

# Doing Business in China: Parental Background and Government Intervention as Determinants of Entrepreneurship\*

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## Abstract

We examine the parental determinants of entrepreneurship in contemporary China using multiple waves of a nationally representative survey between 2005 and 2012. While intergenerational transmission of entrepreneurship is a well-known regularity, we hypothesize that in an economy where the state retains an important role, those whose parents are government workers may also be more likely to become entrepreneurs. We show that *both* entrepreneurs and government workers have a higher likelihood of having children who own incorporated businesses. We then exploit the wide heterogeneity in government involvement in the economy across China. We find that in provinces where government involvement is higher, intergenerational transmission of entrepreneurship is much weaker. In contrast, in these provinces the likelihood that children of government workers own incorporated businesses is significantly higher. We thus demonstrate that the local economic business environment shapes the influence of parental background on entrepreneurship.

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# 1 Introduction

For the last two decades, the literature on entrepreneurship has posited a number of environmental and individual factors that influence the choice of becoming an entrepreneur.<sup>1</sup> One of the most robust findings in this literature is parental transmission of entrepreneurship: descendants of entrepreneurs have a much higher likelihood of being entrepreneurs themselves (Sørensen 2007). Several potential channels have been probed empirically, and there is evidence for a significant genetic component in entrepreneurship (Nicolaou et al 2008, Lindquist et al 2015), role modeling (Sørensen 2007), and specific human capital and networks associated with a given industry or profession (Dunn and Holtz-Eakin 2000).

While the relative importance of these different channels is still a matter of scholarly debate, the literature has so far overlooked the possibility that the institutional environment may shape the importance of parental background for entrepreneurship. This is despite the wide recognition that the institutional environment shapes entrepreneurship opportunities across countries. For instance, Baumol, Litan, and Schramm (2007) characterize countries into “good capitalism” – a mix of big-firm and entrepreneurial capitalism, and “bad capitalism” – state-guided and oligarchic capitalism; Zingales (2012) emphasizes the difference between “crony capitalism” that favors the elites and “a capitalism for the people” which allows open access to opportunities; and the World Bank publishes a yearly Doing Business Report which again highlights how the regulatory environment and state capabilities influence entrepreneurship. Since the skills, attitudes and networks needed for entrepreneurship across these institutional environments are very different, the corresponding relevant parental background should also vary.

The main contribution of this paper is to show that the type of parental background that matters for entrepreneurship changes significantly with the institutional environment, more specifically with the role of government in business. The setting for our empirical analysis is modern China, a context with two particular features that are very useful for the analysis. First, while modern China offers space for successful entrepreneurship, as exemplified by examples such as Alibaba and Tencent, the government is still a central agent in the economy. Second, the transition towards a market economy has been geographically uneven, and currently there is a wide heterogeneity in government involvement in the economy. While some provinces have followed a bottom-up free enterprise route to economic development, others have instead focused on large conglomerates and heavy government in-

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<sup>1</sup>See Parker (2009) for an extended discussion of the literature. The factors influencing entrepreneurship range from contextual peer effects (Nanda and Sorensen 2010) and social networks (Roberts and Sterling 2012), to personal characteristics such as overconfidence (Hayward, Mathew, Shepherd and Griffin 2006), and tolerance of uncertainty (Holm, Opper, and Nee 2013).

tervention. For example, Huang (2008) contrasts Shanghai, a provincial-level municipality that has championed state-led capitalism, with Zhejiang, which exemplifies entrepreneurial capitalism. Both of these provinces are among the most developed in China. However, there are substantially more private firms and registered patents per capita in Zhejiang than in Shanghai.

The paramount role of the government in the economy suggests that an entrepreneurial career may require access to specific knowledge about the internal workings of government as well as networks that extend into government institutions. Hence, in terms of determining one’s entrepreneurial aptitude, having parents who work in the government (henceforth, “cadre parents”) may be as important as having parents who are entrepreneurs.<sup>2</sup> Moreover, those with cadre parents should have a larger advantage in those provinces where the government has larger involvement in the economy. Therefore, by comparing the relative importance of entrepreneurial and cadre parental background across provinces, we can infer whether the institutional environment is determining the networks and specific human capital that are necessary for entrepreneurship with the advantage of a within-country design, which keeps other potential confounders constant.

We use the Chinese General Social Survey (CGSS) which distinguishes between those who own incorporated businesses (“business owners” henceforth) and the self-employed. In modern China, these categories align with the distinction between transformational or opportunity entrepreneurship and subsistence or necessity entrepreneurship (Schoar 2010, Åstebro et al 2011). We show that having entrepreneur parents is associated with higher likelihood of both business ownership and self-employment. In contrast, having cadre parents leads to higher propensity of business ownership, but not to self-employment. We then show that the influence of parental background on business-ownership is contingent on government intervention, measured by provincial government spending on business activities over GDP (“government business spending” henceforth).<sup>3</sup> More specifically, we show that cadre parents’ propensity to have business-owner children is strongly increasing in government business spending. In contrast, higher government business spending is associated with lower likelihood that business owners have entrepreneur parents. These differing patterns are both statistically and economically significant: one standard deviation increase in government business spending is associated with a 0.75 percentage points reduction in the probability

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<sup>2</sup>Both types of parental links are often emphasized by observers and scholars. As put by the Financial Times (2015), “lift the curtain on many a rags-to-riches story in China, and one finds a father or grandfather who was a businessman or a government official.” <https://www.ft.com/content/9ddb3ffc-5734-11e5-9846-de406ccb37f2>. Consistent with this, while Fan, Wong, and Zhang (2007) and Li et al. (2008) find that political connections influence the performance of Chinese firms, Djankov et al (2006) show that having friends and family members who are entrepreneurs is an important driver of entrepreneurship in China.

<sup>3</sup>In Section 2 we justify this measure of government involvement at length.

that children of entrepreneurs are business owners and a 0.5 percentage point increase in the probability that children of cadres are business owners. These are very large effects since the average probability of business-ownership is 2.2%.

These findings are not confounded by the level of economic development across provinces or by individual characteristics of respondents, such as the level of education. They also hold when we exploit the Fiscal Stimulus in 2008 for arguably exogenous variation in government business spending, and can be replicated using the China Family Panel Studies (CFPS).<sup>4</sup> We conclude that the local institutional environment is a crucial determinant of the kind of parental background that is relevant for business ownership, and that having parents in government can be as important as family experience in business in driving *private* entrepreneurship when the state looms large over the local economy. Consistent with this interpretation, we show that business owners are, relative to the rest of respondents, more likely to identify political connections as a key determinant of career success, and this attitude is even more salient in provinces with more government spending on business.

The rest of the paper is organized as follows. Section 2 describes the background and the data. Section 3 presents the main empirical patterns. Section 4 presents further evidence for the mechanism behind our findings and concludes.

## 2 Background and Data

We combine individual-level surveys with provincial-level data in our analysis. We first describe the individual-level data. We then explain government business-related spending and the drivers of its variation.

