The Impact of Corruption on Small Entrepreneurial Companies —Take Guangdong Province as Evidence

Rufei MA[1], Huan CAI[2]
1.School of Business, Macau University of Science and Technology. Email: rfma@muse.edu.mo
2.School of Business, Macau University of Science and Technology. Email: 863830480@qq.com

Abstract:
We find that corruption has negative impact on the performance of small entrepreneurial companies when they compete with their peers in highly corrupted industries. We took the enterprises of China, the world's largest emerging economy, as the research object, and after China put forward the "Eight-Point Regulation" by President Xi Jinping in 2012, China launched a large-scale and far-reaching anti-corruption campaign that we can regard it as an effective external shock to research and identify channels for corruption's negative external impact. We find that smaller companies have lower profitability and productivity than their established counterparts, with small entrepreneurial company having lower sales growth in the most corrupt industry, probably because demand has shifted to the largest in their industry, which spend more on corrupt officials to gain political support.
Keywords: Corruption; Entrepreneurial Companies; Corporate Governance

1. Introduction

Corruption is acknowledged to be an international phenomenon, especially in emerging markets with underdeveloped financial systems, weak legal protection of investors, and severe government intervention (Pan & Tian, 2017). Corruption has many benefits for businesses. Enterprises can acquire key resources needed for business, allowing shareholders to gain benefits as well as increase the company's profitability by establishing political relationships (Sebhatu & Li, 2016). In addition, the company who builds relationship with government officers may also can attain advantageous treatment of all state-owned enterprises (such as banks or raw material producers), tax reduction, treatment in preferential government contracts, deregulation of the companies involved, or stringent (Lin, Morck, Yeung, & Zhao, 2016). Because of these benefits, many companies choose to establish political connections through bribery to achieve these benefits, which is corruption.

In this article, we use China, an emerging economy, to study the effects of corruption and the great role of anti-corruption through the performance of companies in the industry. Therefore, our research attempts to to provide valid evidence on the far-reaching significance of the current anti-corruption campaign through systematic empirical analysis.

2. Literature review

2.1 Literature review

Some studies have analyzed how corruption impacts the financial sector specifically. They have found that high level of corruption will exacerbate income inequality, offsetting the benefits of financial development (Batabyal & Chowdhury, 2015). A number of studies have shown that corruption reduces capital productivity through various channels. Lower capital productivity means lower profitability (Lambsdorff, 2003). Corruption makes sales slow, unpredictable and inefficient (Roman, 2012). The waste of rent-seeking or distorted public decisions caused by corruption makes the government unable or unwilling to achieve public decision-making (Bardhan, 1997). In addition, Corruption has a negative impact on economic growth. Cross-sectional studies across 45 countries have shown that corruption has an impact on economic growth (Badawi & Alqudah, 2017). The economic base determines the superstructure, and the superstructure has an adverse effect on the economic base (Zhao, 2011). Corrupted officials provide services for the formation and consolidation of their economic foundations. By using their own political and ideological dominance, the scales of market economy leverage are tilted toward the people they identify with, and the operation of resources is not optimal, which leads to uneven distribution of resources and waste (Yan Leung Cheung et al., 2011). On the other hand, due to the involvement of corrupt officials, the relationship between market supply and demand is destroyed, and the number of economic interests is no only determined by the quality of the resources, but by the degree of intertwined relationship with their interests (Griffin et al., 2016a). As the level of destruction is gradually deepened, economic development will be increasingly hindered and destroyed (Pan & Tian, 2017).

2.2 Hypothesis development

Giant companies' corruption has an impact on entrepreneurial companies China's economy is dominated by the market and the government that is responsible for regulation and control of business activities (Piotroski & Zhang, 2014). Besides basis of such a system, the enterprises in the Chinese market have a variety of institution, such as state-owned enterprises, private-owned enterprises and mixed-use enterprises. Among these enterprises, the government has the key resources in hand,

thus many business leaders usually use bribes to build political connections so that indirectly gain more resources for the company to promote profitability, such as regulations, licenses, as well as social and political networks (Liu et al., 2016). This also means that if the other conditions are the same, firms that obtain political relations are more likely to be able to make more profits. Moreover in one industry, the key resources are fixed. Although bribery is a common phenomenon in the market, the flow of funds is not sufficient for small-scale entrepreneurial companies, as well as the existing connections and business channels. Effective bribery is always can be implemented by those business giants (Pan & Tian, 2017). We therefore construct the following hypothesis:

H1: In one industry, the corruption of some giant companies can have a negative effect on the profitability of entrepreneurial companies.

