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Finance Working Paper N° 536/2017
October 2017

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ECGI Working Paper Series in Finance

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Abstract

We show that corruption affects negatively the performance of small entrepreneurial firms, which compete with corrupted industry peers. We exploit the Chinese anti-corruption campaign to establish causality and identify the channels through which corruption causes negative externalities. Small firms have lower sales growth in industries with high corruption, arguably because demand is diverted to the largest firms in their industries, which spend more in corrupting officials. Small firms also have higher financing costs in industries with high corruption and therefore invest less. Furthermore, corruption decreases the efficiency of labor and capital allocation and deters firm entry.

Keywords: Corruption, corporate governance, capital and labor allocation, China

JEL Classifications: D22, D62, G30, L20, O12, P26

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Abstract

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Firms around the world attempt to obtain political favors, such as lenient taxation, relaxed regulatory oversight, and generous financing, by hiring politicians to their boards and other posts, through more or less legal lobbying practices, providing financial support to alternative political factions, or paying bribes. A number of papers have shown that these behaviors benefit firm shareholders in a variety of countries (see, for instance, Fisman, 2001; Faccio, 2006; Amore and Bennedsen, 2013; Cingano and Pinotti, 2013; Borisov, Goldman and Gupta, 2016; Zeume, 2017).

In this paper, we ask whether firms' behaviors aiming to obtain political favors, which can be largely assimilated to corruption, cause negative externalities and inefficiencies that go above and beyond the benefits that they yield to the corrupting firms. Our research question is motivated by influential research debating the costs and benefits of corruption. A strand of the literature highlights that corruption may be efficient not only because it allows firms to avoid bureaucratic delays, but also because government employees who are allowed to levy bribes work harder (Leff, 1964; Huntington, 1968). From the point of view of these theories, corruption would constitute oil in the wheels, especially for highly regulated economies.

However, corruption may hamper an efficient allocation of resources (Shleifer and Vishny, 1993). This may explain why, at the macroeconomic level, a country's growth rate is negatively correlated with the level of corruption (Mauro, 1995). Hence, it seems plausible that corruption may be sand in the wheels for an economy because it causes negative externalities and inefficiencies. However, evidence on the sources of these externalities and inefficiencies is scarce.

We propose a mechanism through which corruption may stifle economic growth. We conjecture that by increasing the rents of a few incumbent firms, corruption may stifle entrepreneurial activity and decrease the ability of small entrepreneurial firms to grow and compete with the incumbents. Such a mechanism may have potentially large adverse consequences on an economy's performance because small entrepreneurial firms contribute disproportionately to major innovations and are therefore a key engine of economic growth (Akcigit and Kerr, 2016).

We explore the effects of competing with highly corrupted incumbents on small entrepreneurial firms' performance and entry patterns using a large-scale proprietary dataset from China. China provides a unique setting to investigate the effects of corruption on entrepreneurial activity for several reasons.

First, small entrepreneurial firms are particularly important in China. They employ the overwhelming majority of non-agricultural workers and generate the largest increments in employment (Allen, Qian, and Qian, 2005).

Second, we are able to access comprehensive information on a sample of public and private firms, which is largely representative of the distribution of firms in the Chinese economy across geographic regions, industries, and size classes. This allows our analysis to have direct implications on the effects of corruption on the economy's allocational efficiency (rather than exploring the effects on a selected group of firms in the economy as most of previous literature).

Third, in China, it is possible to observe firms' efforts to obtain political favors. An item on all Chinese firms' profit and loss accounts, the entertainment expenses (henceforth, EE), is highly correlated with the grease money firms spend to get better government services and the protection money firms spend to lower tax payments (Cai, Fang and Xu, 2009). EE are also often discussed by news media as associated with corruption and have been widely used in existing literature to measure potential corruption (e.g., Griffin, Liu, and Shu, 2016; Lin, Morck, Yeung and Zhao, 2016). We can thus use the average EE of the largest companies in an industry to measure the extent of corruption that entrepreneurial firms are likely to face in the industry in which they operate. We also explore the robustness of our results to the use of more conventional proxies for political connections.

Finally, China experienced an exogenous shock to the effectiveness of corruption. The Xi Jinping's administration launched a major anti-corruption campaign in 2012. This anti-corruption drive has been considered the most far-reaching and lasting than any previous attempts. By increasing the probability that government officials are investigated and convicted for corruption, the campaign should have made corruption efforts, as measured by EE, less effective. Largely unanticipated by market participants, the launch of the anti-corruption campaign was exogenous to firm performance and corporate policies.

Thus, using the anti-corruption campaign as an exogenous negative shock to the extent and effectiveness of corruption, we can test whether small firms in industries with large firms' higher EE have worse performance and whether their performance improves after the start of the anti-corruption campaign. We can also test whether the anti-corruption campaign reduced demand and created frictions, or if instead it resulted in a more efficient allocation of resources between firms in an industry.

Our empirical strategy relies on two identifying assumptions. First, the EE of large firms in an industry have to be independent from small firms' actions. We show that in most industries, the aggregate EE of small firms are negligible in comparison to the aggregate EE of the largest companies, making it implausible that the latter respond to small firms' behavior in corrupting officials. Not only we provide empirical evidence in favor of this identifying assumption, but we also note that if large firms were to increase their efforts of obtaining special treatment in response to positive shocks affecting small firms and increasing the competitive pressure, our results would be downward biased.

Second, since we exploit the anti-corruption campaign as an exogenous shock to corruption, which should have affected disproportionately entrepreneurial firms in ex-ante high EE industries, we need that entrepreneurial firms in industries with high EE do not experience improvements in performance already before the start of the anti-corruption campaign. Put differently, as in any difference-in-difference setting, there should be no pre-existing differential trends in performance for firms that are subject to different extents of treatment. We show that this identifying assumption also appears to be satisfied.

We find that corruption has significant negative effects on the performance of entrepreneurial firms. Small firms are less profitable and have lower total factor productivity when they compete with large industry peers spending more on EE. This appears to be the case because, under these circumstances, small firms invest less, have lower growth of sales, and face higher financing costs than the median firm in the industry.

All results are obtained by controlling for firm-level EE and including interactions of province and time effects. Thus, our findings cannot be interpreted as being driven by provincial shocks. Furthermore, we show that large firms' EE are unlikely to capture other large firms' characteristics, such as size and leverage, which may in turn be correlated with small firms' performance.

Importantly, in all our tests, the negative spillover effect of large firms' EE is muted after the start of the anti-corruption campaign. This indicates that a negative shock to the effectiveness of corruption benefits entrepreneurial activity.

To further probe that industries in which large firms spend more on EE are no different from other industries, we measure EE within a firm's province. In these robustness tests, we are able to absorb industry level shocks by including interactions of industry and time fixed effects. It is therefore comforting that small firms in provinces in which large firms have higher EE have weaker performance.

Finally, we provide evidence that large firms' corruption efforts hamper an efficient allocation of resources. Estimating a model based on Bai, Carvalho, and Phillips (2016), we find that labor (capital) is less likely to be allocated to firms with high marginal productivity of labor (capital) if these firms operate in high EE industries. Also in this case, the allocation of capital and labor improves after the start of the anti-corruption campaign.

Corruption also appears to have an effect on the geographical distribution of entrepreneurial activity. Not surprisingly, since corruption lowers their profits, the proportion of young firms is lower if large firms in the same province and industry have high average EE during the previous year. This is the case not only for young firms in general, but also for young firms with high productivity.

Overall, our findings highlight the negative spillover effects of corruption and help explain why corruption is negatively correlated with country growth.

This paper belongs to a growing literature studying the effects of corruption and political connections. Most papers document a positive effect of political connections and firms' spending aiming to obtain political favors, such as campaign contributions, lobbying expenses and bribes, on firm value and operating performance (Faccio, 2006; Amore and Bennedsen, 2013; Borisov, Goldman and Gupta, 2016; Zeume, 2017). Others have shown that corrupt economic environments are associated with weaker firm performance and growth (Fisman and Svensson, 2007; Dass, Nanda and Xiao, 2016) and firms' attempts to shield their assets (Smith, 2016). A strand of this literature explores the effect of corruption and political connections among Chinese listed companies. Calomiris, Fisman and Wang (2010) show that political connections established through government ownership stakes benefit Chinese listed companies, confirming that political connections add value also in China. However, Fan, Wong and Zhang (2007) find that IPO firms with politically connected CEOs underperform both in terms of returns and operating performance.

We focus on the externalities of political connections and corruption, an issue that has been largely neglected in existing literature. A notable exception is Cingano and Pinotti (2013) who show that political connections reduce government sales for other non-connected firms. To the best of our knowledge, we are the first to focus on the negative effects of political connections on entrepreneurial activity and entry.

A few recent papers explore the effects of the 2012 anti-corruption campaign. Griffin, Liu, and Shu (2016) show that the most corrupt firms were indeed targeted in the anti-corruption campaign. Lin, Morck, Yeung and Zhao (2016) and Ding, Fang Lin and Shin (2017) perform event studies and show that politically connected firms' valuations drop in anticipation of future enforcement. While these studies highlight cross-sectional differences in announcement returns across listed companies, they cannot distinguish whether differences in announcement returns are due to differences in the expected probability of detection of corporate malfeasance or on changes in allocational efficiency. Not only we can directly explore the spillover effects of corruption, but we also document for the first time the effects of the anti-corruption reform on unlisted companies, which are the vast majority of firms in China.

The rest of the paper is organized as follows. Section 1 discusses the institutional background. Section 2 introduces the methodology and Section 3 describes the data. Section 4 presents the empirical results. Section 5 explores whether corruption may nevertheless be efficient. Section 6 concludes. Variable definitions are in Appendix A.

1. Institutional Background

1.1. Economic Growth and Corruption in China

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. However, economic growth in China has been accompanied by widespread corruption.

Thanks to the extensive decentralization of administrative power, local party chiefs can allocate capital, award large contracts, and determine land use. Local party chiefs also have strong incentives to pick a few large firms that become local champions to further their political careers. This way of allocating resources and contracts has given incentives to private businesses and state owned enterprises (SOEs) to deploy large amounts of resources in securing favorable treatment and establishing close relationships with government officials. Firms appoint CEOs and directors who are former government officials to obtain direct connections to the political power. Firms also spend in lavish banqueting, private club memberships, and expensive gifts, consisting of European luxury brands, jewelry, and artwork, to attract the favors of government officials. There exists ample evidence that these behaviors and the political connections they help establishing are associated with benefits for firms, including lower taxes, subsidies, preferential access to contracts and to financing (Li, Meng, Wang and Zhou, 2008; Cai, Fang and Xu, 2009).

1.2 The Anti-Corruption Campaign

President Xi Jinping's administration viewed corruption as a threat to the Communist Party's survival. For this reason, on November 8th, 2012, only 19 days into the new administration, President Xi Jinping launched an anti-corruption campaign at the 18th National Congress of the Communist Party of China (CPC). Following the launch of the campaign, on December 4th, the Political Bureau of the Central Committee of the CPC formulated an eight-point policy document to cut corruption, which specified concrete rules. Even more detailed rules were then specified by central and provincial governments. The CPC also launched a website in which whistleblowers could report violations of the policy. All these steps taken by central and local governments ultimately demonstrated the government resolution.

Xi's anti-corruption drive has been considered the most far-reaching and lasting than any previous attempts. While some proxies for corporate misbehavior, not necessarily related to corruption, such as earnings management, did not decrease (Griffin, Liu and Shu, 2016), there is plenty of evidence that the effects of the campaign were credible and persistent.

The initial announcement was followed by a number of other announcements, which have been widely studied. Not only firms with high entertainment and travel expenses (ETC), a common proxy for corruption efforts, had negative abnormal returns on the day of the announcement of the campaign on November 8th, 2012 (Lin, Morck, Yeung and Zhao 2016), but politically connected firms experienced similarly negative effects in May 2013, when the actual inspections of provincial governments were announced (Ding, Fang, Lin and Shi, 2017). This indicates that market participants continued to consider the anti-corruption drive as credible. The effectiveness of the campaign is also demonstrated by the fact that firms decreased their ETC expenses (Griffin, Liu and Shu, 2016) and that Chinese imports of luxury goods, typically used as gifts to government officials, dropped (Qian and Wen, 2015).

As a result of the campaign, in 2013 alone, nearly 200,000 officials incurred sanctions for corruption or abuse of power. Since the risk of being prosecuted increased substantially, presumably the campaign decreased how effectively firms with high EE obtained political favors.

Given its sudden and swift announcement, the anti-corruption campaign came as a surprise event, largely exogenous to firms' policies and performance. Previous administrations had typically announced policy changes roughly one year after their installation. The new administration of President Xi Jinping in turn had been formed at the end of a fierce power struggle within the CPC, which had left large uncertainty on whether an anti-corruption faction of the party would have prevailed. The swift policy change was not driven by the demands of small entrepreneurial firms, but was rather an attempt of preserving the legitimacy of the Communist Party.