### 2.1 Individual-level Data: Parental Background and Entrepreneurship

We obtain our individual-level data from the Chinese General Social Survey from 2006 to 2013 (CGSS), a Chinese version of the General Social Survey in the U.S. conducted by the National Opinion Research Center. The CGSS is also a part of the International Social Survey Program (ISSP) that covers 48 countries. The CGSS is a repeated cross-sectional survey, jointly conducted by the Renmin University of China and the Hong Kong Science and Technology University. Our sample includes five waves of the survey conducted in 2006, 2008, 2010, 2012, and most recently in 2013, which collects information in the year before

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<sup>4</sup>To keep the paper concise, we present these additional results in Appendix B.

the survey (i.e., 2005, 2007...,2012).<sup>5</sup> A typical wave of the CGSS includes about 10,000 urban and rural households. Given our interest in doing business, we focus on 22,801 urban residents aged between 25 and 80. Our sample covers all the 31 provinces in mainland China and provides a province-level panel dataset.

**Business Owners** In order to classify respondents into entrepreneurship status we use two categories. The first is *self-employed*, which includes owners of non-incorporated small businesses.<sup>6</sup> The second is *business owner*, which comprises all owners of incorporated businesses, who must pay corporation tax and follow corporation law. The existing literature often uses an encompassing category of self-employment as a proxy for entrepreneurship, but recent contributions have shown this can be problematic as it mixes necessity or subsistence entrepreneurship with opportunity or transformational entrepreneurship (see Schoar 2010, Åstebro et al. 2011, Levine and Rubinstein 2017, and Fairlie and Fossen 2018 for related research). As shown in Table 1, business-owners account for 2.2% of our respondents. In contrast, 10% of respondents are self-employed individuals. We use the term “entrepreneur” to refer to both categories when needed in the analysis (that is, “entrepreneurs” are those who are either self-employed or business owners).

**Parental Background** We focus on two types of parental background. The first one captures whether at least one parent works in government or in a public organization affiliated with the government (known as “shi ye dan wei” in Chinese, meaning public institutions). We call it a *cadre parent* for brevity. Public institutions are essential branches of the Chinese government, endowed with great power and influence. For example, the three major institutions that supervise and regulate the whole financial sector, the China Banking Regulatory Commission, the China Securities Regulatory Commission, and the China Insurance Regulatory Commission, are not officially a part of the government, but are public institutions. The parents’ employer is defined as their employer at the time when the respondent was 14 years old (except for the 2005 data in which it is when the respondent was 18 years old). As reported in Table 1, 19% of urban households belong to the cadre parent group.

The second important parental background is entrepreneurship. While the 2009-2012 waves of the GCSS distinguishes parent’s profession between business-owners and self-employed, these two categories are lumped into a single category in the 2005 and 2007 waves. In order to preserve sample size, the analysis in the paper uses the term “entrepreneur parents” which uses this category for the 2005 and 2007 waves and merges business-owners and

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<sup>5</sup>We cannot use earlier waves because they did not ask about entrepreneurial status or parental background.

<sup>6</sup>Only 17% of this category hire any other worker, and none of them hire more than 8 people.

self-employed parents for the 2009-2012 waves.<sup>7</sup>

**Individual Characteristics** The GCSS also contains additional information on gender, age, marital status, educational attainment and minority classification of the respondents, which we use in the analysis.

## 2.2 Provincial Variation in Government Intervention

Government spending over GDP has been shown to be useful in capturing the influence of the government on economic activities (Alesina et al. 2002). To this end, we obtain data on provincial fiscal spending from 2005 to 2012 from the statistical yearbooks.<sup>8</sup> To zoom into government’s influence in business, as opposed to expenditure on public services and insurance programs, we focus on expenditure in two categories: infrastructure, and manufacturing, commerce, and finance (MCF). Even though the level of disaggregation reported in the statistical yearbooks varies by year, we can always aggregate up to these two categories, and we refer to the total as *government business spending*. We describe the details in Appendix A1. To make this measure comparable across provinces, we divide government business spending at the province level by provincial GDP. On average, government business spending accounts for 16% of provincial total fiscal expenditure and, as reported in Table 1, it amounts to about 3% of provincial GDP.

Two additional facts support the relevance of this proxy as a measure of government intervention in the business environment. First, in Appendix A2 we show that our measure of business-related spending is strongly correlated with private firms’ receipt of government subsidies. More specifically, using data from the second National Economic Census (NEC), we show that a one standard deviation increase in provincial government business spending over GDP (0.02) is associated with a 0.6 percentage point increased probability of subsidy receipt, a very large effect compared to the mean probability (1.3 percentage points). This relationship is also true at the intensive margin and is robust to introducing firm-level controls.

The second fact pertains to the large fiscal economic stimulus plan that the Chinese central government approved in November of 2008 to combat the effects of the great recession and which was explicitly designed to increase business activity. Of the 4 trillion RMB stimulus package, 25% was devoted to reconstruction work in the regions destroyed by the

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<sup>7</sup>Because China did not begin transitioning towards market economy until the late 1970s, it is rare for parents of older respondents to have been business owners when they were 14. Thus, there is a good reason to merge these two categories, besides constraints imposed by the data.

<sup>8</sup>Spending is a better measure than revenue since the majority of tax revenue is collected by the central government, but the majority of fiscal spending remains in lower level governments.

Sichuan earthquake in 2008. However, a full 75% of the remainder went to government business spending.<sup>9</sup> At the provincial level, our measure of business-related spending went from about 2.4 percent (of provincial GDP) prior to the stimulus package to 4.8 percent post the stimulus package, while the increase in other fiscal expenditure was modest and proportionally insignificant (see the density distribution figures in Appendix A3). As a result, almost 70% of the provincial fiscal expansion between 2008 and 2010 is in this category of spending.

In sum, this measure of provincial spending over GDP is a credible proxy for government involvement in business.

**Variation in Government Business Spending** We interpret government business spending as capturing long-term differences across provinces in the economic role of the government. Two pieces of evidence support this interpretation. First, in our study period – 2005 to 2012 – the variation in provincial government business spending over GDP is primarily driven by differences across provinces, as opposed to differences over time: provincial fixed effects account for 72% of the variation. Second, we find that 55% of the cross-provincial variation in government business spending in 2007 is explained by the share of State Owned Enterprises (SOEs) in manufacturing in 1985 (presented in Appendix A4).<sup>10</sup> Huang (2008) also finds long term differences in the development strategies followed by provincial governments, which are reflected in our variation in government business spending.

Crucially, it is worth noting that this cross-province variation in government business spending is only weakly explained by relative economic development. As shown in Appendix A4, while the correlation between government business spending over GDP and GDP per capita is negative, the latter only explains 22% of the variation of the former.

## 2.3 Descriptive Patterns

We now present three descriptive patterns using data aggregated at the province level. We demean government business spending by its sample mean so that a positive value means spending more than average. First, as shown in panel (a) of Figure 1, there is a negative correlation between government business spending and the share of respondents who are business owners. Thus, higher business spending does not imply a better business environment.

