</td>
<td>(-1.62)</td>
<td>(-2.06)</td>
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<td>Block</td>
<td>0.682***</td>
<td>0.645***</td>
<td>0.130***</td>
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<tr>
<td></td>
<td>(4.96)</td>
<td>(4.66)</td>
<td>(3.44)</td>
</tr>
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<td>State</td>
<td>-0.080</td>
<td>-0.108*</td>
<td>0.024</td>
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<td>(-1.24)</td>
<td>(-1.67)</td>
<td>(1.49)</td>
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<td>-0.528***</td>
<td>-0.009</td>
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<tr>
<td></td>
<td>(-15.74)</td>
<td>(-16.62)</td>
<td>(-1.19)</td>
</tr>
<tr>
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<td>-0.083</td>
<td>-0.083</td>
<td>-0.137***</td>
</tr>
<tr>
<td></td>
<td>(-0.68)</td>
<td>(-0.68)</td>
<td>(-5.33)</td>
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<td>Average Tenure</td>
<td>0.031**</td>
<td>0.026*</td>
<td>0.003</td>
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<td></td>
<td>(2.08)</td>
<td>(1.69)</td>
<td>(0.94)</td>
</tr>
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<td>Executive Directors (Fraction)</td>
<td>-0.159</td>
<td>-0.122</td>
<td>0.051</td>
</tr>
<tr>
<td></td>
<td>(-1.11)</td>
<td>(-0.74)</td>
<td>(1.34)</td>
</tr>
<tr>
<td>Board Size</td>
<td>0.008</td>
<td>0.009</td>
<td>0.006***</td>
</tr>
<tr>
<td></td>
<td>(0.91)</td>
<td>(1.04)</td>
<td>(2.59)</td>
</tr>
<tr>
<td>Female Directors (Fraction)</td>
<td>-0.044</td>
<td>-0.011</td>
<td>-0.20</td>
</tr>
<tr>
<td></td>
<td>(0.19)</td>
<td>(0.32)</td>
<td>(0.73)</td>
</tr>
<tr>
<td>Average Age</td>
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<td>0.004***</td>
<td>0.001**</td>
</tr>
<tr>
<td></td>
<td>(1.53)</td>
<td>(3.16)</td>
<td>(2.56)</td>
</tr>
<tr>
<td>Foreign Directors (Fraction)</td>
<td>-7.656*</td>
<td>-1.347</td>
<td>-0.088</td>
</tr>
<tr>
<td></td>
<td>(-1.94)</td>
<td>(-1.43)</td>
<td>(-0.46)</td>
</tr>
<tr>
<td>Board Political Connection</td>
<td>0.003</td>
<td>-0.046</td>
<td>0.003</td>
</tr>
<tr>
<td></td>
<td>(0.02)</td>
<td>(-0.99)</td>
<td>(0.29)</td>
</tr>
<tr>
<td>Top Chinese University (Fraction)</td>
<td>-3.118</td>
<td>-0.748</td>
<td>-0.050</td>
</tr>
<tr>
<td></td>
<td>(-1.45)</td>
<td>(-1.34)</td>
<td>(-0.43)</td>
</tr>
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<td># of obs.</td>
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<td>12,949</td>
<td>12,949</td>
</tr>
<tr>
<td>R-squared</td>
<td>0.19</td>
<td>0.19</td>
<td>0.02</td>
</tr>
</tbody>
</table>
Table 9
Direct and Indirect Effects of the Provincial Policies

The dependent variable is the firm’s market to book ratio (MTB) from which we subtract the province-year median in columns (1), the firm’s total factor productivity (TFP) from which we subtract the province-year median in column (2), and the ROA from which we subtract the province-year median in column (3). Variable definitions are in the Appendix. All equations include the constant term, but the coefficient is not reported. T-statistics computed with robust standard errors clustered at firm level are reported in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