Overall, the anti-corruption campaign increased the expected punishment associated with corruption, thus decreasing officials' willingness to concede political favors. To design our empirical analysis, we can thus exploit the anti-corruption campaign as a negative shock to the effectiveness of corruption, which should have benefitted small entrepreneurial firms in ex-ante more corrupt industries to a larger extent.

Importantly, as effectively summarized in a New York Times' (2017) review of Xi Jinping's track record, there were no other major policy reforms that may have affected firms differentially. In particular, Xi's administration continued to favor large SOEs and has been ineffective in tackling problems related to their inefficiencies. Thus, there were no changes in industrial policies that may have affected our findings or account for cross-sectional differences in the performance of small firms across industries in which large firms had devoted differential efforts to gain political favors.

In what follows, we design a test in the spirit of a difference-in-difference methodology to evaluate the negative externalities of corruption.

2. Methodology

We conjecture that the larger the EE that a company can afford, often based on its sheer size, the stronger the personal ties that it can establish with government officials and more significant the privileges it can obtain in terms of access to government services, financing, and contractual relationships. Therefore, we expect that higher EE by the large firms in an industry should hamper the performance of entrepreneurial firms in comparison that that of their larger peers.

Our approach for identifying the negative externalities of corruption on entrepreneurial firms relies on two types of tests. First, controlling for a small firm's own EE, we explore how competing in the same industry as large firms that invest in corruption or are politically connected affects the firm's performance. While these tests are potentially subject to the criticism that high EE industries are different, we show that the EE of large firms in an industry are unlikely to be affected by small firms' EE and industry shocks. Large firms' EE can therefore be considered exogenous to small firms' performance and policies. We further address these concerns by performing an array of robustness tests, which we introduce in the following sections. In particular, we show that our results are robust when we exploit between-province corruption and absorb industry shocks using interactions of industry and year fixed effects.

Second, we exploit the anti-corruption campaign as a plausibly exogenous and unexpected shock to corruption. If our conjecture is valid, this negative shock to the extent and effectiveness of corruption should have benefitted small firms in industries with large firms' ex-ante higher corruption and stronger political connections.

In the second part of the empirical analysis, we evaluate the welfare effects of corruption by examining how it affects capital and labor allocation. A more corrupt economic environment may improve the allocation of resources if special treatment is directed to the most efficient firms; however, if the firms obtaining special treatment are not as efficient as other firms, corruption could hamper an efficient allocation of resources and ultimately result in lower growth.

Our empirical analysis aims to evaluate these mechanisms. Below we discuss in detail the empirical tests we perform.

2.1 Baseline Regression Framework

Most of our tests explore how various measures of entrepreneurial firms' performance are affected by the average EE to sales ratio of the large firms in their industry at year $t-1$. We define large firms as firms in the top quartile of the sample distribution in a year for total assets. We control throughout the analysis for entrepreneurial firm f's own entertainment expenses to sales ratio, $EE_{f,i,p,t-1}$, where i refers to firm f's industry and p to its province. Our variable of interest is the average EE to sale ratio of large firms in the same industry of firm f, $\overline{EE}_{i,t-1}^{large}$. We estimate the following model:

$$y_{f,i,p,t} = \alpha\overline{EE}_{i,t-1}^{large} + \beta EE_{f,i,p,t-1} + \boldsymbol{\gamma X_{f,t-1}} + \vartheta_{p,t} + \varepsilon_{f,i,p,t},$$

where $y_{f,i,p,t}$ is a measure of performance of firm f belonging to industry i and based in province p during year t. Since we are interested in testing whether $\overline{EE}_{i,t-1}^{large}$ affects negatively the performance of small firms in comparison to other firms in the industry, as we explain in more detail later, we define $y_{f,i,p,t}$ to capture how small firm f fares in comparison to the median firm in the industry at time t.

We expect $\alpha < 0$ if corruption causes negative externalities on entrepreneurial firms in the same industry. Throughout the analysis, we control for a vector of time-varying firm characteristics, $\boldsymbol{X_{f,t-1}}$, industry fixed effects, and time fixed effects, which, depending on the specifications, we allow to vary across provinces ($\vartheta_{p,t}$). To the extent that our results are robust to the inclusion of interactions of province and time fixed effects, a negative effect of $\overline{EE}_{i,p,t-1}^{large}$ cannot be interpreted to spuriously depend on provincial shocks.

In the following sections, we show that $\overline{EE}_{i,p,t-1}^{large}$ are unlikely to be jointly determined with the EE of the small firms in our estimation sample, as the EE of the latter are small. Using a subsample of relatively larger firms, we also provide evidence that this effect, if anything, would bias our estimates downwards.

A possible concern is that large firms have larger EE in industries that have other uncontrolled characteristics, which are negatively associated with entrepreneurial firms' performance. This could lead to a negative correlation between entrepreneurial firms' performance and $\overline{EE}_{i,p,t-1}^{large}$ even in the absence of a negative spillover effect. To evaluate the merit of this interpretation, we control for a number of characteristics of large firms in the same industry as firm f.

In addition, we consider the EE of large firms headquartered in the same province as firm f. Firms in the same province as firm f are likely to compete for services and funding even when they are not competitors in the product markets. They may thus generate a negative externality for small entrepreneurial firms as large firms in the same industry. In these specifications, we can control for interaction of industry and year effects. Therefore, a negative effect of the EE of large firms in the same province as firm f could not be interpreted as driven by industry shocks. The stability of the effects across these alternative specifications would imply that industry and province shocks do not drive our findings.

2.2 The Anti-Corruption Campaign as a Negative Shock to Corruption

To provide further evidence in favor of the negative spillover effect of large firms' average EE to sale ratio on small firms' performance, we exploit the exogenous shock created by the anti-corruption campaign. Since the anti-corruption campaign should have decreased the effectiveness of EE in corrupting government officials, we expect that any negative spillover of large firms' EE on entrepreneurial firms' performance should have decreased after 2012, when the anti-corruption campaign started.

Entrepreneurial firms in industries in which large firms have higher EE should be more exposed to the anti-corruption campaign. We thus exploit predetermined variation in the expected intensity of the treatment (the anti-corruption campaign) to test this implication. We augment our empirical model by allowing the effect of $\overline{EE}_{i,p,t-1}^{large}$ to differ after 2012:

$$y_{f,i,p,t} = \alpha_1 \overline{EE}_{i,t-1}^{large} + \alpha_2 AntiCorruption_t \times \overline{EE}_{i,t-1}^{large} + \beta EE_{f,i,p,t-1} + \boldsymbol{\gamma X_{f,t-1}} + \vartheta_{p,t} + \varepsilon_{f,i,p,t},$$

where $AntiCorruption_t$ is a dummy variable that takes value one starting from 2013 and zero otherwise. We expect $\alpha_1 < 0$ and $\alpha_2 > 0$ if the anti-corruption campaign limits the negative spillovers of large firms' EE.

The anti-corruption campaign should have affected officials' willingness to concede political favors simultaneously in all Chinese provinces. While the timing of enforcement may have differed across regions, the valuations of politically connected firms in different regions have been shown to drop synchronously after different announcements, in anticipation of future crackdowns, independently from the particular provinces that were singled out as subject of the audits at different points in time (Ding, Fang, Lin, and Shi, 2017). This suggests that the effectiveness of political connections may have decreased uniformly across China.

For this reason, in our baseline specifications, the anti-corruption campaign does not take into account differences in enforcement across provinces. Nevertheless, to account for the possibility of differential enforcement across geographical areas, we exploit a province level index of the intensity of the anti-corruption campaign, described in Subsection 3.2, and show that our results are robust.

2.3 Allocational Efficiency

Hsieh and Klenow (2009) propose a methodology to evaluate to what extent resources are misallocated between firms. In their framework, large differences in the marginal productivity of the factors of production between firms indicate that less productive firms are able to employ more resources and that resources are therefore not allocated efficiently.

Instead of directly comparing the level of the marginal productivity of capital and labor across firms, we test a dynamic implication of the theory, which allows for slower adjustment of the scale of production to differences in productivity. We explore the effect of $\overline{EE}_{i,t-1}^{large}$ on both labor allocation and capital allocation following the methodology of Bai, Carvalho, and Phillips (2015). We test whether the change in firm f's share of labor input (capital input) between year t and $t-1$, $\Delta l_{f,i,p,t}$ ($\Delta k_{f,i,p,t}$), is positively related to the marginal productivity of labor (capital) input of firm f at time $t-1$, $MPL_{f,i,p,t-1}$ ($MPK_{f,i,p,t-1}$), and whether $\overline{EE}_{i,t-1}^{large}$ decreases this correlation. We further test whether the effect of $\overline{EE}_{i,t-1}^{large}$ is muted after the starting of the anti-corruption campaign.

We estimate the following models considering as inputs a firm's employment share and its share of fixed assets, respectively:

$$\Delta l_{f,i,p,t} = \beta_1 MPL_{f,i,p,t-1} + \beta_2 MPL_{f,i,p,t-1} \times \overline{EE}_{i,t-1}^{large} + \beta_3 MPL_{f,i,p,t-1} \times \overline{EE}_{i,p,t-1}^{large} \times AntiCorruption_t + \boldsymbol{\gamma X_{f,t-1}} + \vartheta_{p,t} + \varepsilon_{f,i,p,t}.$$

$$\Delta k_{f,i,p,t} = \beta_1 MPK_{f,i,p,t-1} + \beta_2 MPK_{f,i,p,t-1} \times \overline{EE}_{i,t-1}^{large} + \beta_3 MPK_{f,i,p,t-1} \times \overline{EE}_{i,p,t-1}^{large} \times AntiCorruption_t + \boldsymbol{\gamma X_{f,t-1}} + \vartheta_{p,t} + \varepsilon_{f,i,p,t}.$$

As in the previous specifications, we control for a vector of firm time-varying characteristics, $\boldsymbol{X_{f,t-1}}$, which may affect performance, interactions of province and time fixed effects ($\vartheta_{p,t}$) as well as firm fixed effects, which allow for systematic differences in the rate of growth of the factors of production across firms.

We expect $\beta_1 > 0$ if more productive firms increase the amounts of factors of production they employ. If corruption decreases allocational efficiency, we expect that $\beta_2 < 0$. Furthermore, we expect $\beta_3 > 0$ if the anti-corruption campaign decreases the effect of corruption.

3. Data Sources and Sample Construction

3.1 Firm-level Data

Our main data source is the Annual Tax Survey (ATS) Database, an annual survey administered by the Ministry of Finance and the State Administration of Taxation of China. The ATS was started in 2004 and is implemented by regional tax authorities. The survey is conducted using a uniform, comprehensive survey system. Survey answers are collected and subsequently verified by local tax authorities. Information is further verified using technical algorithms to minimize potential reporting errors. A special task force of the local tax authorities also audits survey respondents.

Firms have to provide detailed reports on their financial statements, tax status, operations, founding year, industry, and ownership characteristics. The database includes the unique tax ID of each firm. Since the first six digits of Chinese tax IDs refer to the city where a firm is headquartered, we can trace firms' locations as well as their financial information and operating performance.

The survey covers two types of firms in manufacturing, agriculture, construction and service sectors: the "key surveyed enterprises", which are relatively large local firms, and a sample of entrepreneurial firms drawn from the tax collection and management system at the State Administration of Taxation with the goal of covering a representative sample of the local firm population.[1]

Our sample period goes from 2005 to 2014 and includes a total of 2,805,331 firm-year observations. We exclude firms in the financial industry, nonprofit organizations and social groups (2,210 observations). We remove 866,481 firm-year observations with missing information on firm location or missing values for the dependent and independent variables used in the analysis. Our final sample includes 1,936,640 firm-year observations, 1,821,508 of which refer to private firms. The sample consists of 502,455 unique firms operating in 47 industries and located in 31 provinces. Appendices B and C show the distribution of sample firms across industries and provinces.

Since we aim to evaluate the negative spillover effects of corruption on small firms, most of our tests focus on firms with fewer than 30 employees. The small firm sample includes a total of 349,508 firm-year observations, consisting of 157,618 unique firms. Table 1 shows that small

[1] All firms in our sample are stand-alone companies as, differently from other Asian countries, business groups are not prevalent in China. Thus, it is implausible that small unrelated firms pay bribes for larger private or public companies.

firms with fewer than 30 employees differ along a wide range of characteristics from the large firms in the sample, defined as firms with assets in the top quartile.

An important variable, capturing a firm's effort to corrupt officials, is the ratio of entertainment expenses to sales. Cai, Fang and Xu (2009) show that ETC are highly correlated with the grease money firms spend to obtain political favors and to pay lower taxes in firms' surveys. From the Selling, General and Administrative expenses (S&GA) of the income statements in the ATS database, we observe firms' entertainment expenses (EE). Since travel expenses may include legitimate business travel, EE are arguably more correlated with any money spent to obtain political favors and to corrupt officials. EE can also be inferred from the firms' tax returns. Therefore, if EE are unavailable from the income statements, but can be inferred from the tax returns, we use tax returns information.