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<sup>9</sup>For the breakdown of the stimulus package, announced by the National Development and Reform Commission, see: [http://www.eeo.com.cn/ens/finance\\_investment/2009/03/07/131626.shtml](http://www.eeo.com.cn/ens/finance_investment/2009/03/07/131626.shtml).

<sup>10</sup>Note that our measure of business spending does not include the role of State Owned Enterprises (SOEs). This is because our parental background measures parents who work in *government* institutions and therefore it does not include those working in SOEs. While the distinction is conceptually important, it turns out to not be empirically crucial due to the strong correlation detailed above.

If anything, it may indicate more government intervention that hinders entrepreneurship. Second, panel (b) shows that the difference between cadre children and non-cadre children in becoming a business owner is larger in provinces with higher business spending. A one standard deviation increase in government business spending (0.02) increases the difference by about 0.75 percentage points or 35% of the mean. In other words, cadre children are more likely to become businessmen relative to others in provinces with higher business spending. Third, panel (c) shows that the opposite is true for children of entrepreneurs. In provinces where government involvement is low, children of entrepreneurs have a much higher likelihood of owning a business, but this advantage disappears in provinces with high government involvement. We probe the robustness of these province-level patterns with individual-level information in the next section.

### 3 Empirical Results

We first explore the relationship between parental background, self-employment and business ownership, followed by an analysis of the effect of the local economic context on these relationships.

#### 3.1 Parental Background and Doing Business

To examine the difference in the probability of being a business owner between those with entrepreneur parents, cadre parents and others, we employ both ordinary least squares (OLS) analysis and multinomial logistic analysis. The advantage of a simple OLS estimate is that it is transparent and we can compare the estimates with those from the subsequent interaction analysis; the disadvantage is that it omits the fact that respondents face a multiple choice problem as they can only choose one occupation. This turns out to be very important in the case of descendants of cadres, since they have a high propensity of working for the government.<sup>11</sup>

**OLS Analysis** Table 2 reports the results of regressions of the following form:

$$occupation_{i,p,t} = \beta_1 cadreparent_{i,p,t} + \beta_2 entrepreneurparent_{i,p,t} + province\_year_{p,t} + \varepsilon_{i,p,t}, \quad (1)$$

where  $occupation_{i,p,t}$  is a dummy indicating whether an individual  $i$  surveyed in province  $p$  and year  $t$  is an entrepreneur, self-employed or a business owner, depending on the column.

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<sup>11</sup>While about 18% of respondents have a government job, 34% of children of cadres have a government job.

$cadreparent_{i,p,t}$  is a dummy indicating having at least one parent working in government.  $entrepreneurparent_{i,p,t}$  is a dummy indicating at least one parent is an entrepreneur. A set of province-by-year fixed effects help control for the general difference in running a business across provinces, so our coefficients of interest are identified out of within province-year variation. Accordingly, we cluster standard errors at the province-year level.

Column (1) of Table 2 reports that having an entrepreneur parent increases by almost 8 percentage points the probability of the respondent being an entrepreneur, while having a cadre parent is associated with no significant difference. An entrepreneurial parent thus increases the likelihood of entrepreneurship by a factor of 1.8, which is in line with the findings in the literature in other countries (e.g. Lindquist et al, 2015).

In Columns (2) and (3) we look separately at the two categories that comprise entrepreneurship, namely business-owners and self-employed. Column (2) reports that both types of parental background increase the odds of business-ownership. From a sample mean of 2.2% business owners, entrepreneurial parents are associated with a 1.6 percentage point increase, while cadre parents are associated with a 0.6 percentage point increase. While entrepreneur parental background is stronger, both are statistically and economically significant.

In Column (3) we have the results for self-employed respondents. Having a cadre parent *reduces* the probability of being self-employed, by 0.9 percentage points over a baseline of 10%. This is not the case for entrepreneur parents, who almost double the probability of their children being self-employed. The contrast between Column (2) and Column (3) is consistent with the idea that owning an incorporated business is likely related to opportunity or transformational entrepreneurship, while being self-employed most likely captures necessity or subsistence (Schoar 2010). Indeed, since cadre descendants are highly likely of attaining a desirable government job, they may only become entrepreneurs if they expect to be particularly successful. It thus makes sense that children of cadres have higher odds of becoming business-owners, but lower odds of becoming self-employed, compared to the general population.

**Multinomial Logistic Estimates** With a multinomial logistic setup, we can compare the relative risk of being a business owner, working in the government, and having other occupations. We report the estimates of having cadre parents or entrepreneur parents in Table 3, column (1). In addition, to avoid individual confounders, in column (2) we control for the following individual characteristics: age, marital status, ethnic minority status and college education.

Results are clear-cut. For those with cadre parents relative to those with non-cadre

parents: (1) the relative risk for working in the government relative to having other jobs (i.e. neither in government nor being a business owner) increases by a factor of 2, *ceteris paribus* the other variables in the model; and (2) the relative risk for being a business owner relative to having other jobs increases by a factor of 1.4.

In contrast, for those with entrepreneur parents, only the relative risk of being a business owner is 1.6 times higher than those without entrepreneur parents, while the relative risk of working in the government is not significantly different. The magnitude of 1.6 is comparable to those found in the existing literature in other countries. We are not aware of similar studies examining the intergenerational link across occupations (i.e., the cadre parents-business children link) and our estimate provides a benchmark for future studies.

In sum, in modern China, both entrepreneur and cadre parental backgrounds are associated with respondents' higher likelihood of owning businesses. Once we take into account that those with cadre parents have, on average, a higher probability of working in the government, both parental backgrounds have a similar influence in the odds of business-ownership.

### 3.2 Parental Background and Local Economic Context

Now we investigate whether the local context determines the influence of parental background on entrepreneurship. More specifically, we ask whether the association between parental occupation and business ownership varies with the level of government intervention in the business environment.

Table 4 contains our main analysis. We enrich our specification (1) above introducing interaction terms between parental background indicators and provincial government business spending over GDP. We demean the business spending by its sample mean so the interaction coefficient can be interpreted as the effect of parental occupation at the mean value of provincial spending.

In column (1) we examine the parental background of respondents who are entrepreneurs. There is no significant effect of the interaction terms: by this definition, entrepreneurship has a strong intergenerational component which does not vary by local economy context. The picture changes when we disaggregate entrepreneurship into self-employment and business ownership. While results for self-employment again do not vary with government intervention (see column (2)), business ownership changes quite drastically with the environment. More specifically, column (3) reports that those with cadre parents experience higher odds of owning a business where government intervention in the economy is larger. In contrast, respondents with entrepreneur parents see their relative odds of becoming business own-

ers erode with government intervention. Adding the interaction of individual characteristics with government intervention (column (4)) or controlling for provincial GDP per capita (column (5)) does not change this conclusion. In fact, the coefficients of interest become more precisely estimated.