<table>
<thead>
<tr>
<th></th>
<th>MTB</th>
<th>TFP</th>
<th>ROA</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(1)</td>
<td>(2)</td>
<td>(3)</td>
</tr>
<tr>
<td>Provincial Policy * Foreign Experience</td>
<td>0.460*** (2.58)</td>
<td>0.148*** (2.58)</td>
<td>0.025** (2.24)</td>
</tr>
<tr>
<td>Provincial Policy</td>
<td>-0.042 (-1.11)</td>
<td>-0.011 (-0.98)</td>
<td>-0.003 (-0.87)</td>
</tr>
<tr>
<td>Foreign Ownership</td>
<td>0.782*** (3.16)</td>
<td>-0.075 (-1.11)</td>
<td>-0.022 (-1.44)</td>
</tr>
<tr>
<td>Block</td>
<td>0.633*** (6.08)</td>
<td>0.101*** (3.05)</td>
<td>0.038*** (5.52)</td>
</tr>
<tr>
<td>State</td>
<td>-0.147*** (-3.81)</td>
<td>0.014 (1.30)</td>
<td>-0.011*** (-4.50)</td>
</tr>
<tr>
<td>Size</td>
<td>-0.549*** (-24.86)</td>
<td>0.000 (0.06)</td>
<td>0.014*** (11.73)</td>
</tr>
<tr>
<td>Leverage</td>
<td>-0.145 (-1.27)</td>
<td>-0.163*** (-6.89)</td>
<td>-0.146*** (-22.48)</td>
</tr>
<tr>
<td>Year FE</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Industry FE</td>
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<td>Yes</td>
<td>Yes</td>
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<td># of obs.</td>
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<td>12,949</td>
<td>12,903</td>
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<tr>
<td>R-squared</td>
<td>0.24</td>
<td>0.02</td>
<td>0.20</td>
</tr>
</tbody>
</table>
### Table 10
Corporate Policies

This table relates corporate policies to the proportion of directors with foreign experience. The dependent variable in columns 1 to 3 is “Overseas M&A”, a dummy variable equal to one if at least one of the mergers and acquisitions a sample firm announced in a given year involves a foreign firm, and zero otherwise. In columns 4 to 6, the dependent variable is “Overseas Private Placement”, a dummy variable equal to one if at least one of the firm’s private placements in a given year is targeted to foreign investors and zero if none of these private placements is targeted to foreign investors. In columns 7 to 9, the dependent variable is the Chen and Yuan’s (2004) measure of firm earnings management. In columns 9 to 11, the dependent variable is “Overseas Sales”, from which we subtract the year-industry median. In columns 1, 4, 6 and 9, estimates are obtained by ordinary least squares; in the rest of the columns we report instrumental variable estimates. In columns 1, 4, 6 and 9, estimates are obtained by ordinary least squares; in the rest of the columns we report instrumental variable estimates. In columns 2, 7 and 10, we use the first set of instrumental variables (IV1), which includes the central government policy dummy, which equals 1 if a given year is greater than 2001, and dummies for the adoption of policies by Beijing, Shanghai, and Guangdong, and the interactions of these province policy dummies with the central government policy dummy. In columns 3, 5, 8 and 11, we use the second set of instrumental variables (IV2), which includes the Provincial Policy dummy. Variable definitions are in the Appendix. All equations include the constant term, but the coefficient is not reported. T-statistics computed with robust standard errors clustered at firm level are reported in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

<table>
<thead>
<tr>
<th></th>
<th>Overseas M&amp;A</th>
<th>Overseas Private Placement</th>
<th>Earnings Management</th>
<th>Overseas Sales</th>
</tr>
</thead>
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<td>OLS</td>
<td>IV1</td>
<td>IV2</td>
<td>OLS</td>
</tr>
<tr>
<td>(1)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Foreign Experience</td>
<td>0.217***</td>
<td>1.096***</td>
<td>1.161***</td>
<td>-0.016**</td>
</tr>
<tr>
<td>Size</td>
<td>(3.88)</td>
<td>(3.40)</td>
<td>(3.91)</td>
<td>(-2.36)</td>
</tr>
<tr>
<td>Leverage</td>
<td>0.013**</td>
<td>0.008</td>
<td>0.007</td>
<td>0.000</td>
</tr>
<tr>
<td>ROA</td>
<td>(-1.14)</td>
<td>(-1.07)</td>
<td>(-1.06)</td>
<td>(0.00)</td>
</tr>
<tr>
<td>MTB</td>
<td>-0.075</td>
<td>-0.112</td>
<td>-0.113</td>
<td>0.511</td>
</tr>
<tr>
<td>Block</td>
<td>(1.99)</td>
<td>(1.14)</td>
<td>(1.13)</td>
<td>(0.18)</td>
</tr>
<tr>
<td>State</td>
<td>-0.021***</td>
<td>-0.022***</td>
<td>-0.018***</td>
<td>-0.021***</td>
</tr>
<tr>
<td>Year FE</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Firm FE</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td># of obs.</td>
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<td>3,781</td>
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<td>R-squared</td>
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<td>0.03</td>
<td>0.03</td>
<td>0.03</td>
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</table>
Table 11
The Quality of Foreign Experience