Our variable of interest, EE, is computed as a firm's entertainment expenses divided by sales, multiplied by 100. This variable is likely to include expenses for outright illegal activities, such as bribes, as well as borderline activities. The latter would encompass in advanced democracies (more or less corrupt) lobbying and campaign contributions, which may be donations and other investments favoring the careers of some local politicians in the Chinese context.

In Table 1 Panel A, the EE to sale ratio of small firms is just slightly smaller than for large firms. However, as is evident from Panel B, in absolute, large firms spend more on EE and may be more successful in obtaining political favors and cementing their political connections. Importantly, as shown in Table 2, a firm's EE to sale ratio appears to be highly correlated over time. The majority of firms that are in the top (bottom) quintile in one year remain in the same quintile the following year. This is consistent with evidence that political contributions and lobbying efforts tend to persist over time (e.g., Yu and Yu 2011).

We proxy for the extent of corruption faced by small firms in an industry using the average EE to sales of firms with assets in the top quartile in that industry, to which we refer as EE(Industry). In the median industry, the total EE of small firms are only 3.38% of the total EE of large firms, making it unlikely that large firms increase their EE in response to small firms' actions. This conclusion is further supported by the evidence in Table 3. EE(Industry) appears to be unrelated to the industry's profitability and sales growth as well as to the rate of entry of small firms and small firms' profitability after controlling for industry fixed effects. This makes it unlikely that large firms respond to small firms' actions.

In what follows, we present more evidence suggesting that EE(Industry) is likely to be exogenous to the small firms in our sample. We also evaluate the robustness of our results to the use of an alternative proxy for political connections, defined as the proportion of listed companies in an industry with a CEO that was a previous government official.

3.2 The Anti-Corruption Movement and Provincial Level Enforcement

While the inspections spurred by the anti-corruption campaign occurred at different time in different provinces, the announcement of the campaign has been shown to have a nationwide effect, which does not depend on the particular time of enforcement (Ding, Fang, Lin and Shi, 2017). This suggests that the increase in the probability of enforcement decreased the effectiveness of corruption upon the announcement of the reform.

Nevertheless, to capture that the intensity of the anti-corruption campaign may have varied across provinces, we construct a provincial level index of enforcement. We start by manually collecting information on investigated officials from the websites of the Central

Commission for Discipline Inspections (CCDI) and its local agencies. From the end of 2012 to 2014, the CCDI identifies 862 officials subject to corruption investigations, while its local agencies report 1,429 individuals.

We cross-verify and manually remove any instances in which the same individual is reported both by CCDI and its local agencies or is investigated in multiple cases. The final sample includes a total of 2,235 individuals involved in investigations. We further remove 916 cases that were investigated prior to the official launch of the anti-corruption campaign. Therefore, the sample of investigated ex-officials based on the CCDI websites contains 1,319 individuals.

The CCDI's website neglects a large number of senior corporate executives of the state-owned enterprises investigated for corruption, probably due to their relatively low administrative ranks. Therefore, we manually search whether the executives of the SOEs in our sample are subject to corruption investigation via various internet search engines and news reports in the China Core Newspaper Databases. To identify whether the investigations were related to corruption, we follow Griffin, Liu and Shu's (2016) list of corruption-related keywords. This search yields 211 senior corporate executives as well as an additional 46 government officials that are investigated for corruption but are omitted from the CCDI's websites.

Our final sample contains 1,576 individuals that are investigated for corruption, 1,152 of which are government officials, and 424 senior executives of SOEs. Figure 1 illustrates the number of individuals in a given province being investigated for corruption during the 2012-2014 period. The darker the color, the stronger the crackdown on corruption.

Using this information, we construct "Province Convicted Officials", defined as the natural logarithm of one plus the number of individuals investigated for corruption in the province during the year in 2013, and the natural logarithm of 1 plus the number of individuals investigated for corruption in the province during 2013-2014 in 2014. This variable is set to zero prior to 2012.

While this variable may be higher in provinces with higher ex-ante level of corruption, it allows us to capture changes in the economic environment faced by entrepreneurial firms after the start of the anti-corruption campaign. We can therefore study whether as a consequence of the investigations, the negative spillovers associated with firms' efforts to corrupt officials, measured by the EE of large firms, weakened.

4. Results

4.1 Entrepreneurial Firms' Performance

Table 4 explores the effects of corruption, as proxied by the ratio of EE to sales of the large firms in an industry, on entrepreneurial firms' profitability. To evaluate how small firm f ranks within its industry in each year, we subtract from its ROA the median ROA of firms with more than 30 employees within the same industry as firm f in year t. In this way, we capture how small firms fare in comparison to their larger competitors.

It is apparent that corruption is associated with lower profitability for small firms. The effect is not only statistically but also economically significant. For instance, in column 1, a one-standard-deviation increase in the EE of large firms in same industry as firm f is associated with a 2.1 percentage points drop in firm f's profitability, which is equivalent to a 134.62% drop in profitability relative to larger firms. Importantly, the negative effect of large firms' EE on small firms' profitability is robust to the inclusion of province and year fixed effects as well as to their interaction, indicating that we are not capturing shocks associated with firms' local economic environment.

Furthermore, in columns 4 to 6, the negative effect of large peer firms' EE on small firms' profitability appears to become smaller after the launch of the anti-corruption campaign, as indicated by the negative coefficient of the interaction between the anti-corruption dummy and EE(Industry). This is consistent with our interpretation of the evidence in columns 1 to 3. The anti-corruption campaign is expected to have limited the extent to which officials can be corrupted and concede political favors, thus decreasing the effectiveness of corruption and political connections. This in turn should benefit to a larger extent firms more exposed to corruption. Consistent with this conjecture, in column 4, the effect of a one-standard-deviation change in the EEs of large peer firms on small firms' profitability is reduced from 2.25 percentage points before the anti-corruption campaign to 1.75 percentage points after the start of the anti-corruption campaign.

Table 5 repeats the same set of exercises considering a firm's total factor productivity (TFP) as a measure of performance. We estimate a firm's TFP as Giannetti, Liao and Yu (2015). Specifically, for the whole sample of firms in an industry and year, we estimate a log linear production function by regressing the natural logarithm of output on the natural logarithm of fixed assets, the natural logarithm of the total number of employees, and the natural logarithm of raw materials and services. The firm's TFP is computed as the residual of this regression and is effectively a ranking of all firms in an industry and year. Thus our empirical model tests for whether small firms' total factor productivity is below their industry average in a given year when EE are larger.

The methodology we use to estimate total factor productivity somewhat reduces the time-series dimension of the sample and, given the low time series variation of EE(Industry), it prevents us from including firm fixed effects. However, we continue to find that higher corruption by large firms in the same industry stifles entrepreneurial firms' productivity. For instance, a one-standard-deviation increase in the EE of large firms is associated with a decline in the TFP of small firms in the same industry, which is equivalent to 2.15% of the TFP's standard deviation (column 1 of Table 5).

Also in this case, we observe a positive and significant coefficient for the interaction between large peer firms' EE and the anti-corruption campaign dummy. This confirms that the negative spillover effect associated with large firms' corruption efforts becomes smaller after the start of the anti-corruption campaign.

4.2 Robustness

4.2.1 Industry Corruption

As discussed in Section 2, in our analysis, we take the EE of large firms in an industry as given from the point of view of small firms. Since the EE of small firms are 3.38% of the large firms' EE in a median industry and we always use predetermined EE(Industry), we view as unlikely that large firms answer to small firms' choices in a way that may bias our findings. Such an interpretation is also corroborated by the fact that the exogenous shock to the effectiveness of corruption due to the anti-corruption campaign benefits to a larger extent small firms in industries with high ex-ante EE(Industry).

Nevertheless, we perform a number of tests to probe that the endogeneity of EE(Industry) does not bias our findings. In Panels A and B of Table 6, we vary the definition of small firms considering relatively larger firms (that is, firms with higher levels of employment). Our main results are robust, but the externalities of corruption appear to have larger effects on relatively smaller firms and gradually decline as we increase firm size. Since the total EE of the progressively larger firms included in the estimation sample increase relative to the EE of large firms, these results suggest that if large firms reacted to smaller firms' EE, our results would be downward biased.

These results also suggest that the scale of the EE matters for obtaining political favors. Thus, for smaller firms, which can afford only lower EE, a more corrupt environment appears to constitute sands in the wheels.

Panel C repeats the baseline regressions for ROA and TFP considering firms with employment in the second tercile of the whole sample. These firms are much larger than the firms with fewer than 30 employees in our baseline regressions. In a median industry, the total entertainment expenses of these firms are approximately 36% of those of the very large firms, which we use to construct EE(Industry). Thus, if any bias due to the fact that large firms' EE are chosen in response to the EE of smaller firms were driving our findings, we should find stronger results in this subsample.

Panel C reveals the opposite. The point estimates for the coefficient of EE(Industry) and its interaction with the anti-corruption dummy are smaller compared to those in columns 2 and 5 of Table 4 and columns 2 and 4 of Table 5, respectively. An *F* test rejects the null that the coefficients are equal to the corresponding ones in Tables 4 and 5. This further supports our conclusion that our findings are not driven by the fact that large firms' EE respond to small firms' EEs.

Table 7 further explores whether our results depend on the specific measure of corruption we use. Instead of measuring entertainment expenses, we capture how far from a level playing field the environment faced by entrepreneurial firms is using the fraction of politically connected CEOs of listed companies in the same industry. Following Fan, Wong, and Zhang (2007) and Calomiris, Fisman, and Wang (2010), we define CEOs that were previously employed as bureaucrats by the central government or a local government as politically connected.

Our results continue to indicate that competing with large firms that benefit from political connections hurt entrepreneurial firms' profitability and productivity, even though the effect is not statistically significant in one specification (column 3). Importantly, also in this case, the size of the negative externality appears to decrease after the start of the anti-corruption campaign. The large magnitude of the interaction term even suggests that firms competing with politically connected listed companies become more productive than other firms following the anti-corruption campaign. This may suggest that this type of connections may have been particularly pernicious or is more likely to be disrupted by the anti-corruption campaign leading to better allocation of resources.

4.2.2 Possible Alternative Mechanisms

One may also wonder to what extent our results may be driven by SOEs, to which central and provincial governments convey lots of resources in China. SOEs are typically significantly less efficient than private firms. However, this is unlikely to drive our findings as only a handful of the small firms in our estimation sample are SOEs. Columns 1 to 4 of Table 8 show that indeed our results are qualitatively and quantitatively invariant if we drop the few observations relative to SOEs.

A possibly more relevant concern is that EE(Industry) captures the percentage of SOEs in an industry. These firms, often referred to as zombies, may drive down the productivity and profitability of the whole industry as it happened in Japan (Caballero, Hoshi and Kashyap, 2008).

For this reason, in columns 5 and 6, we include controls for the proportion of assets of SOEs in an industry and an interaction between this variable and the anti-corruption dummy. Our results are invariant. The effect of the anti-corruption campaign in industries with different proportion of SOEs is not consistent across specifications.

Table 9 provides more general evidence that industries with different EE(Industry) did not experience different trends in performance already before the anti-corruption campaign. To evaluate this possibility we define a placebo campaign, to take value equal to 1 in 2010 and 2011, two years before the reform. We find that, if anything, firms in which large firms had higher EE had even lower profitability in the two years prior to the launch of the anti-corruption campaign, indicating the increasing costs of corruption and justifying the sense of urgency of the new administration in fighting corruption. More importantly, our main findings are qualitatively and quantitatively invariant.

4.2.3 Industry Shocks and Other Omitted Factors

A possible concern is that large firms have higher EE in industries that experience difficulties in performance or have other uncontrolled characteristics, which are negatively associated with entrepreneurial firms' performance. This could lead to a negative correlation between entrepreneurial firms' performance and $\overline{EE}_{i,p,t-1}^{large}$ even in the absence of a negative spillover effect.

The positive response to the anti-corruption campaign from firms facing large industry peers with higher EE or stronger political connections makes it unlikely that high-EE industries are such that small firms are naturally less profitable and productive. Nevertheless, to further address this concern, in Table 10, we control for large firms' characteristics and their interaction with the anti-corruption dummy. Our results are invariant both qualitatively and quantitatively, mitigating these concerns. Interestingly, after the start of the anti-corruption campaign, small firms perform better if their large industry peers have high leverage. Since political connections in China often translate into easier access to finance, this finding further suggests that small firms with better connected competitors perform better after the start of the anti-corruption campaign.