The interaction between parental background and government intervention is not only statistically but economically significant. The standard deviation of provincial business spending is 0.02. The coefficients in column (4) therefore imply that an increase of province government spending by a standard deviation is associated with a reduction in the business-ownership likelihood of the children of entrepreneurs of 0.75 percentage points. Therefore, two standard deviations are enough to wipe out the main effect of having an entrepreneur parent. In contrast, an increase by a standard deviation is associated with 0.5 percentage points increase in the odds that cadre children own a business. This is a very large effect considering the average increase was 0.6% (column 2 of Table 2).

Our findings above show that the influence of parental background on the chances of owning a business changes with the local level of government intervention in business. There are two main challenges to this interpretation. First, having cadre parents may capture other parental characteristics such as more human capital to do business. Second, government business spending may be correlated with other provincial characteristics which may drive the differences across provinces.

For the first concern, in column (4) of Table 4 we have included the interaction of personal characteristics and government business spending. Hence our results are not driven by other individual characteristics. Note, in particular, that human capital as captured by college degree attainment, cannot explain the patterns we see across provinces. We do not find a significant interaction effect between better-educated parents and government business spending on becoming a business owner either (see Appendix B1).

To address the second concern, we first show that the interaction of parental background with GDP per capita is not significant, which implies that our findings are not driven by provincial economic characteristics such as the level of development (column (5) of Table 4). Second, in Appendix B2 we show that the interaction effect of parental background and other types of government spending is neither economically nor statistically significant. In the same table we show that having cadre parents helps children obtain jobs in government, but this does not vary with provincial business spending. Hence the link is very specific between parental background, ownership of an incorporated business, and provincial fiscal expenditure on business matters. Finally, we employ the Fiscal Stimulus in 2008 as a shock to government business spending and find that the advantage of cadre children in doing business in provinces with a higher pre-stimulus business spending gets even stronger after the

stimulus, while there is no effect in laissez-faire provinces (analysis presented in Appendix B3).<sup>12</sup>

## 4 Discussion and Conclusion

While there exists an extensive literature on the determinants of entrepreneurship, few studies have paid attention to the interaction of individual characteristics and government policies. In this study, we document for the first time that those with cadre parents have higher odds of becoming business owners, compared to the general population. More importantly, we show that the effect of parental background, cadre and entrepreneur, on children's business-ownership changes with government's involvement in the economy.

The literature has discussed many potential reasons for the intergenerational association of occupations (see Parker 2009). While disentangling the relative roles of the different mechanisms is beyond the scope of this paper, we can provide some pieces of evidence that suggest that networking links within government, as well as specific human capital related to the government, contribute to the patterns we unveiled.

First, recall that as discussed in Section 2, in Appendix A2 we show that higher government business spending is associated with a higher percentage of firms acknowledging receipt of government subsidies, as well as higher levels of subsidy. Firms seeking these subsidies need to be incorporated, and would benefit both from specific human capital related to successfully applying for those subsidies as well as from favorable treatment of their applications due to the influence of networks that extent within government. This can explain the fact that (1) the patterns we uncover are only present for incorporated business owners, (2) those with cadre parents are more often business owners in places where government intervention is higher and (3) children of entrepreneur parents have no higher likelihood of owning businesses, compared to the general population, when government intervention is high enough.

Second, we can provide direct evidence that government business spending is correlated with the attitude of business owners towards the government. The CGSS survey data in 2005 includes a subjective evaluation of the determinants of career success. Panel C of Table 1 lists the four determinants of career success covered by the survey: connections with political power, hard work, luck, and ambition. Each respondent rates each factor as: essential, very

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<sup>12</sup>Our results are also robust to the subsample of natives to each province, allaying concerns that selective migration might be behind our findings. They are also robust to using data during 2009-2012, which use the same set of counties. These checks are presented in Appendix B4. Finally, we find a similar pattern using another survey known as the China Family Panel Studies (CFPS), even though we have to combine business owners and self-employed in this survey (see more discussion in Appendix B5).

important, important, not very important, not important at all, or hard to say. For each factor, we code the answer “essential” as 1 and the rest as 0. Table 1 shows that on average, luck is regarded to be a less essential determinant of success than the rest. We proceed to examine how government spending affects people’s perception on what determines career success. Column (1) of Table 5 shows that on average, business owners are 9 percentage points more likely to see political connections as a key determinant in career success. When government business spending increases by one standard deviation (2 percentage points), this effect doubles. For the other three determinants in columns (3)-(8), neither the correlation of being a business owner nor its interacted effect with government spending are positive and significant. These results suggest that connections with the government are essential elements for the successful conduct of business, and that their relative importance strongly increases with the degree of involvement of the government in the economy. Furthermore, this seems to be a well recognized fact by business owners.

Our results have a number of implications for our understanding of entrepreneurship and the business environment. First, we contribute to the literature on parental determinants of entrepreneurship by demonstrating that the economic context matters for intergenerational transmission. Not only government intervention weakens it, but it also fosters the influence of contacts with government, and with it the number of children of government cadres who become businessmen. This suggests that the current debate on the relative importance of different channels of intergenerational transmission needs to acknowledge that the contribution of each factor is likely to be highly contingent on context.

Second, we show in a novel context that disaggregating entrepreneurship into its different components of necessity and opportunity is a useful analytical tool: the importance of cadre parents and government intervention is circumscribed to incorporated businesses and it does not affect self-employment, which mostly captures necessity entrepreneurship in the context of China.

Third, we demonstrate that “crony capitalism” can vary greatly across regions within a country, thus contributing to the literature on modes of capitalism which has so far focused on cross-country variation. Relatedly, while there is an extant literature that emphasizes the importance of personal links to power in the conduct of business (Fisman 2001, Khwaja and Mian 2005, Faccio 2006), we are the first to note that these links systematically bias the characteristics of the entire set of business owners and therefore that these effects are not limited to very large enterprises. More generally, we have shown that institutional context is important enough to shape the entire set of people who engage in business. We hope that further research can dilucidate the welfare implications of this phenomenon.

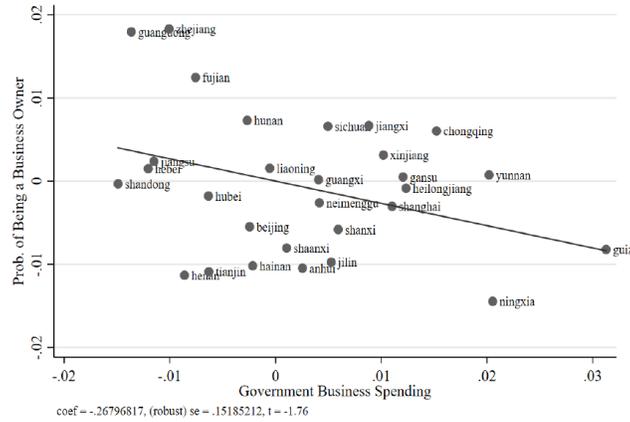
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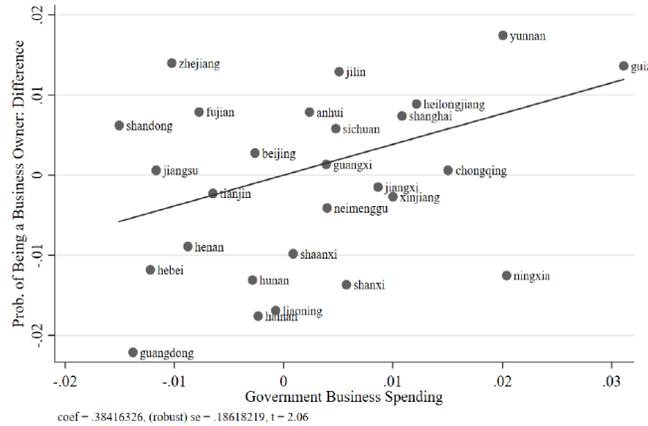
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Figure 1: Descriptive Patterns – Different Outcomes vs. Government Business Spending