We relate firm performance to the quality of foreign education and to foreign work experience. In all panels, the dependent variable is MTB in columns 1 to 3, TFP in columns 4 to 6, and ROA at t+1 in columns 7 to 9, from which we subtract the industry-year median. Proxies for quality of foreign education—“Foreign Education (Degree),” “Foreign Education (Rank),” and “Foreign Education (Degree-Rank)”—as well as control variables are defined in the Appendix. In Panel A we report ordinary least squares estimates. In Panel B, we report instrumental variable estimates where the proxy for the quality of foreign education is instrumented. In Panel C, we report instrumental variable estimates where “Foreign Work Experience” is instrumented. In the instrumental variable estimates, the first set of instruments (IV1) includes the central government policy dummy, which equals 1 if a given year is greater than 2001, and dummies for the adoption of policies by Beijing, Shanghai, and Guangdong, and the interactions of these province policy dummies with the central government policy dummy. The second set of instruments (IV2) includes the Provincial Policy dummy. All equations include the constant term, but the coefficient is not reported. T-statistics computed with robust standard errors clustered at firm level are reported in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

Panel A: Ordinary Least Squares

<table>
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<th>Quality of Foreign Education (Degree)</th>
<th>MTB</th>
<th>TFP</th>
<th>ROA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quality of Foreign Education (Degree)</td>
<td>0.249** (2.39)</td>
<td>0.055** (2.05)</td>
<td>0.021*** (2.76)</td>
</tr>
<tr>
<td>Quality of Foreign Education (Rank)</td>
<td>0.239** (2.07)</td>
<td>0.054** (1.97)</td>
<td>0.021*** (2.60)</td>
</tr>
<tr>
<td>Quality of Foreign Education (Degree-Rank)</td>
<td>0.189** (2.23)</td>
<td>0.046** (2.16)</td>
<td>0.017*** (2.73)</td>
</tr>
<tr>
<td>Foreign Work Experience</td>
<td>0.276 (0.77)</td>
<td>0.332 (0.94)</td>
<td>0.312 (0.87)</td>
</tr>
<tr>
<td>Foreign Ownership</td>
<td>0.775 (1.34)</td>
<td>0.808 (1.39)</td>
<td>0.809 (1.39)</td>
</tr>
<tr>
<td>Block</td>
<td>-0.511*** (-2.83)</td>
<td>-0.513*** (-2.84)</td>
<td>-0.511*** (-2.83)</td>
</tr>
<tr>
<td>State</td>
<td>-0.134** (-1.34)</td>
<td>-0.136** (-1.39)</td>
<td>-0.135** (-1.39)</td>
</tr>
<tr>
<td>Size</td>
<td>-0.571*** (-14.75)</td>
<td>-0.571*** (-14.73)</td>
<td>-0.571*** (-14.75)</td>
</tr>
<tr>
<td>Leverage</td>
<td>0.275** (2.26)</td>
<td>0.275** (2.26)</td>
<td>0.275** (2.26)</td>
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<td>Yes</td>
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<td>0.09</td>
<td>0.09</td>
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<td>MTB</td>
<td>TFP</td>
</tr>
<tr>
<td>---------------------</td>
<td>--------------</td>
<td>------------</td>
<td>------------</td>
</tr>
<tr>
<td></td>
<td>(1)</td>
<td>(2)</td>
<td>(3)</td>
</tr>
<tr>
<td>Foreign Education (Degree)</td>
<td>3.429***</td>
<td>0.510***</td>
<td>0.100***</td>
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<tr>
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<td>(5.41)</td>
<td>(3.41)</td>
<td>(3.33)</td>
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<td>Foreign Education (Rank)</td>
<td>3.858***</td>
<td>0.519***</td>
<td>0.094***</td>
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<tr>
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<td>(5.58)</td>
<td>(3.32)</td>
<td>(2.99)</td>
</tr>
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<td>(2.99)</td>
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<td>-0.966**</td>