Table 11 controls non-parametrically for industry-level omitted factors. To do so, instead of considering firms' exposure to large firms' EE in the same industry, we consider that firms may compete for services and resources, especially financing, with large corrupting firms located in the same province, even if these firms are not competitors in the product market. By considering EE in a firm's province, we can absorb industry level omitted factors by saturating the regression with interactions of industry and time fixed effects. It is thus comforting that the effects we uncover are similar to the ones we estimate when we use the EE of firms in the same industry.

Finally, Table 12 considers differences in enforcement across provinces. Instead of using the anti-corruption campaign dummy, we use the province level index capturing the strength of the anti-corruption drive in a province. For small firms in an average industry (with EE(Industry) equal to 0.502), a one-standard-deviation increase in the variable capturing the intensity of the anti-corruption movement in the province, is associated with an increase in industry-year adjusted ROA by 0.342 (= $0.006\times0.502\times1.135$) percentage points.

4.3 Mechanisms

The results so far indicate that corruption has negative spillovers on the performance of small firms. To provide evidence on the mechanisms that drive our findings, we explore whether large peer firms' corruption efforts affect the demand for products as well as access to external finance.

If large peer firms divert demand from small firms, these firms should experience lower growth of sales in comparison to the industry average. Panel A of Table 13 examines the effect of corruption on entrepreneurial firms' sales growth. We observe that entrepreneurial firms increase their sales to a lesser extent when large firms in the same industry have higher entertainment expenses. A one-standard-deviation increase in EE by large firms in the same industry decreases the sales growth of a small firm by 11.486% of the standard deviation (column 1). Consistent with our earlier results, small firms' sales grow faster after the launch of the anti-corruption campaign (columns 3 and 4), which curtails the productivity of the corruption efforts of their large peers.

Corruption efforts are often associated with easier access to external finance. This is particularly likely to be the case in China, not only because formal financial markets are underdeveloped, but also because provincial and central governments support connected businesses by funneling cheap credit. Connected businesses are often treated as industry champions and political leaders' careers benefit from the success of their cronies. Thus, in industries with more connected and corrupting firms, small firms may have more difficult access to external finance.

Panel B of Table 13 explores the effect of corruption on entrepreneurial firms' cost of debt, calculated as interest expenses scaled by total liabilities, from which we subtract the median cost of debt of firms with more than 30 employees in the same industry. Small firms face a relatively higher cost of debt when large peers in the same industry spend more on EE. In column 1, a one-standard-deviation increase in EE by large industry peer firms increases small firms' financing costs by over 6.25% with respect to the sample mean. The effect is more than halved after the start of the anti-corruption campaign.

Higher financing costs appear to have real effects because small firms in industries with high EE invest less and consequently have lower asset growth than the median firm as is evident from the estimates in Panel C. Importantly, this effect also appears to be partially reversed after the start of the anti-corruption campaign.

In summary, small firms are more profitable and productive when their large peers spend less on EE in proportion to their sales, because they are able to increase their sales, invest more, and have cheaper funding.

5. The Aggregate Effects of Corruption on the Economy

So far, we have shown that corruption impacts negatively small firms' performance and ability to grow. However, this does not necessarily imply that corruption is inefficient from an aggregate point of view. Corruption may even be efficient if the most productive (large) firms employ more capital and labor as a result of their higher EE. In addition, high-quality small firms could ultimately grow and overcome the initial scale disadvantage. If corruption does not discourage entry of new firms, especially new high-quality firms, the frictions it creates may have no lasting impact on the economy.

Below, we evaluate these channels to be able to infer whether corruption affects negatively macroeconomic performance.

5.1 The Effects of Corruption on Capital Allocation

A recent influential paper by Hsieh and Klenow (2009) highlights that low total factor productivity in emerging economies can largely be explained by misallocation of resources. Hsieh and Klenow (2009) estimate that moving to a US benchmark level of efficiency would increase total factor productivity in China by 30%-50%. In this section, we ask to what extent corruption hampers an efficient allocation of factors of production in China.

We test whether higher productivity firms attract more resources over time and to what extent higher corruption constitutes sands in the wheel for this adjustment process, adapting the model proposed by Bai, Carvalho and Phillips (2015). A higher correlation between the growth in the use of a factor of production and a firm's marginal productivity of the factor of production implies greater allocational efficiency.

Table 14 shows how corruption by industry peers affects the allocation of labor and capital. The dependent variable is the logarithmic change in a firm's share of the industry's number of employees between t and $t-1$ in Panel A and the firm's share of the industry's fixed assets between t and $t-1$ in Panel B. We measure the productivity of labor (capital) as the ratio of sales to employees (fixed assets). Our regressions include firm fixed effects to account for the fact that some firms may be in industries with higher productivity or grow more given their specialization. We also include interactions of province and year fixed effects to account that some provinces are subject to shocks that affect their growth rate.

We perform the estimates on the subsample of small firms, as in the previous tests, as well on the whole sample of firms. In principle, since we want to evaluate how efficient resources are allocated within the economy, we need to include even the largest companies that may be more productive and may efficiently attract more resources. Our empirical strategy, however, relies on the large firms' EE to evaluate whether corruption hampers or facilitates an efficient allocation of resources. For this reason, we also show the robustness of our results using the subsample of small firms, which do not have control over the EE of large firms in the same industry. The subsample test also allows us to exclude another possible channel. Berkowitz, Lin and Liu (2017) suggest that firms losing political connections become more efficient. While in principle this could contribute to a more efficient allocation of resources, this is unlikely to be the case in the small firms' sample, as small firms were not obtaining many political favors even before the campaign.

As one would expect, columns 1 and 4 of Panels A and B indicate that a firm's use of labor (capital) in an industry increases when it has higher marginal productivity of labor (capital). However, higher EE expenses in an industry decrease the extent to which the most productive firms in the industry are able to attract more capital and labor (columns 2 and 5). The correlation between the marginal productivity of labor (capital) and the growth of labor (capital) shares in the industry increases for firms with higher EE peers following the launch of the anti-corruption campaign (columns 3 and 6), suggesting that a decrease in corruption improves allocational efficiency.

These tests indicate that even if corruption were to affect positively the performance of firms that are able to obtain political favors, it leads to an inefficient allocation of resources and is therefore harmful for the economy.

5.2 Corruption and Firm Entry

In this section, we explore how corruption affects the entry of new firms. To address this question, we consider variation between industries and provinces and compute the fraction of young firms relative to all firms in a province and industry in a given year. We consider young firms that are four years old or less. We test how the EE of large firms in an industry and province affect the proportion of young firms operating in that industry and located in that province.

Considering differences between industries and provinces allow us to control for different entry and exit rates across industries as well as different levels of economic development across provinces, which could affect the proportion of new firms. For instance, some provinces could have more new firms because they have experienced recent improvements in economic performance or because an industry is younger. We absorb this variation by including industry fixed effects and interactions of province and year fixed effects.

Table 15 shows that there are fewer young firms in a province and industry if large firms in the same province and industry spend more on corruption (columns 1-2), though the effect is not statistically significant. We observe a statistically significant increase in the proportion of new firms after the anti-corruption campaign (columns 3 and 4).

More importantly, high EE expenses by large firms in a given province and industry prevent the entry of high-quality young firms (columns 5-6). Interestingly, the proportion of new high-quality firms is no longer negatively affected by EE after the start of the anti-corruption campaign. This, together with the findings that corruption decreases allocational efficiency in Table 14, suggests that corruption hampers an economy's performance.

6. Conclusions

Using a comprehensive firm-level data in the world largest emerging economy, we document a negative spillover effect of corruption on entrepreneurial activity and the allocation of capital and labor. We show that in industries with high corruption, as measured by the entertainment expenses of large firms in that industry, small firms are less profitable and productive than their more established peers. We also identify the channels through which corruption has negative spillovers on the performance of small firms. Small firms have smaller growth of sales in industries with high corruption, arguably because demand is diverted to the largest firms in their industries, which are able to spend more to obtain political favors. Small firms also have higher financing costs in industries with high corruption and can therefore invest less.

A high level of corruption in an industry prevents labor and capital from being allocated to more productive firms and deters entry of high-quality new firms. Overall, our results imply that corruption is detrimental to growth and that interventions aiming to curb corruption, such as the anti-corruption campaign, should benefit entrepreneurial activity and lead to a more efficient allocation of resources.

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Appendix A: Variable Definition

Variable	Definition and Data Source
% of SOEs	Assets of listed SOEs as a fraction of the assets of all the listed firms in an industry.
Age	The natural logarithm of one plus the difference between the current year and the year in which the firm was founded. Winsorized at the 1% and 99% levels. Source: ATS Database.
Anti-corruption	A dummy variable equal to one if the year is equal or greater than 2013, and zero otherwise.
Asset Growth	The percentage change of a firm's total assets between year t and year $t-1$. Winsorized at the 1% and 99% levels. Source: ATS Database.
Capital Reallocation	The difference between the natural logarithms of a firm's share of industry fixed assets between year $t-1$ and year t, winsorized at the 1% and 99% levels. A firm's share of industry fixed assets in a given year is computed as its fixed assets divided by the aggregate fixed assets of all firms in the industry. Source: ATS Database.
Cost of Debt	A firm's interest expenses divided by the average of its total liabilities at the beginning and end of the year. Source: ATS Database.
EE	A firm's business entertainment expenses divided by sales, multiplied by 100. Winsorized at the 1% and 99% levels. Source: ATS Database.
EE (Industry)	The average of the EEs of large firms in an industry, measured at year $t-1$. A firm's EE is computed as its total business entertainment expenses scaled by sales. A firm is considered large if its total assets fall into the top quartile of the sample in a year. Source: ATS Database.
EE (Province)	The average of the EEs of large firms located in a province, measured at year $t-1$. A firm's EE is computed as its total business entertainment expenses scaled by sales. A firm is considered large if its total assets fall into the top quartile of the sample in a year. Source: ATS Database.
Labor Reallocation	The difference between the natural logarithms of a firm's share of industry employment between year t and year $t-1$. Winsorized at the 1% and 99% levels. A firm's share of industry employment in a given year is computed as its number of employees divided by the aggregate number of employees for all firms in the industry. Source: ATS Database.
Large Firm	A dummy variable equal to one if a firm's total assets are in the top quartile of the sample in given year, and zero otherwise. Source: ATS Database.
Leverage	Total liabilities divided by total assets, measured at the beginning of the year. Winsorized at the 1% and 99% levels.

	Source: ATS Database.
MPK	The marginal productivity of capital, approximated by the natural logarithm of sales divided by fixed assets. Winsorized at the 1% and 99% levels. Source: ATS Database.
MPL	The marginal productivity of labor, approximated by the natural logarithm of sales divided by the number of employees. Winsorized at the 1% and 99% levels. Source: ATS Database.
PC (Industry)	The fraction of politically connected public firms in an industry in a year. A public firm is considered politically connected if the CEO was previously employed as a bureaucrat by the central government or a local government. Source: Manual Collection.
Province Convicted Officials	This variable is set to zero before 2013, it is equal to the natural logarithm of one plus the number of convicted ex-officials in a province in 2013, and to the natural logarithm of one plus the number of convicted ex-officials during the 2013-2014 period in 2014. Source: Manual Collection.
ROA	Net income divided by the average of total assets at the beginning and end of the year. Winsorized at the 1% and 99% levels. Source: ATS Database.
Sales Growth	The percentage change of sales from year $t-1$ to year t. We drop observations in which the growth rate of sales exceeds ±97%. Source: ATS Database.
Size	Natural logarithm of total assets, measured at the beginning of the year. Winsorized at the 1% and 99% levels. Source: ATS Database.
State	A dummy variable equal to one if a firm is government controlled or owned, and zero otherwise. Source: ATS Database.
TFP	A firm's total factor productivity, defined as in Giannetti, Liao and Yu (2015). Specifically, for all firms in an industry-year, we regress the natural logarithm of output on the natural logarithm of fixed assets, the natural logarithm of the total number of employees, and the natural logarithm of raw materials and services. The firm's TFP is computed as the residual of this regression. Truncated at the 1% and 99% levels. Source: ATS Database.