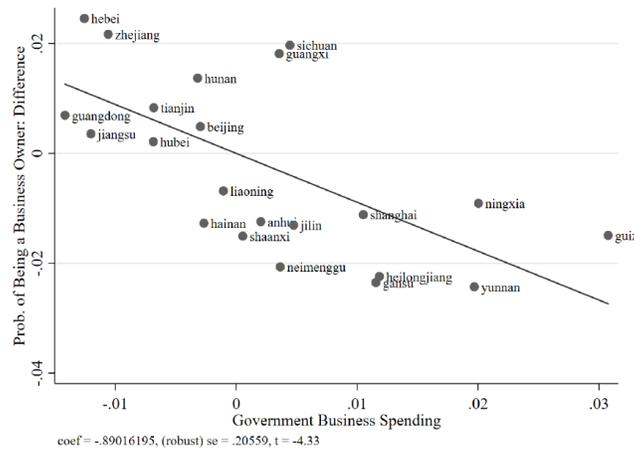
(a) Prob. Being a Business Owner



(b) Diff b/w Cadre Children and Others



(c) Diff b/w Entrepreneur Children and Others



Notes: Panel (a) shows that the share of business owners is lower in provinces with higher business spending. Panel (b) shows that the difference between cadre children and commoner children increases with government business spending. Panel (c) shows that the difference between entrepreneur children and commoner children increases with government business spending. Outliers are excluded in these two figures. The regressions are <sup>15</sup>weighted by the number of observations in each province.

Table 1: Summary Statistics

Variable	Mean	Standard Dev
A. CGSS 2005-2012, N=22,801		
Entrepreneur	0.129	0.335
Firm owner	0.022	0.146
Self-employed	0.107	0.310
Cadre parents	0.192	0.394
Entrepreneur parents	0.050	0.219
College	0.259	0.438
Female	0.504	0.5
Married	0.928	0.258
Ethnic Minorities	0.060	0.237
B. Provincial Characteristics 2005-2012		
Provincial government business-related spending over GDP	0.029	0.020
Provincial government other spending over GDP	0.151	0.067
C. Key Determinants in Career Success, from CGSS 2005, N=4,690		
Connection with powerful officials	0.248	0.432
Hard work	0.324	0.468
Luck	0.104	0.305
Ambition	0.348	0.476

*Notes:* This table presents the summary statistics for the main variables. CGSS covers both urban and rural households. We focus on the urban ones.

Table 2: Average Effect of Cadre Parents on the Prob. of Being a Business Owner

Dependent Var.	(1)	(2)	(3)
	Entrepreneur (business owner/self-employed)	<b>Business owner</b>	Self-employed
Cadre Parents	-0.003 (0.006)	0.006** (0.003)	-0.009* (0.005)
Entrepreneur Parents	0.079*** (0.014)	0.016*** (0.006)	0.063*** (0.013)
Province FE*Year FE	Y	Y	Y
Observations	22,801	22,801	22,801
R-squared	0.041	0.015	0.039

*Notes:* This table shows that those with cadre parents are more likely to become business owners but are less likely to be self-employed, indicating that it is useful to differ self-employment from business owners. Standard errors are clustered at the province-year level. Significance level: \* $p < 0.1$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$ .

Table 3: Multinomial Logit Estimates Across Occupations – Relative Risk Ratios by Parental Background

Dependent Var.	(1)	(2)
	Reference group: other jobs	
Being a government worker		
Cadre Parents	2.212*** (0.101)	2.027*** (0.098)
Entrepreneur Parents	0.984 (0.085)	0.980 (0.086)
Being a business owner		
Cadre Parents	1.628*** (0.187)	1.399*** (0.165)
Entrepreneur Parents	1.783*** (0.313)	1.564*** (0.266)
Province FE*Year FE	Y	Y
Individual. Char.		Y
Observations	22,801	22,801

*Notes:* The coefficients reported are relative risk ratios. They show that those with cadre parents have a higher propensity to obtain a job in government and becoming a business owner. In contrast, those with entrepreneur parents do not exhibit such higher propensity for a job in government. Take column 1 for example, the relative risk of working in government over other jobs (not a business owner) is 2.212 for cadres relative to non-cadres. Standard errors are clustered at the province-year level. Significance level: \* $p < 0.1$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$ .

Table 4: Interactive Effects of Cadre Parents and Government Business Spending

Dependent Var.	(1) Entrepreneur (business owner/self-employed)	(2) Self-employed	(3) <b>Business owner</b>	(4) <b>Business owner</b>	(5) <b>Business owner</b>
Cadre Parent * Business Spend.	0.277 (0.317)	0.066 (0.352)	0.211* (0.115)	0.250** (0.117)	0.249** (0.117)
Cadre Parent	-0.003 (0.006)	-0.009* (0.005)	0.006** (0.003)	0.003 (0.003)	0.003 (0.003)
Entrepreneur Parent * Business Spend.	0.535 (0.622)	0.926 (0.590)	-0.391* (0.208)	-0.373* (0.201)	-0.392* (0.202)
Entrepreneur Parent	0.079*** (0.014)	0.063*** (0.013)	0.016*** (0.006)	0.014** (0.006)	0.014** (0.006)
Cadre Parent * GDP Per Capita					-0.000 (0.001)
Entre. Parent * GDP Per Capita					-0.003 (0.002)
Province FE*Year FE	Y	Y	Y	Y	Y
Business Spend*Individual Characteristics				Y	Y
Individual Characteristics				Y	Y
Observations	22,801	22,801	22,801	22,801	22,801
R-squared	0.041	0.039	0.015	0.023	0.023

*Notes:* This table shows that the advantage in becoming a business owner (1) increases with government involvement in the economy for those with cadre parents and (2) decreases with government involvement for those with entrepreneur parents. Individual characteristics include: age, gender, marital status, ethnic minority status, and a dummy for college education. Standard errors are clustered at the province-year level. Significance level: \* $p < 0.1$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$ .