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<td>(-2.46)</td>
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<td>(5.06)</td>
<td>(5.15)</td>
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<td>-0.106**</td>
<td>-0.105**</td>
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<td>(-2.23)</td>
<td>(-2.21)</td>
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<td>-0.543***</td>
<td>-0.550***</td>
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<tr>
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<td>(-18.26)</td>
</tr>
<tr>
<td>Leverage</td>
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<td>-0.076</td>
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<td>(-0.63)</td>
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<td>0.19</td>
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Panel B: Instrumental Variable Estimates – Foreign Education
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<th>ROA</th>
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<td>(2)</td>
<td>(3)</td>
</tr>
<tr>
<td>Foreign Education (Degree)</td>
<td>4.293***</td>
<td>(3.57)</td>
<td>0.604**</td>
</tr>
<tr>
<td>Foreign Education (Rank)</td>
<td>4.540***</td>
<td>(3.66)</td>
<td>0.582**</td>
</tr>
<tr>
<td>Foreign Education (Degree-Rank)</td>
<td>3.888***</td>
<td>(3.82)</td>
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</tr>
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<td>0.639***</td>
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<td>0.114***</td>
</tr>
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<td>0.016</td>
</tr>
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<td>(-15.08)</td>
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<td>Leverage</td>
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</tr>
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</tr>
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<td>0.18</td>
<td>0.18</td>
</tr>
<tr>
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<td></td>
</tr>
<tr>
<td>------------------</td>
<td>----------------------</td>
<td>--------------</td>
<td>--------------</td>
</tr>
<tr>
<td></td>
<td>MTB</td>
<td>TFP</td>
<td>ROA</td>
</tr>
<tr>
<td></td>
<td>(1)</td>
<td>(2)</td>
<td>(3)</td>
</tr>
<tr>
<td>Foreign Work Experience</td>
<td>5.025**</td>
<td>1.987***</td>
<td>0.277**</td>
</tr>
<tr>
<td></td>
<td>(2.46)</td>
<td>(3.22)</td>
<td>(2.57)</td>
</tr>
<tr>
<td>Foreign Ownership</td>
<td>-1.042</td>
<td>-0.748***</td>
<td>-0.121***</td>
</tr>
<tr>
<td></td>
<td>(-1.30)</td>
<td>(-3.11)</td>
<td>(-2.81)</td>
</tr>
<tr>
<td>Block</td>
<td>0.583***</td>
<td>0.133***</td>
<td>0.037***</td>
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<tr>
<td></td>
<td>(5.24)</td>
<td>(3.78)</td>
<td>(5.12)</td>
</tr>
<tr>
<td>State</td>
<td>-0.121***</td>
<td>0.024*</td>
<td>-0.011***</td>
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<tr>
<td></td>
<td>(-2.77)</td>
<td>(1.95)</td>
<td>(-4.08)</td>
</tr>
<tr>
<td>Size</td>
<td>-0.474***</td>
<td>0.001</td>
<td>0.015***</td>
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<td></td>
<td>(-20.82)</td>
<td>(0.21)</td>
<td>(13.33)</td>
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<tr>
<td>Leverage</td>
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<td>-0.146***</td>
<td>-0.141***</td>
</tr>
<tr>
<td></td>
<td>(-0.91)</td>
<td>(-5.79)</td>
<td>(-20.96)</td>
</tr>
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<td># of obs.</td>
<td>12,949</td>
<td>12,949</td>
<td>12,903</td>
</tr>
<tr>
<td>R-squared</td>
<td>0.18</td>
<td>0.02</td>
<td>0.16</td>
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