Appendix B: Sample Distribution by Industry

Industry	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	Total
Agriculture, Forestry, Animal husbandry and Fishery	245	471	477	823	996	1,010	609	689	597	239	6,156
Mining	2,341	3,978	5,128	6,711	7,419	8,254	8,050	7,903	6,639	3,834	60,257
Farm Products Processing	1,466	2,457	2,636	3,738	4,036	4,396	4,472	4,492	3,753	1,891	33,337
Food Manufacturing	966	1,827	1,935	2,372	2,585	2,738	2,662	2,657	2,461	1,480	21,683
Wine, Beverages and Refined Tea Manufacturing	647	1,126	1,213	1,459	1,573	1,684	1,602	1,619	1,549	1,176	13,648
Tobacco Products Manufacturing	75	99	83	93	87	79	80	77	73	66	812
Textile Industry	2,604	4,166	4,390	6,152	6,189	6,974	7,879	7,277	6,359	3,610	55,600
Textile Garments Manufacturing	1,855	3,456	3,540	4,767	5,041	5,465	5,817	5,160	4,370	2,640	42,111
Leather, Fur, Feather and its products and Footwear	964	1,551	1,588	2,044	2,204	2,620	2,896	2,753	2,349	1,349	20,318
Timber Processing, Bamboo, Cane, Palm Fiber and Straw Products	562	1,017	1,110	1,536	1,682	1,840	1,649	1,558	1,309	620	12,883
Furniture Manufacturing	274	586	634	929	1,075	1,108	1,197	1,119	1,032	556	8,510
Paper Making and Paper Products	1,332	1,993	2,041	2,625	2,693	2,791	2,704	2,620	2,323	1,236	22,358
Printing and Record Medium Reproduction	750	1,302	1,335	1,686	1,852	1,967	1,747	1,669	1,408	719	14,435
Cultural, Educational, Sports and Entertainment Products	433	1,024	1,035	1,393	1,461	1,496	1,524	1,397	1,259	801	11,823
Petroleum Processing, Coking and Nuclear Fuel Processing	564	854	950	1,063	1,081	1,103	1,123	1,119	1,062	665	9,584
Raw Chemical Materials and Chemical Products	3,486	5,980	6,299	8,285	8,850	9,412	9,446	9,255	8,398	4,762	74,173
Medical and Pharmaceutical Products	1,309	2,227	2,321	2,800	3,043	3,248	3,184	3,186	3,008	2,074	26,400
Chemical Fiber	262	442	447	615	627	674	770	776	665	382	5,660
Rubber and Plastic Products	1,901	3,789	3,944	5,539	6,110	6,614	7,221	6,954	6,175	3,954	52,201
Nonmetal Mineral Products	3,337	5,408	5,895	7,903	8,832	9,491	9,619	10,019	8,730	5,016	74,250
Smelting and Pressing of Ferrous Metals	1,678	2,850	3,252	4,204	4,450	4,720	4,558	4,390	3,875	2,235	36,212
Smelting and Pressing of Non-ferrous Metals	1,298	2,232	2,415	3,286	3,494	3,677	3,804	3,721	3,375	1,877	29,179
Metal Products	1,801	3,498	3,843	5,385	6,173	6,752	7,326	7,067	6,111	3,485	51,441
Ordinary Machinery Manufacturing	3,089	5,275	5,663	8,143	9,020	9,535	9,959	9,829	8,604	4,971	74,088
Special Purpose Equipment Manufacturing	1,515	2,919	3,175	4,468	5,190	5,882	6,502	6,476	5,761	3,495	45,383
Automobile Manufacturing Industry	1,609	2,763	3,017	4,140	4,770	5,501	6,087	6,007	5,648	3,682	43,224
Railroad, Marine, Aviation and other Transport Equipment Manufacturing	636	1,235	1,323	1,737	1,962	2,242	2,473	2,403	2,161	1,380	17,552
Electrical Machinery and Equipment Manufacturing Industry	2,341	4,099	4,346	5,915	6,540	6,995	7,597	7,479	6,805	4,407	56,524
Telecommunication Equipment, Computer and other Electronic Product	1,260	3,764	3,802	5,256	6,072	6,634	7,808	7,634	7,099	5,252	54,581
Equipment and Instrument Manufacturing	358	890	938	1,232	1,447	1,611	1,693	1,677	1,492	962	12,300

Other Manufacturing Industry	1,134	2,381	2,612	3,743	4,332	4,959	5,881	5,795	4,930	2,644	38,411
Comprehensive Utilization of Waste Resources	60	128	151	259	355	458	504	472	419	209	3,015
Metal Products, Machinery and Equipment Repair Industry	892	1,579	1,421	1,955	2,008	1,577	291	295	256	134	10,408
Production and Supply of Electricity, Heat, Gas and Water	3,339	5,135	5,603	6,705	7,242	7,676	7,183	7,307	6,876	4,634	61,700
Construction Industry	5,645	7,611	8,311	11,246	12,421	15,183	15,797	15,972	14,470	6,170	112,826
Wholesale and Retail	16,835	27,623	29,642	41,589	48,472	56,387	55,131	54,883	47,299	23,779	401,640
Transportation, Warehousing and Postal Service	2,729	3,883	4,179	5,517	6,065	7,197	7,550	7,852	6,370	6,046	57,388
Hotel and Restaurants	2,160	2,763	2,928	3,683	3,951	4,625	4,247	4,209	3,272	1,413	33,251
Information Transmission, Software and Information Technology Services	1,125	1,903	2,225	3,143	4,126	5,276	5,559	5,773	5,725	5,104	39,959
Real Estate	4,906	6,595	7,478	10,064	11,718	15,273	16,277	16,980	17,600	9,387	116,278
Leasing and Business Services	844	1,169	1,209	1,722	1,925	2,932	3,201	3,342	2,970	2,141	21,455
Scientific Research and Technological Services	580	839	980	1,338	1,593	2,104	2,244	2,346	2,027	1,851	15,902
Water Resources, Environment and Public Facilities Management	54	98	100	134	156	215	220	223	188	120	1,508
Residents Service, Repair and other Services	896	1,299	1,397	1,934	2,160	2,722	2,602	2,563	1,883	1,032	18,488
Education	27	51	47	95	124	180	192	206	182	110	1,214
Health and Social Work	16	81	62	138	147	193	201	218	186	53	1,295
Culture, Sports and Entertainment	918	1,408	1,454	1,927	2,002	2,095	1,500	1,540	1,329	1,046	15,219
Total	83,118	137,824	148,574	201,491	225,351	255,565	260,638	258,958	230,432	134,689	1,936,640

Appendix C: Sample Distribution by Province

Province	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	Total
Anhui	2,416	3,733	5,188	7,389	8,597	10,735	9,491	6,224	5,313	3,291	62,377
Beijing	5,444	6,899	8,111	9,971	15,392	18,095	13,802	14,098	11,945	7,155	110,912
Chongqing	0	2,134	2,285	3,154	3,996	4,538	4,416	4,468	4,067	2,375	31,433
Fujian	3,946	6,259	7,020	8,217	9,051	9,608	9,734	9,670	8,985	4,586	77,076
Gansu	1,560	1,951	2,104	2,494	3,043	3,514	3,395	3,322	2,851	1,962	26,196
Guangdong	5,146	11,635	11,366	15,428	17,490	19,240	24,164	24,802	22,538	13,727	165,536
Guangxi	1,609	2,877	4,020	5,193	5,986	6,590	6,144	6,096	5,690	4,426	48,631
Guizhou	921	1,964	2,231	2,712	3,201	3,742	3,422	3,242	2,676	1,472	25,583
Hainan	488	924	251	1,260	1,059	1,737	1,751	1,892	1,601	994	11,957
Hebei	5,376	9,342	11,591	13,672	16,095	17,529	14,243	13,996	11,324	5,081	118,249
Heilongjiang	1,679	2,648	2,651	3,527	3,912	4,634	4,281	4,588	3,677	2,281	33,878
Henan	2,047	3,786	2,770	10,861	12,514	8,168	8,082	7,977	7,532	3,234	66,971
Hubei	2,372	3,580	3,568	4,306	5,284	6,367	6,988	7,347	6,599	2,724	49,135
Hunan	4,083	5,274	6,248	7,475	8,551	9,545	7,319	6,616	5,521	2,877	63,509
Inner Mongolia	830	1,216	1,384	2,077	2,382	3,064	3,214	3,455	3,058	1,288	21,968
Jiangsu	5,313	9,750	9,237	15,669	16,205	19,026	24,946	25,722	23,511	14,649	164,028
Jiangxi	1,563	2,221	2,601	3,646	4,611	5,372	5,311	5,340	4,406	2,089	37,160
Jilin	1,579	2,083	2,274	2,876	3,125	3,649	3,453	3,459	3,041	1,564	27,103
Liaoning	4,505	6,420	6,835	8,768	9,241	11,090	11,189	12,218	10,512	6,035	86,813
Ningxia	65	824	1,179	1,515	1,820	2,149	2,047	2,117	1,831	1,121	14,668
Qinghai	82	476	584	753	933	1,065	1,002	976	843	516	7,230
Shaanxi	1,976	3,251	3,893	4,502	4,656	5,207	4,699	4,840	4,364	1,822	39,210
Shandong	7,160	9,402	10,351	14,263	15,002	18,001	18,895	18,563	16,964	10,939	139,540
Shanghai	6,058	10,216	9,776	13,403	13,081	15,925	17,455	16,827	14,952	9,999	127,692
Shanxi	2,382	3,552	3,904	4,785	5,034	5,706	5,462	5,758	4,808	2,409	43,800
Sichuan	0	4,348	4,658	5,817	6,446	7,281	7,296	7,387	6,832	2,979	53,044
Tianjin	2,311	3,914	3,798	4,176	4,014	4,813	5,856	5,975	5,624	3,664	44,145
Xinjiang	2,118	2,695	3,027	3,556	4,110	4,164	3,917	3,911	3,630	1,577	32,705
Xizang	0	138	169	194	201	271	284	299	250	153	1,959
Yunnan	1,648	2,570	3,047	3,396	3,409	4,103	3,998	4,156	3,874	1,964	32,165
Zhejiang	8,441	11,742	12,453	16,436	16,910	20,637	24,382	23,617	21,613	15,736	171,967
Total	83,118	137,824	148,574	201,491	225,351	255,565	260,638	258,958	230,432	134,689	1,936,640

Table 1: Descriptive Statistics

Panel A summarizes the main firm characteristics for the full sample and for the small and large firm subsamples. The unit of observation is the firm-year. A firm is classified as small if it has no more than 30 employees. A firm is classified as large if it has total assets in the top quartile of the sample in a given year. Panel B reports the entertainment expenses for firms in the full sample as well as large and small firms.

Panel A: Firm Characteristics

	Full Sample			Small Firm Subsample			Large Firm Subsample			Difference
	# of obs.	Mean	Std. Dev.	# of obs.	Mean	Std. Dev.	# of obs.	Mean	Std. Dev.	in Mean
ROA	1,936,640	0.029	0.103	349,508	0.016	0.092	529,033	0.041	0.099	122.535***
TFP	1,663,179	-0.002	0.293	294,377	0.016	0.256	398,362	0.12	0.349	143.651***
Asset Growth	1,935,386	0.089	0.363	349,142	-0.174	0.537	529,033	0.166	0.358	329.273***
Sales Growth	1,936,640	0.05	0.488	349,508	-0.235	0.727	529,033	0.098	0.591	226.191***
Interest Rate	1,927,162	0.012	0.02	346,212	0.008	0.021	527,657	0.013	0.016	119.305***
EE	1,542,313	0.555	0.957	255,529	0.496	0.917	442,205	0.539	1.027	18.117***
EE (Industry)	1,936,640	0.499	0.229	349,508	0.485	0.251	529,033	0.545	0.251	109.484***
Assets (in million RMB)	1,936,640	298.515	776.128	349,508	132.516	298.77	529,033	1129.565	2254.34	317.498***
Leverage	1,935,429	0.651	0.322	349,149	0.677	0.342	529,032	0.654	0.282	-33.301***
Age (years)	1,936,640	10.998	5.933	349,508	9.559	4.98	529,033	11.616	6.26	170.858***
State	1,936,640	0.135	0.342	349,508	0.083	0.276	529,033	0.23	0.421	197.687***
Capital Reallocation	1,877,410	0.037	0.441	324,321	0.021	0.697	515,100	0.064	0.491	30.990***
Labor Reallocation	1,874,233	-0.099	0.789	339,997	-0.523	1.706	515,226	-0.221	1.489	84.137***
MPK	2,727,892	1.863	2.054	331,767	3.313	2.467	686,915	1.575	2.296	-340.787***
MPL	2,771,865	6.457	1.55	348,926	8.034	1.523	692,708	7.056	1.697	-297.309***

Table 1 Continued.

Panel B: Entertainment Expenses

	Entertainment Expenditures (thousands RMB)				Entertainment Expenditures/Sales × 100			
Year	Full Sample	Large Firms	Small Firms	Difference	Full Sample	Large Firms	Small Firms	Difference
2005	397.280	912.210	207.435	59.908***	0.573	0.535	0.526	0.868
2006	423.136	995.186	202.709	77.219***	0.559	0.524	0.530	-0.704
2007	482.294	1086.068	217.405	86.677***	0.549	0.510	0.526	-1.966**
2008	483.124	1090.569	213.535	103.285***	0.565	0.542	0.511	4.777***
2009	511.439	1159.165	215.893	107.960***	0.590	0.547	0.526	3.204***
2010	585.029	1292.773	253.888	117.844***	0.567	0.543	0.518	3.924***
2011	717.031	1693.978	296.365	132.427***	0.565	0.574	0.450	19.266***
2012	737.587	1694.602	302.430	134.528***	0.552	0.560	0.445	18.431***
2013	749.963	1788.271	312.157	120.295***	0.511	0.498	0.506	-1.070
2014	761.999	1518.789	346.906	49.224***	0.435	0.373	0.520	-7.512***

Table 2: Persistence of Business Entertainment Expenses

This table reports the distribution of firms with different levels of EE. In column 1, the upper half of the table reports the number of firms in different EE sample quintiles in year t, which transit to different sample EE quintiles in year $t+1$. The lower half of the table reports the fraction of firms' different EE sample quintiles in year t, which transit to different sample EE quintiles in year $t+1$. The unit of observation is the firm-year.