Table 5: Self-evaluations of the Key Determinants in Career Success

Dependent Var.	(1) Power	(2) Power	(3) Hard Work	(4) Hard Work	(5) Ambition	(6) Ambition	(7) Luck	(8) Luck
Business Owner	0.091** (0.040)	0.126*** (0.034)	0.072* (0.041)	0.054 (0.042)	0.010 (0.045)	0.002 (0.039)	-0.005 (0.018)	-0.017 (0.016)
BusinessOwner*Business Spending		5.428** (2.291)		-2.916 (3.330)		-1.217 (2.880)		-1.894 (1.130)
Province FE	Y	Y	Y	Y	Y	Y	Y	Y
Individual. Char.	Y	Y	Y	Y	Y	Y	Y	Y
Observations	4,690	4,690	4,690	4,690	4,690	4,690	4,690	4,690
R-squared	0.100	0.101	0.067	0.067	0.073	0.073	0.034	0.035

*Notes:* The dependent variable is a dummy variable if a respondent considers the factor listed in the first row as an “essential” determinant in career success. This table shows that business owners appreciate power more, especially in provinces with high business spending. The individual characteristics include gender, college education, ethnic minority status, marriage status, and age. Significance level: \* $p < 0.1$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$ .

**Online Appendix**  
**Jia, Lan and Padró i Miquel, Doing Business in China**

## **Contents**

<b>A Understanding Government Business Spending</b>	<b>A-2</b>
A.1 Defining Government Business Spending . . . . .	A-2
A.2 Business Spending and Firm Subsidy . . . . .	A-3
A.3 Business Spending pre-post the Fiscal Stimulus 2008 . . . . .	A-3
A.4 The Variation in Government Business Spending . . . . .	A-5
<b>B Robustness Checks</b>	<b>A-6</b>
B.1 Human Capital? Educated Parents×Business Spending . . . . .	A-6
B.2 More Placebo Tests . . . . .	A-6
B.3 Additional Evidence from the Stimulus in 2008 . . . . .	A-7
B.4 Excluding Migrants and Excluding Data in 05-07 . . . . .	A-9
B.5 Additional Evidence from the China Family Panel Studies (CFPS) . . . . .	A-9

# A Understanding Government Business Spending

## A.1 Defining Government Business Spending

We define business spending as spending on infrastructures and MCF (Manufacturing/Commerce/Finance). All the categories are from China Statistic Yearbooks. In 2007, there is only one broad category of MCF spending, which incorporates the related categories in 2005. In later years, the broad definition is divided into more categories again, although with different names. For each category, we refer to the documents from the Ministry of Finance for its definition and sub-categories to make sure our definition is consistent and comparable over years. Our main results are robust to excluding data in 2005 and 2007.

We summarize the categories by year in the following table:

Definition of Government Business Spending

Year	Business spending	Non-business spending
2005	Infrastructure Funds to support firms for technology innovation and reform Policy-related subsidies to firms Sea exploration and subsidies to FDI and joint-venture firms for land-use Liquidity funds Aid to undeveloped regions (fiscal transfer to promote economic development and infrastructure)	All other categories (related to public administration, defense, education, health, and social security)
2007	Transportation Manufacturing/Commerce/Finance-related spending (MCF spending)	All other categories (related to public administration, defense, education, health, and social security)
Later years	Transportation; Detailed MCF spending	The same above + Earthquake relief and reconstruction (shock in 2008)

## A.2 Business Spending and Firm Subsidy

Does government business spending reflect government involvement in business? As a check, we examine the correlation between our measure of government spending and subsidy received by private firms. Specifically, using data from the second National Economic Census (NEC), we find that a one standard deviation increase in provincial government business spending over GDP (0.02) is associated with a 0.6 percentage point increased probability of subsidy receipt (column (1) in the table below), a very large effect compared to the mean probability (1.3 percentage points). This relationship is robust to introducing firm-level controls (column (2)) and also true at the intensive margin (column (3)).

Correlations between Government Spending and Firm Subsidies in 2008

Subsidy	(1) 0/1	(2) 0/1	(3) ln(Sub), subsidy recipients
Business Spending	0.304** (0.148)	0.315** (0.150)	19.113** (6.958)
ln #Employee		0.004*** (0.001)	0.139*** (0.027)
ln Asset		0.002*** (0.000)	0.517*** (0.029)
GDP Per Capita		0.001** (0.001)	-0.139*** (0.033)
Industry FE	Y	Y	Y
Ownership FE		Y	Y
Observations	3,298,048	3,227,381	42,292
R-squared	0.098	0.102	0.345

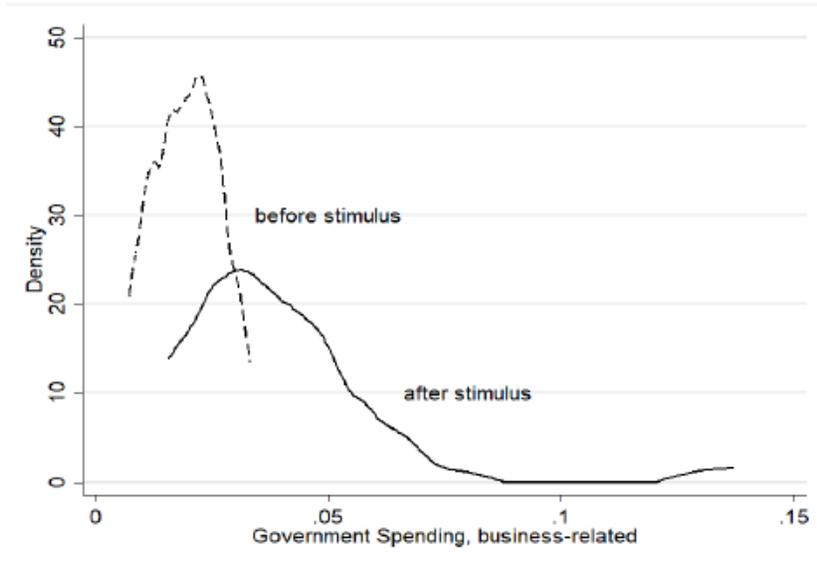
## A.3 Business Spending pre-post the Fiscal Stimulus 2008

In November 2008, as a response to the global financial crisis and the slow-down domestic economy, the Chinese central government announced a fiscal stimulus plan of 4 trillion RMB. Except for the expenditures used in the reconstruction works in the regions destroyed by the 8-magnitude Sichuan earthquake in 2008, 75% of the package went to business-related expenditure.<sup>1</sup> As shown in Panel (a) of the figure below, the average business-related spending was about 2.4 percent (of provincial GDP) prior to the stimulus package and increased to 4.8 percent post the stimulus package. In contrast, Panel (b) shows that the increase in the other fiscal expenditure was modest and statistically insignificant.

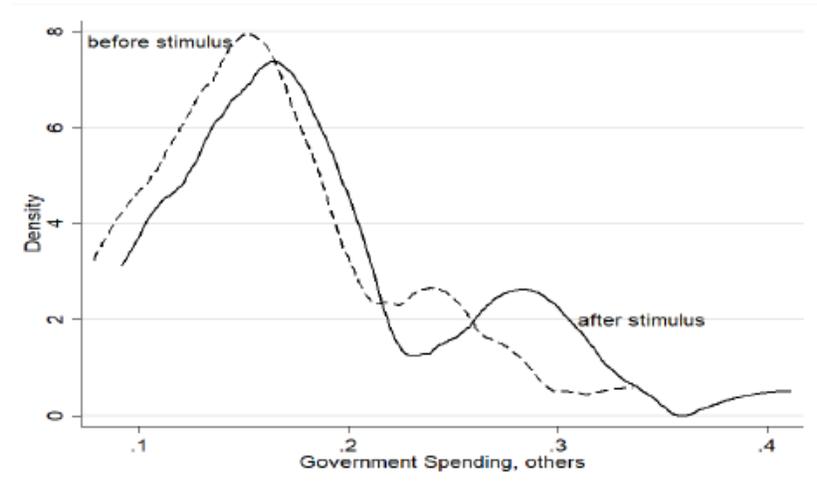
<sup>1</sup>For the breakdown of the stimulus package, announced by the National Development and Reform Commission, see: [http://www.eeo.com.cn/ens/finance\\_investment/2009/03/07/131626.shtml](http://www.eeo.com.cn/ens/finance_investment/2009/03/07/131626.shtml).

# Spending pre-post the Stimulus Package

(a) Business Spending



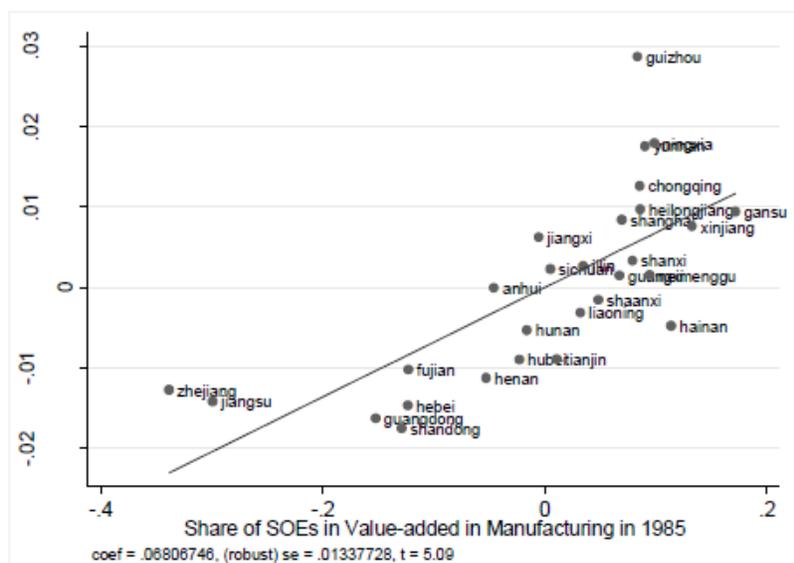
(b) Other Spending



## A.4 The Variation in Government Business Spending

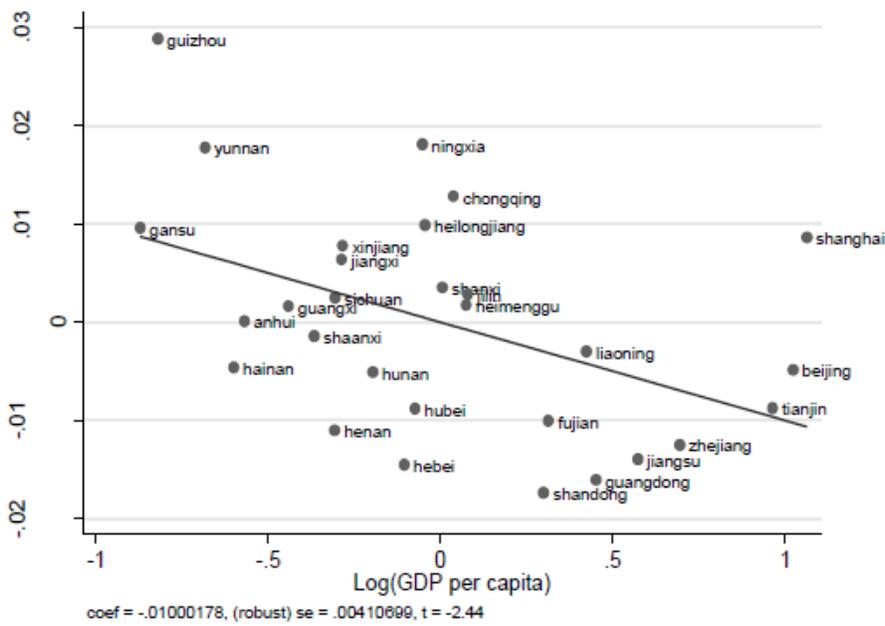
**Business Spending vs. SOEs Share** Another fact illustrating that business spending is a slow-moving provincial characteristics is that that 55% of the cross-provincial variation in government business spending in 2007 is explained by the share of State Owned Enterprises (SOEs) in manufacturing in 1985, presented in the next figure.

Business Spending vs. SOEs Share across Provinces,



**Business Spending vs. Economic Development** Government involvement in business is negatively correlated with GDP per capita. However, as shown in the figure below for the cross-province correlation between the average logged GDP per capita and average government business spending in our study periods. The R-squared is 0.22, implying that 22% of the variation in government business spending can be explained by regional development. As shown, provinces of similar development levels can have different degree of government involvement. For instance, our data confirms the difference in government involvement between Shanghai and Zhejiang mentioned in Huang (2008) where he focused their difference in earlier years.

## Business Spending vs. GDP per capita across Provinces,



## B Robustness Checks

### B.1 Human Capital? Educated Parents $\times$ Business Spending

We find that better-educated parents  $\times$  government business spending is not significantly correlated with children's business ownership. Considering that few of the parents have college education, we define better education as high school and above. As shown in column (1) in the next table, we do not find that the role of parental education changes with government business spending, while our main finding on cadre parents and entrepreneur parents remains similar.

Since parental education is likely to be a more pertinent proxy for human capital, this finding suggests that it is difficult to assume that the changing roles of cadre parents across provinces are due to the changing roles of human capital.

### B.2 More Placebo Tests

Our finding is specific to government business spending. As shown in column (2) of the next table, the interaction effect of parental background and other types of government spending is neither economically nor statistically significant.

## Placebo Tests

Dependent Var	(1) Business owner	(2) Business owner	(3) Gov worker	(4) Gov worker
High-school + Parent*Business Spend	0.016 (0.213)			
High-school + Parent	0.003 (0.003)			
Cadre Parent * Other Spending		0.041 (0.046)		
Entrepreneur Parent * Other Spend.		-0.099 (0.084)		
Cadre Parent * Business Spending	0.246* (0.140)			-0.065 (0.408)
Entrepreneur Parent * Business Spend.	-0.373* (0.204)			-0.729 (0.717)
Cadre Parent	0.002 (0.003)	0.006** (0.003)	0.144*** (0.009)	0.115*** (0.009)
Entrepreneur Parent	0.014** (0.006)	0.016*** (0.006)	-0.006 (0.012)	-0.006 (0.011)
Province FE*Year FE	Y	Y	Y	Y
Spending*Individual. Char.	Y	Y		Y
Observations	22,801	22,801	22,801	22,801
R-squared	0.023	0.015	0.057	0.141

Moreover, in columns (3)-(4) we show that the correlations between parental background and government jobs do not vary with government business spending (while having cadre parents helps children obtain jobs in government). Thus, our finding is also specific to the outcome of doing business.