	Year t				
Year $t+1$	Bottom	2nd	Middle	4th	Top
	(1)	(2)	(3)	(4)	(5)
Number of Firms					
Bottom Quintile	132,145	39,208	11,263	5,679	4,945
2nd Quintile	40,316	98,021	46,841	15,196	8,084
Middle Quintile	12,220	44,652	89,962	48,825	14,971
4th Quintile	5,847	14,875	45,110	97,840	45,293
Top Quintile	5,022	7,869	13,829	41,150	135,588
% of Firms					
Bottom Quintile	68.38%	20.29%	5.83%	2.94%	2.56%
2nd Quintile	19.34%	47.02%	22.47%	7.29%	3.88%
Middle Quintile	5.80%	21.20%	42.71%	23.18%	7.11%
4th Quintile	2.80%	7.12%	21.59%	46.82%	21.67%
Top Quintile	2.47%	3.87%	6.80%	20.23%	66.64%

Table 3: Determinants of Business Entertainment Expenses by Large Firms

This table relates corruption to industry dynamics and small firm performance. The unit of observation is the industry-year. The dependent variable is "EE (Industry)". "Industry ROA (t-1)" is the average ROA of all firms in an industry, measured at year $t-1$. "Industry Sales Growth (t-1)" is the average sales growth rate of all firms in an industry, measured at year $t-1$. "Entry of Small Firms" is the fraction of small firms among all the firms in an industry. "ROA of Small Firms" is the average ROA of small firms in an industry. Small firms are firms with no more than 30 employees. All variables are defined in Appendix A. T-statistics computed with robust standard errors clustered at the industry level are reported in parentheses. All models include a constant and fixed effects as indicated on the table, but the coefficients are not reported. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

	(1)	(2)	(3)
Industry ROA (t-1)	-0.163		-0.148
	(-0.80)		(-0.71)
Industry Sales Growth (t-1)	0.005		0.014
	(0.05)		(0.14)
Entry of Small Firms		0.109	0.177
		(0.39)	(0.60)
ROA of Small Firms		-0.017	-0.015
		(-1.12)	(-0.87)
Observations	423	517	423
R-squared	0.894	0.885	0.894
Year FE	YES	YES	YES
Industry FE	YES	YES	YES

Table 4: Profitability

This table relates corruption to firms' profitability. The unit of observation is the firm-year. The estimation sample includes firms with no more than 30 employees. The dependent variable is the firm's ROA from which, in each year, we subtract the median ROA of firms with more than 30 employees in the same industry. All variables are defined in Appendix A. T-statistics computed with robust standard errors clustered at the firm level are reported in parentheses. All models include a constant and fixed effects as indicated on the table, but the coefficients are not reported. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)
EE (Industry)	-0.084***	-0.085***	-0.065***	-0.090***	-0.091***	-0.065***
	(-23.12)	(-22.81)	(-14.79)	(-24.67)	(-24.35)	(-14.71)
EE (Industry) × Anti-corruption				0.020***	0.021***	0.008***
				(12.28)	(12.15)	(4.24)
Size	-0.004***	-0.004***	-0.007***	-0.004***	-0.004***	-0.007***
	(-21.32)	(-21.69)	(-15.64)	(-21.17)	(-21.53)	(-15.56)
Leverage	-0.041***	-0.041***	0.019***	-0.041***	-0.041***	0.019***
	(-51.55)	(-51.58)	(15.42)	(-51.48)	(-51.53)	(15.50)
Age	-0.006***	-0.006***	-0.004***	-0.005***	-0.006***	-0.004***
	(-16.42)	(-16.74)	(-4.33)	(-16.21)	(-16.55)	(-4.30)
State	0.011***	0.011***	0.000	0.011***	0.011***	0.000
	(12.77)	(13.09)	(0.17)	(12.65)	(12.98)	(0.19)
EE	-0.002***	-0.002***	0.000	-0.002***	-0.002***	0.000
	(-6.59)	(-6.43)	(0.03)	(-6.48)	(-6.33)	(0.01)
Observations	349,508	349,508	273,112	349,508	349,508	273,112
R-squared	0.058	0.065	0.599	0.059	0.065	0.599
Year FE	YES	NO	NO	YES	NO	NO
Province FE	YES	NO	NO	YES	NO	NO
Industry FE	YES	YES	NO	YES	YES	NO
Firm FE	NO	NO	YES	NO	NO	YES
Province x Year FE	NO	YES	YES	NO	YES	YES

Table 5: Productivity

This table relates corruption to firms' total factor productivity (TFP). The unit of observation is the firm-year. The estimation sample includes firms with no more than 30 employees. The dependent variable is the firm's TFP. All variables are defined in Appendix A. T-statistics computed with robust standard errors clustered at the firm level are reported in parentheses. All models include a constant and fixed effects as indicated on the table, but the coefficients are not reported. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

	(1)	(2)	(3)	(4)
EE (Industry)	-0.022*	-0.024*	-0.026**	-0.027**
	(-1.76)	(-1.90)	(-2.08)	(-2.13)
EE (Industry) × Anti-corruption			0.017***	0.013**
			(2.82)	(2.05)
Size	0.076***	0.075***	0.076***	0.075***
	(117.75)	(117.26)	(117.75)	(117.27)
Leverage	-0.037***	-0.037***	-0.037***	-0.037***
	(-17.26)	(-17.19)	(-17.25)	(-17.19)
Age	-0.025***	-0.025***	-0.025***	-0.025***
	(-25.63)	(-25.56)	(-25.54)	(-25.50)
State	0.042***	0.042***	0.042***	0.042***
	(15.84)	(15.75)	(15.79)	(15.71)
EE	-0.020***	-0.020***	-0.020***	-0.020***
	(-21.53)	(-21.52)	(-21.49)	(-21.49)
Observations	294,377	294,377	294,377	294,377
R-squared	0.187	0.189	0.187	0.189
Year FE	YES	NO	YES	NO
Province FE	YES	NO	YES	NO
Industry FE	YES	YES	YES	YES
Province x Year FE	NO	YES	NO	YES

Table 6: Different Samples of Small Firms

This table reproduces the baseline results for different samples of small firms. The unit of observation is the firm-year. In Panels A and B, the estimation sample includes firms with no more than 50 employees in columns 1-2, firms with no more than 100 employees in columns 3-4, and firms with no more than 150 employees in columns 5-6. In Panel C, the sample includes firms whose number of employees belongs to the second tercile. The dependent variable is ROA in Panel A and columns 1-2 of Panel C; and is TFP in Panel B and columns 3-4 of Panel C. For a firm's ROA, we subtract, in each year, the median ROA of non-small firms in the same industry, where small firms are based on the above alternative definitions. All variables are defined in Appendix A. T-statistics computed with robust standard errors clustered at the firm level are reported in parentheses. All models include a constant and fixed effects as indicated on the table, but the coefficients are not reported. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

Panel A: ROA

	<= 50		<=100		<=150	
	(1)	(2)	(3)	(4)	(5)	(6)
EE (Industry)	-0.057***	-0.061***	-0.035***	-0.038***	-0.030***	-0.032***
	(-18.95)	(-20.27)	(-14.47)	(-15.76)	(-13.33)	(-14.54)
EE (Industry) × Anti-corruption		0.014***		0.011***		0.009***
		(10.36)		(9.24)		(8.14)
Size	-0.003***	-0.003***	-0.002***	-0.002***	-0.001***	-0.001***
	(-20.65)	(-20.54)	(-16.57)	(-16.52)	(-11.03)	(-10.99)
Leverage	-0.049***	-0.049***	-0.059***	-0.059***	-0.063***	-0.063***
	(-73.27)	(-73.21)	(-104.87)	(-104.83)	(-121.46)	(-121.43)
Age	-0.005***	-0.005***	-0.004***	-0.004***	-0.004***	-0.004***
	(-17.56)	(-17.40)	(-18.83)	(-18.72)	(-19.67)	(-19.58)
State	0.011***	0.011***	0.011***	0.010***	0.010***	0.010***
	(15.58)	(15.49)	(16.70)	(16.65)	(16.75)	(16.72)
EE	-0.002***	-0.002***	-0.002***	-0.002***	-0.003***	-0.003***
	(-8.76)	(-8.67)	(-15.56)	(-15.50)	(-20.34)	(-20.29)
Observations	540,565	540,565	885,832	885,832	1,113,836	1,113,836
R-squared	0.062	0.062	0.066	0.066	0.069	0.069
Industry FE	YES	YES	YES	YES	YES	YES
Province x Year FE	YES	YES	YES	YES	YES	YES

Table 6 Continued.

Panel B: TFP

	<= 50		<=100		<=150	
	(1)	(2)	(3)	(4)	(5)	(6)
EE (Industry)	-0.019*	-0.022**	-0.015**	-0.017**	-0.014**	-0.015**
	(-1.94)	(-2.24)	(-2.09)	(-2.32)	(-2.09)	(-2.32)
EE (Industry) × Anti-corruption		0.012**		0.007*		0.006
		(2.48)		(1.68)		(1.61)
Size	0.077***	0.077***	0.076***	0.076***	0.074***	0.074***
	(139.58)	(139.59)	(163.62)	(163.62)	(173.94)	(173.94)
Leverage	-0.044***	-0.044***	-0.057***	-0.057***	-0.062***	-0.062***
	(-24.21)	(-24.20)	(-36.79)	(-36.78)	(-43.65)	(-43.65)
Age	-0.020***	-0.020***	-0.011***	-0.011***	-0.007***	-0.007***
	(-24.08)	(-24.02)	(-15.93)	(-15.89)	(-10.25)	(-10.22)
State	0.040***	0.040***	0.038***	0.038***	0.038***	0.038***
	(18.71)	(18.68)	(21.22)	(21.21)	(23.15)	(23.14)
EE	-0.017***	-0.017***	-0.015***	-0.015***	-0.015***	-0.015***
	(-23.83)	(-23.81)	(-27.48)	(-27.47)	(-30.34)	(-30.32)
Observations	462,364	462,364	774,253	774,253	984,530	984,530
R-squared	0.159	0.159	0.138	0.138	0.130	0.130
Industry FE	YES	YES	YES	YES	YES	YES
Province x Year FE	YES	YES	YES	YES	YES	YES

Table 6 Continued.

Panel C: Firms with Number of Employees the Second Tercile

Dependent Variable	ROA		TFP	
	(1)	(2)	(3)	(4)
EE (Industry)	-0.010***	-0.010***	-0.030***	-0.029***
	(-3.14)	(-3.09)	(-3.27)	(-3.09)
EE (Industry) × Anti-corruption		-0.001		-0.003
		(-0.37)		(-0.67)
Size	0.001***	0.001***	0.081***	0.081***
	(3.87)	(3.87)	(132.18)	(132.18)
Leverage	-0.078***	-0.078***	-0.080***	-0.080***
	(-108.14)	(-108.14)	(-40.74)	(-40.74)
Age	-0.004***	-0.004***	0.014***	0.014***
	(-14.93)	(-14.93)	(15.49)	(15.48)
State	0.007***	0.007***	0.036***	0.036***
	(9.00)	(9.00)	(16.46)	(16.46)
EE	-0.004***	-0.004***	-0.012***	-0.012***
	(-23.58)	(-23.58)	(-19.34)	(-19.34)
Observations	636,624	636,624	584,240	584,240
R-squared	0.088	0.088	0.136	0.136
Industry FE	YES	YES	YES	YES
Province x Year FE	YES	YES	YES	YES

Table 7: Political Connections

This table considers the proportion of politically connected listed firms in an industry and their impact on firm performance. A listed company is considered politically connected if the CEO was previously employed as bureaucrat by the central government or a local government. The unit of observation is the firm-year. The estimation sample includes firms with less than 30 employees. The dependent variable in columns 1-2 is the firm's ROA, from which in each year we subtract the median ROA of firms with more than 30 employees in the same industry, and in columns 3-4 is the total factor productivity (TFP). "PC (Industry)" is the fraction of politically connected public companies in a firm's industry. All variables are defined in Appendix A. T-statistics computed with robust standard errors clustered at the firm level are reported in parentheses. All models include a constant and fixed effects as indicated on the table, but the coefficients are not reported. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