Together with the finding on GPD per capita  $\times$  Business spending, these results show that our finding is very specific between parental background, ownership of an incorporated business and provincial fiscal expenditure on business matters.

### B.3 Additional Evidence from the Stimulus in 2008

Since provincial-level government business spending is slow-moving, the pre-stimulus government business spending is a good predictor of the post-stimulus spending. Specifically, if we regress the post-stimulus government business spending on pre-stimulus government spending, we obtain a coefficient of 1.869 (with a standard error of 0.173) and a  $R$ -squared of 0.82. Essentially, this national-level stimulus spending is proportional at provincial level, which provides us useful variation in government business spending. Thus, this policy shock provides us an opportunity to investigate the heterogeneous effect across provinces with the

different pre-stimulus level of government spending.

We divide the provinces into two groups by the median business spending in the benchmark year of 2005, and examine whether the same policy shock has different impacts across the two groups using a triple difference design as follows:

$$\begin{aligned}
business_{i,p,t} = & \beta_3 cadrepar_{i,p,t} \times HighProv_p \times post08_t + \beta_2 cadrepar_{i,p,t} \times HighProv_p \\
& + \beta_1 cadrepar_{i,p,t} \times post08_t + \beta_0 cadrepar_{i,p,t} \\
& + \theta_3 X_{i,p,t} \times HighProv_p \times post08_t + \theta_2 X_{i,p,t} \times HighProv_p \\
& + \theta_1 X_{i,p,t} \times post08_t + \theta_0 X_{i,p,t} + province\_year_{p,t} + \varepsilon_{i,p,t},
\end{aligned}$$

where  $post08_t$  is a dummy variable that is 1 for the three waves of the CGSS data in 2009, 2011 and 2012, 0 for the two waves in 2005 and 2007.  $HighProv_p$  indicates whether a province's business spending was above median in 2005. We also allow for a flexible effect of  $X_{i,p,t}$  by interacting it with  $post08_t$  and  $HighProv_p$ .

If our earlier hypothesis is correct, we expect to see a positive  $\beta_3$  because a surge in such fiscal spending encourages people from a cadre family to start a business more in provinces with a higher benchmark spending. This is indeed the case (presented in next table).

#### Results from the Stimulus Shock

	(1)	(2)	(3)	(4)	(5)
				Age<=35	Age>35
Cadre Par. * High Benchmark*After 2008	0.019*	0.019*	0.021*	0.059**	0.009
	(0.011)	(0.012)	(0.012)	(0.03)	(0.012)
Cadre Parent	0.004	0.001	0.001	0.033	-0.011*
	(0.008)	(0.008)	(0.008)	(0.021)	(0.007)
Cadre Par. * High Benchmark	-0.008	-0.009	-0.009	-0.033	-0.000
	(0.010)	(0.010)	(0.010)	(0.027)	(0.011)
Cadre Par. * After 2008	-0.002	-0.003	-0.002	-0.054**	0.015*
	(0.009)	(0.009)	(0.009)	(0.023)	(0.008)
Province FE*Year FE	Y	Y	Y	Y	Y
Individual. Char.		Y	Y	Y	Y
Individual. Char. * High Benchmark*After 2008 (including all pairwise interactions)			Y	Y	Y
Observations	22,801	22,801	22,801	5,046	17,755
R-squared	0.014	0.022	0.023	0.046	0.025

Compared with the provinces with lower benchmark spending, the effect of cadre parents on the probability of being a business owner increases by 1.9 percentage point more after 2008 in the provinces with higher benchmark spending, close to the mean probability

(0.022). Furthermore, this effect is driven by the younger cohort (younger than 35 years old) who are more likely to take advantage of this huge but only one-time shock to change their career. For them, the effect on the probability of being a business owner increases by 5.9 percentage points, almost three times higher than the mean probability of 2.2 percentage points.

Thus, the over-time variation in government spending exhibits the same pattern as the cross-sectional variation. Since the variation we are exploring stems from a national shock which is likely to be exogenous to any specific provincial characteristics, these results provide further support for our main finding.

## B.4 Excluding Migrants and Excluding Data in 05-07

Our main finding is robust excluding migrants (columns (1)-(2) of the table below). It is also robust to using data during 2009-2012, where the business spending categories remain exactly the same and we can control for county fixed effects (column (3)).

Excluding Migrants and Excluding Data in 05-07

	(1)	(2)	(3)
Cadre Parent * Business Spend.	0.245** (0.112)	0.289** (0.111)	0.301*** (0.110)
Cadre Parent	0.002 (0.003)	0.002 (0.003)	0.002 (0.003)
Province FE*Year FE	Y	Y	Y
Individual Characteristics	Y	Y	Y
Business Spending*Individual. Char.		Y	Y
County FF, 09-12 only			Y
Observations	22,086	22,086	14,505
R-squared	0.022	0.022	0.033

## B.5 Additional Evidence from the China Family Panel Studies (CFPS)

Can our main result be replicated using other surveys? Here, we employ data from the 2012 wave of the CFPS. The CFPS is a nationally representative, biennial general social survey, launched and conducted in 2010 by the Institute of Social Science Survey (ISSS) of Peking University. It is a panel data over individuals or households. Four waves of the data (2010, 2012, 2014, 2016) have been released to public use. This table uses the individual adult survey in 2012, the first wave that records the occupation of the respondent's parents when

the respondent was 14 years old, which is the same as in the CGSS. As in the CGSS, the analysis is restricted to urban respondents in 25 provinces. Since the CFPS is panel data over individuals, the parents' past occupation is fixed across waves, we only employ one wave of the data to corroborate our finding using multiple-wave CGSS data.

Results from CFPS – Outcome: Business Owner/Self-employed

	(1)	(2)	(3)
Cadre Parent * Business Spending	1.594*	1.746**	1.606**
	(0.915)	(0.787)	(0.733)
Cadre Parent	-0.016	-0.018	-0.018
	(0.016)	(0.015)	(0.015)
Province FE	Y		
County FE		Y	Y
Business Spending*Individual. Char.			Y
Individual Characteristics			Y
Observations	6,222	6,222	6,222
R-squared	0.025	0.071	0.0876

Different from CGSS, however, we cannot separate business owners and self-employed using CFPS. Hence, we look at how the probability of becoming an entrepreneur varies by parental background and local context. Again, as shown in the next table, the advantage of having a cadre parent in doing business is stronger in provinces with a higher share of business-related fiscal spending in GDP.

The estimated magnitude is close to our main results from the CGSS data. In our main results, one standard deviation increase in business spending is associated with 0.5 percentage point increase in the probability that children of cadres are business owners, or 25 percent increase in the mean probability of being business owners. Here, it is associated with 30 percent increase in the mean probability of being entrepreneurs.