Dependent Variable	ROA		TFP	
	(1)	(2)	(3)	(4)
PC (Industry)	-0.013***	-0.015***	-0.007	-0.014**
	(-7.19)	(-7.64)	(-1.20)	(-2.18)
PC (Industry) × Anti-corruption		0.010**		0.036**
		(2.54)		(2.51)
Size	-0.004***	-0.004***	0.075***	0.075***
	(-20.90)	(-20.87)	(117.89)	(117.89)
Leverage	-0.041***	-0.041***	-0.036***	-0.036***
	(-50.95)	(-50.94)	(-17.03)	(-17.03)
Age	-0.006***	-0.006***	-0.025***	-0.025***
	(-16.91)	(-16.88)	(-25.49)	(-25.43)
State	0.011***	0.011***	0.041***	0.041***
	(12.65)	(12.64)	(15.64)	(15.62)
EE	-0.002***	-0.002***	-0.020***	-0.020***
	(-6.64)	(-6.62)	(-21.17)	(-21.15)
Observations	345,266	345,266	291,251	291,251
R-squared	0.063	0.063	0.190	0.190
Industry FE	YES	YES	YES	YES
Province x Year FE	YES	YES	YES	YES

Table 8: SOEs

The dependent variables are ROA and TFP ad described on the top each row. The estimation sample includes firms with less than 30 employees. In each year, we subtract from each small firm's ROA the median ROA of all firms with more than 30 employees in the same industry. In columns 1-4, we exclude SOEs from the small firm sample. In columns 5-6, we control for the fraction of assets of SOEs among listed firms in an industry, and its interaction with the anti-corruption dummy. All variables are defined in Appendix A. T-statistics computed with robust standard errors clustered at the firm level are reported in parentheses. All models include a constant and fixed effects as indicated on the table, but the coefficients are not reported. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

Dependent Variable	ROA	ROA	TFP	TFP	ROA	TFP
	(1)	(2)	(3)	(4)	(5)	(6)
EE (Industry)	-0.090***	-0.096***	-0.036***	-0.039***	-0.071***	-0.027*
	(-23.29)	(-24.78)	(-2.73)	(-2.99)	(-17.17)	(-1.84)
EE (Industry) × Anti-corruption		0.022***		0.016**	0.024***	0.014**
		(12.60)		(2.40)	(13.88)	(2.16)
Size	-0.004***	-0.004***	0.076***	0.076***	-0.004***	0.075***
	(-19.91)	(-19.73)	(115.69)	(115.70)	(-21.68)	(117.27)
Leverage	-0.040***	-0.040***	-0.035***	-0.035***	-0.041***	-0.037***
	(-49.09)	(-49.05)	(-15.69)	(-15.69)	(-51.63)	(-17.20)
Age	-0.006***	-0.006***	-0.024***	-0.024***	-0.006***	-0.025***
	(-15.91)	(-15.69)	(-23.62)	(-23.55)	(-16.71)	(-25.42)
EE	-0.002***	-0.002***	-0.021***	-0.021***	-0.002***	-0.020***
	(-6.47)	(-6.35)	(-21.62)	(-21.59)	(-6.44)	(-21.48)
State					0.011***	0.042***
					(13.17)	(15.68)
% of SOEs					-0.088***	0.01
					(-12.36)	(0.39)
% of SOEs × Anti-corruption					0.016***	-0.038***
					(5.03)	(-3.07)
Observations	319,769	319,769	270,776	270,776	349,508	294,377
R-squared	0.065	0.066	0.19	0.19	0.066	0.189
Industry FE	YES	YES	YES	YES	YES	YES
Province x Year FE	YES	YES	YES	YES	YES	YES

Table 9: Pre-existing Trends

In this table, we control for the pre-existing trend prior to the anti-corruption campaign. The estimation sample includes firms with no more than 30 employees. The dependent variable in columns 1-2 is the firm's ROA, from which, in each year, we subtract the median ROA of firms with more than 30 employees in the same industry, and in columns 3-4 is the total factor productivity (TFP). "Pre Anti-corruption" is a dummy variable equal to one if a year is 2010 or 2011 and zero otherwise. All variables are defined in Appendix A. T-statistics computed with robust standard errors clustered at the firm level are reported in parentheses. All models include a constant and fixed effects as indicated on the table, but the coefficients are not reported. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

Dependent Variable	ROA		TFP	
	(1)	(2)	(3)	(4)
EE (Industry)	-0.075***	-0.080***	-0.023*	-0.028**
	(-20.10)	(-21.47)	(-1.82)	(-2.17)
EE (Industry) × Anti-corruption		0.012***		0.013**
		(7.08)		(2.02)
EE (Industry) × Pre Anti-corruption	-0.025***	-0.021***	-0.003	0.001
	(-17.73)	(-14.63)	(-0.56)	(0.20)
Size	-0.004***	-0.004***	0.075***	0.075***
	(-21.56)	(-21.49)	(117.26)	(117.26)
Leverage	-0.041***	-0.041***	-0.037***	-0.037***
	(-51.64)	(-51.60)	(-17.20)	(-17.19)
Age	-0.006***	-0.006***	-0.025***	-0.025***
	(-16.72)	(-16.61)	(-25.55)	(-25.50)
State	0.011***	0.011***	0.042***	0.042***
	(13.13)	(13.05)	(15.75)	(15.71)
EE	-0.002***	-0.002***	-0.020***	-0.020***
	(-6.52)	(-6.45)	(-21.52)	(-21.49)
Observations	349,508	349,508	294,377	294,377
R-squared	0.066	0.066	0.189	0.189
Industry FE	YES	YES	YES	YES
Province x Year FE	YES	YES	YES	YES

Table 10: Controlling for the Characteristics of Large Firms in an Industry

This table controls for some characteristics of large firms in the same industry as firm *f*. The unit of observation is the firm-year. The estimation sample includes firms with no more than 30 employees. The dependent variable in columns 1-2 is the firm's ROA, from which in each year, we subtract the median ROA of firms with more than 30 employees in the same industry and in columns 3-4 is the total factor productivity (TFP). "Size (Large Firms)" and "Leverage (Large Firms)" are the average of assets and leverage of the large firms in the same industry as firm f. A firm is classified as large if its total assets are in the top quartile of the sample in a year. All variables are defined in Appendix A. T-statistics computed with robust standard errors and clustered at the firm level are reported in parentheses. All models include a constant and fixed effects as indicated on the table, but the coefficients are not reported. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

Dependent Variable	ROA		TFP	
	(1)	(2)	(3)	(4)
EE (Industry)	-0.066***	-0.066***	-0.034**	-0.033**
	(-15.50)	(-15.38)	(-2.23)	(-2.17)
EE (Industry) × Anti-corruption		0.034***		0.022**
		(14.70)		(2.54)
Size	-0.004***	-0.004***	0.075***	0.075***
	(-21.90)	(-21.79)	(117.21)	(117.21)
Leverage	-0.041***	-0.041***	-0.036***	-0.037***
	(-51.73)	(-51.75)	(-17.16)	(-17.18)
Age	-0.006***	-0.006***	-0.025***	-0.025***
	(-16.62)	(-16.36)	(-25.43)	(-25.34)
State	0.011***	0.011***	0.041***	0.041***
	(13.22)	(13.15)	(15.67)	(15.65)
EE	-0.002***	-0.002***	-0.020***	-0.020***
	(-6.47)	(-6.41)	(-21.47)	(-21.45)
Size (Large Firms)	0.041***	0.048***	-0.002	0.003
	(5.16)	(6.09)	(-0.08)	(0.10)
Leverage (Large Firms)	0.218***	0.274***	-0.164***	-0.129**
	(12.57)	(15.22)	(-2.73)	(-2.09)
Size (Large Firms) × Anti-corruption	0.038***	-0.004	0.008	-0.019
	(10.61)	(-0.84)	(0.56)	(-1.09)
Leverage (Large Firms) × Anti-corruption	0.021***	0.053***	0.045*	0.066**
	(3.30)	(7.86)	(1.90)	(2.55)
Observations	349,508	349,508	294,377	294,377
R-squared	0.066	0.067	0.189	0.189
Industry FE	YES	YES	YES	YES
Province x Year FE	YES	YES	YES	YES

Table 11: Province Level Corruption and Firm Performance

In this table, we measure corruption using the EE of large firms in the same province as firm *f*. The unit of observation is the firm-year. The estimation sample includes firms with no more than 30 employees. The dependent variable in columns 1-4 is the firm's ROA, from which in each year we subtract the median ROA of firms with more than 30 employees in the same industry, and in columns 5-8 is the total factor productivity (TFP). All variables are defined in Appendix A. T-statistics computed with robust standard errors clustered at the firm level are reported in parentheses. All models include a constant and fixed effects as indicated on the table, but the coefficients are not reported. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

Dependent Variable	ROA				TFP			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
EE (Province)	-0.068***	-0.081***	-0.069***	-0.085***	-0.035***	-0.042***	-0.028**	-0.033***
	(-16.06)	(-18.69)	(-16.37)	(-19.44)	(-2.94)	(-3.48)	(-2.31)	(-2.72)
EE (Province) × Anti-corruption		0.061***		0.069***		0.036**		0.026*
		(13.94)		(15.21)		(2.57)		(1.81)
Size	-0.004***	-0.004***	-0.004***	-0.004***	0.076***	0.076***	0.076***	0.076***
	(-21.71)	(-21.66)	(-21.75)	(-21.67)	(117.96)	(117.97)	(118.00)	(118.00)
Leverage	-0.041***	-0.041***	-0.041***	-0.041***	-0.037***	-0.037***	-0.036***	-0.036***
	(-51.81)	(-51.86)	(-51.80)	(-51.89)	(-17.20)	(-17.21)	(-17.13)	(-17.15)
Age	-0.005***	-0.005***	-0.005***	-0.005***	-0.025***	-0.025***	-0.025***	-0.025***
	(-16.04)	(-16.12)	(-16.08)	(-16.17)	(-25.37)	(-25.38)	(-25.39)	(-25.40)
State	0.011***	0.011***	0.011***	0.011***	0.042***	0.042***	0.042***	0.042***
	(13.20)	(13.24)	(13.20)	(13.26)	(15.73)	(15.74)	(15.73)	(15.74)
EE	-0.002***	-0.002***	-0.002***	-0.002***	-0.020***	-0.020***	-0.020***	-0.020***
	(-6.62)	(-6.58)	(-6.62)	(-6.57)	(-21.28)	(-21.27)	(-21.30)	(-21.29)
Size (Large Firms)			0.021***	0.014**			-0.007	-0.010
			(3.46)	(2.30)			(-0.40)	(-0.53)
Leverage (Large Firms)			0.004	0.008			-0.248***	-0.247***
			(0.27)	(0.49)			(-5.40)	(-5.37)
Size (Large Firms) × Anti-corruption			0.006	-0.010*			0.031*	0.025
			(1.16)	(-1.86)			(1.93)	(1.55)
Leverage (Large Firms) × Anti-corruption			0.030**	0.056***			0.059	0.070*
			(2.34)	(4.40)			(1.47)	(1.71)

Observations	349,503	349,503	349,503	349,503	294,371	294,371	294,371	294,371
R-squared	0.069	0.070	0.069	0.070	0.191	0.191	0.191	0.191
Province FE	YES	YES	YES	YES	YES	YES	YES	YES
Industry x Year FE	YES	YES	YES	YES	YES	YES	YES	YES

Table 12: Differences in Enforcement across Provinces

In this table, we measure the shock to the EE of large firms in the same province as firm *f* with "Province Convicted Officials", computed as, for year 2014, the natural logarithm of one plus the sum of ex-officials in a province investigated for corruption during the 2013-2014 period, for year 2013, the natural logarithm of one plus the number of ex-officials in a province investigated for corruption in 2013, and zero if it is before 2013. The unit of observation is the firm-year. The estimation sample includes firms with no more than 30 employees. The dependent variable in columns 1-2 is the firm's ROA, from which in each year, we subtract the median ROA of firms with more than 30 employees in the same industry, and in columns 3-4 is the total factor productivity (TFP). All variables are defined in Appendix A. T-statistics computed with robust standard errors clustered at the firm level are reported in parentheses. All models include a constant and fixed effects as indicated on the table, but the coefficients are not reported. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

Dependent Variable	ROA		TFP	
	(1)	(2)	(3)	(4)
EE (Industry)	-0.085***	-0.087***	-0.024*	-0.026**
	(-22.81)	(-23.57)	(-1.90)	(-2.07)
EE (Industry) × Province Convicted Officials		0.006***		0.007***
		(10.54)		(2.99)
Size	-0.004***	-0.004***	0.075***	0.075***
	(-21.69)	(-21.58)	(117.26)	(117.26)
Leverage	-0.041***	-0.041***	-0.037***	-0.037***
	(-51.58)	(-51.53)	(-17.19)	(-17.19)
Age	-0.006***	-0.006***	-0.025***	-0.025***
	(-16.74)	(-16.56)	(-25.56)	(-25.47)
State	0.011***	0.011***	0.042***	0.042***
	(13.09)	(12.98)	(15.75)	(15.70)
EE	-0.002***	-0.002***	-0.020***	-0.020***
	(-6.43)	(-6.32)	(-21.52)	(-21.48)
Observations	349,508	349,508	294,377	294,377
R-squared	0.065	0.065	0.189	0.189
Industry FE	YES	YES	YES	YES
Province x Year FE	YES	YES	YES	YES

Table 13: Mechanisms

This table relates corruption to firms' sales growth (Panel A), firms' financing costs (Panel B), and asset growth (Panel C). The unit of observation is the firm-year. The estimation sample includes firms with no more than 30 employees. From all dependent variables we subtract, in each year, the median value of firms with more than 30 employees in the same industry. All variables are defined in Appendix A. T-statistics computed with robust standard errors clustered at the firm level are reported in parentheses. All models include a constant and fixed effects as indicated on the table, but the coefficients are not reported. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

Panel A: Sales Growth

	(1)	(2)	(3)	(4)
EE (Industry)	-0.334***	-0.312***	-0.367***	-0.343***
	(-12.00)	(-11.16)	(-13.13)	(-12.18)
EE (Industry) × Anti-corruption			0.124***	0.113***
			(7.53)	(6.80)
Size	-0.010***	-0.010***	-0.010***	-0.010***
	(-8.50)	(-8.20)	(-8.34)	(-8.05)
Leverage	0.053***	0.053***	0.053***	0.053***
	(12.11)	(12.16)	(12.18)	(12.20)
Age	-0.044***	-0.043***	-0.044***	-0.043***
	(-22.42)	(-22.01)	(-22.20)	(-21.83)
State	0.035***	0.034***	0.034***	0.033***
	(7.86)	(7.68)	(7.72)	(7.57)
EE	0.103***	0.103***	0.103***	0.103***
	(47.03)	(47.16)	(47.08)	(47.19)
Observations	349,508	349,508	349,508	349,508
R-squared	0.032	0.036	0.032	0.036
Year FE	YES	NO	YES	NO
Province FE	YES	NO	YES	NO
Industry FE	YES	YES	YES	YES
Province x Year FE	NO	YES	NO	YES

Continued Table 13: Mechanisms

Panel B: Cost of Debt

	(1)	(2)	(3)	(4)
EE (Industry)	0.002*	0.001	0.005***	0.004***
	(1.86)	(1.34)	(5.05)	(4.36)
EE (Industry) × Anti-corruption			-0.011***	-0.010***
			(-33.19)	(-31.56)
Size	-0.001***	-0.001***	-0.001***	-0.001***
	(-24.01)	(-23.79)	(-24.49)	(-24.25)
Leverage	-0.000	-0.000	-0.000	-0.000
	(-0.63)	(-0.86)	(-0.83)	(-1.00)
Age	0.000**	0.000***	0.000**	0.000**
	(2.51)	(2.73)	(1.98)	(2.28)
State	0.000*	0.000	0.000**	0.000
	(1.77)	(1.26)	(2.09)	(1.53)
EE	-0.000***	-0.000***	-0.000***	-0.000***
	(-2.95)	(-2.99)	(-3.21)	(-3.21)
Observations	346,212	346,212	346,212	346,212
R-squared	0.043	0.055	0.046	0.057
Year FE	YES	NO	YES	NO
Province FE	YES	NO	YES	NO
Industry FE	YES	YES	YES	YES
Province x Year FE	NO	YES	NO	YES

Continued Table 13: Mechanisms

Panel C: Asset Growth

	(1)	(2)	(3)	(4)
EE (Industry)	-0.127***	-0.103***	-0.133***	-0.109***
	(-6.75)	(-5.41)	(-7.02)	(-5.69)
EE (Industry) × Anti-corruption			0.020**	0.022**
			(2.07)	(2.20)
Size	-0.062***	-0.062***	-0.062***	-0.062***
	(-63.74)	(-63.61)	(-63.68)	(-63.56)
Leverage	-0.120***	-0.119***	-0.120***	-0.119***
	(-35.01)	(-34.97)	(-34.99)	(-34.96)
Age	-0.022***	-0.022***	-0.021***	-0.022***
	(-14.12)	(-14.17)	(-14.07)	(-14.12)
State	0.003	0.003	0.003	0.003
	(1.01)	(1.04)	(0.98)	(1.01)
EE	0.002*	0.002*	0.002*	0.002*
	(1.74)	(1.84)	(1.77)	(1.87)
Observations	349,142	349,142	349,142	349,142
R-squared	0.047	0.050	0.047	0.050
Year FE	YES	NO	YES	NO
Province FE	YES	NO	YES	NO
Industry FE	YES	YES	YES	YES
Province x Year FE	NO	YES	NO	YES

Table 14: Corruption and the Allocation of Resources

This table studies the effect of corruption on capital and labor allocation. The unit of observation is the firm-year. The dependent variable is the change in the log of the share of industry employment of firm f from year $t-1$ to year t, multiplied by 100,000, in Panel A and change in the log of the share of industry fixed assets of firm f from year $t-1$ to year t multiplied by 100,000 in Panel B. All variables are defined in Appendix A. Estimations rely on the small firm sample in columns 1-3, and the full sample in columns 4-6. The small firm sample includes firms with no more than 30 employees. T-statistics computed with robust standard errors clustered at the firm level are reported in parentheses. All models include a constant and fixed effects as indicated on the table, but the coefficients are not reported. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

Panel A: The Allocation of Labor

	Small Firm Sample			Full Sample		
	(1)	(2)	(3)	(4)	(5)	(6)
MPL	0.445***	0.839***	0.911***	0.403***	0.623***	0.649***
	(68.11)	(62.43)	(67.46)	(201.76)	(145.55)	(150.84)
MPL × EE (Industry)		-0.715***	-0.958***		-0.412***	-0.492***
		(-24.73)	(-33.14)		(-51.23)	(-60.55)
MPL × EE (Industry) × Anti-corruption			0.501***			0.164***
			(80.92)			(115.68)
EE (Industry)		-6.501***	-4.109***		0.691***	1.041***
		(-25.12)	(-16.41)		(13.62)	(20.41)
Size	-0.120***	-0.178***	-0.168***	-0.133***	-0.139***	-0.145***
	(-14.20)	(-22.69)	(-20.98)	(-64.34)	(-67.20)	(-69.68)
Leverage	0.076***	0.030	0.084***	-0.012***	-0.020***	-0.005
	(3.53)	(1.48)	(4.17)	(-2.80)	(-4.70)	(-1.17)
Age	0.033**	-0.040***	-0.058***	-0.003	-0.018***	-0.019***
	(2.26)	(-2.80)	(-3.96)	(-1.03)	(-6.33)	(-6.58)
State	0.010	0.037	0.073**	0.013**	0.010*	0.016***
	(0.28)	(1.11)	(2.10)	(2.32)	(1.85)	(2.89)
EE	0.116***	0.096***	0.082***	0.053***	0.048***	0.047***
	(13.70)	(12.02)	(10.49)	(42.73)	(39.64)	(39.05)
Observations	265,437	265,437	265,437	1,744,042	1,744,042	1,744,042
R-squared	0.440	0.504	0.543	0.288	0.305	0.319
Firm FE	YES	YES	YES	YES	YES	YES
Province x Year FE	YES	YES	YES	YES	YES	YES

Continued Table 14: Corruption and the Allocation of Resources

Panel B: The Allocation of Capital

Sample:	Small Firm Sample			Full Sample		
	(1)	(2)	(3)	(4)	(5)	(6)
MPK	0.379***	0.443***	0.439***	0.287***	0.312***	0.309***
	(120.30)	(71.42)	(69.53)	(275.41)	(148.21)	(145.87)
MPK × EE (Industry)		-0.118***	-0.115***		-0.046***	-0.044***
		(-11.54)	(-11.10)		(-13.34)	(-12.81)
MPK × EE (Industry) × Anti-corruption			0.024***			0.017***
			(6.07)			(14.35)
EE (Industry)		0.391***	0.397***		0.212***	0.216***
		(8.58)	(8.75)		(23.54)	(23.95)
Size	-0.153***	-0.157***	-0.157***	-0.123***	-0.124***	-0.125***
	(-31.77)	(-32.37)	(-32.45)	(-86.78)	(-87.19)	(-87.69)
Leverage	0.027**	0.025**	0.026**	0.012***	0.011***	0.012***
	(2.48)	(2.29)	(2.47)	(4.42)	(4.19)	(4.60)
Age	-0.001	-0.002	-0.006	-0.043***	-0.043***	-0.044***
	(-0.16)	(-0.27)	(-0.78)	(-23.61)	(-23.60)	(-24.50)
State	0.015	0.015	0.017	0.009***	0.009***	0.009***
	(1.03)	(1.04)	(1.14)	(2.86)	(2.85)	(2.90)
EE	0.108***	0.102***	0.102***	0.043***	0.042***	0.042***
	(33.38)	(31.44)	(31.46)	(63.89)	(62.73)	(62.75)
Observations	252,488	252,488	252,488	1,755,034	1,755,034	1,755,034
R-squared	0.461	0.462	0.462	0.384	0.385	0.385
Firm FE	YES	YES	YES	YES	YES	YES
Province x Year FE	YES	YES	YES	YES	YES	YES

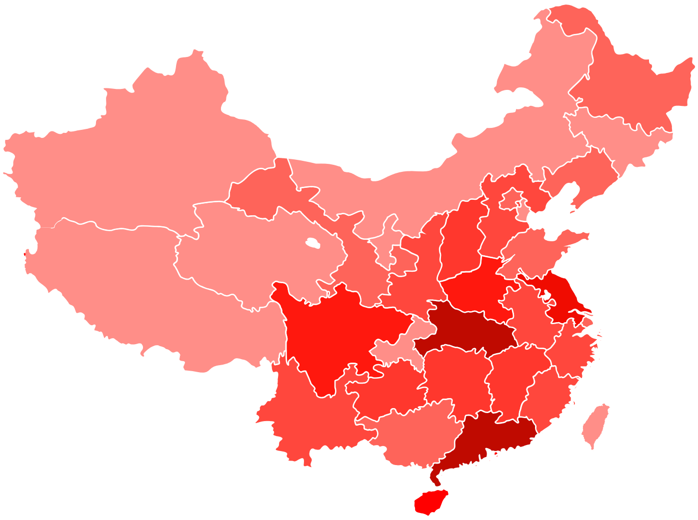
Table 15: Corruption and Entry of New Firms

This table relates corruption to entry of new firms. The unit of observation is the province-industry-year. The dependent variable is the proportion of young firms among all the firms in a province and industry (columns 1-4) and the proportion of high-quality young firms among all the firms in a province and industry (columns 5-8). Each year, we classify a firm to be high quality if its TFP belongs to the top quartile of the sample. A firm is considered young if it is less than or equal to four years old. "Average Size" is the average of the natural logarithm of the total assets of all firms in a province and industry; "Average Leverage" is the average of the leverage of all firms in a province and industry. The remaining variables are defined in Appendix A. T-statistics computed with robust standard errors clustered at the industry and province level are reported in parentheses. All models include a constant and fixed effects as indicated on the table, but the coefficients are not reported. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

Dependent Variable	Young firms as a fraction of total firms within an industry and a province				High-quality young firms as a fraction of total firms within an industry and a province			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
EE (Industry × Province)	-0.002	-0.003	-0.008*	-0.009**	-0.003*	-0.003*	-0.004**	-0.004**
	(-0.57)	(-0.72)	(-1.95)	(-2.30)	(-1.78)	(-1.86)	(-2.44)	(-2.46)
EE (Industry × Province) × Anti-corruption			0.036***	0.041***			0.009***	0.008***
			(5.71)	(6.68)			(3.57)	(3.45)
Average Size	-0.005	-0.001	-0.005	-0.001	0.010***	0.010***	0.010***	0.010***
	(-1.11)	(-0.23)	(-1.11)	(-0.22)	(5.84)	(5.56)	(5.85)	(5.58)
Average Leverage	0.035***	0.036***	0.036***	0.037***	0.013***	0.014***	0.013***	0.014***
	(3.35)	(3.46)	(3.44)	(3.53)	(3.13)	(3.16)	(3.16)	(3.18)
Observations	10,905	10,905	10,905	10,905	9,503	9,503	9,503	9,503
R-squared	0.611	0.639	0.613	0.641	0.345	0.371	0.346	0.372
Year FE	YES	NO	YES	NO	YES	NO	YES	NO
Industry FE	YES	YES	YES	YES	YES	YES	YES	YES
Province FE	YES	NO	YES	NO	YES	NO	YES	NO
Province × Year FE	NO	YES	NO	YES	NO	YES	NO	YES

Figure 1
The Anti-Corruption Movement across Chinese Provinces

This figure reports the number of ex government officials and SOE executives investigated across Chinese provinces between 2012 and 2014. A darker color indicates a larger number.



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