H2：After experiencing the strong shock of the anti-corruption campaign, the negative effect that is made by corrupt practices of large companies on profitability of entrepreneurial companies will be weakened .

3. Methodology

3.1 Data resource

The figures in this paper such as entertainment expenses and company profitability figures are mainly from the commercial data provider "Tianyan Cha"which provides both listed and non-listed companies. The service is paid and the prices depend on the types of information purchased.

In this article, we define a small startup company as a company that has 15 or less employees. In the meanwhile，we define firms with assets in the top 10% as giant companies. In this survey, we selected 3958 giant company samples and used a total of 15,723 small companies as sample in Guangzhou. Among them, we have also removed some companies that have ceased operations, leaving a total of 3278 giant company samples and 13,225small company samples.

3.2 Corruption Proxy

As for corruption, it is difficult to measure its specific value, due to direct and much indirect cost(Pan & Tian, 2017). Therefore in this paper we looked for a proxy to measure, that is ETC (entertainment and travel costs). ETC is used for entertainment (including eating, gifts, karaoke, sports club membership, etc.) as well as travel expenses. Companies typically use ETC accounting to bribe government officials in order to get projects or customers(Zall, 2000). In the new media, entertainment costs are also often heated discussed has relationship with corruption(Lin et al., 2016). Moreover entertainment costs are also widely used in previous literature to measure potential corruption(Griffin et al., 2016a). In this investigation we divide entertainment expenses by the sales of every company as proxy to observe and analyze the data.

3.3 Measurement model

3.2.1 Basic Model

In this paper, we measure the effect taken by big companies' corruption to entrepreneurial companies. Thus we make use of entertainment expenses to sales ratio of the large firms in their industry at year *t-1* to measure entrepreneurial firms' performance. We set the following model:

$$y_{f,i,t=\alpha EE_{i,t-1}^{large}(industry)+\gamma X_{f,t-1}+\vartheta_t+\epsilon_{f,i,t}} \quad (1)$$

In this model, $y_{f,i,t}$ refers to the profitability of firm *f* in i's industry during year; $EE_{i,t-1}^{large}(industry)$ means the average entertainment expenses to sales ratio of the large firms in their industry *i* at year $t-1$, which is also the variable of interest. In the meanwhile, we control the industry fixed effect $X_{f,t-1}$, as well as time's fixed effect.

We expect $\alpha<0$ if the corruption of some giant companies can have a negative effect on the profitability of entrepreneurial companies in a certain industry.

3.2.2 Expanded Model

The effect of anti-corruption on the influence of large companies' corruption on entrepreneurial companies

To prove the second hypothesis, we use difference-in-difference (DID) to measure the effect of anti-corruption campaign. The difference-in-difference (DID) method has been used quantitatively in econometrics for public policy or project implementation in recent years. The DID model is based on data obtained from natural experiments. This modeling is adopted to effectively control the research objects. Differences beforehand effectively are separated from the true results of policy influence. The DID model effectively combines the "before and after differences" and "with or without differences" to some extent to control the influence of some factors other than the intervention factors (X. X. Xu & Lin, 2011);

Based on our first hypothesis, we anticipate that after the anti-corruption campaign started in 2012, the negative impact of large enterprises on the performance of startup companies through the establishment of political relations should be reduced. Here is the model to measure the effect of corruption:

$$y_{f,i,t=\alpha_1 EE_{i,t-1}^{large}(industry)+\alpha_2 anticorruption\times\alpha_1 EE_{i,t-1}^{large}(industry)\times\gamma X_{f,t-1}+\vartheta_t+\epsilon_{f,i,t}} \quad (2)$$

In this model, $AntiCorruption_t$ is the dummy variable. This reflects the anti-corruption in year *t*. Before 2012 this variable is 0, while after China started the anti-corruption campaign, this variable will be 1.If anti-corruption really has a negative impact on the effect made by corrupt practices of large companies on profitability of entrepreneurial companies, α_1<0 and α_2>0

4. Empirical result and analysis

We firstly observe the entertainment expenditures of large companies and small firms. If we regard entertainment expenditures as proxy, we can see that large firms spend much more on entertainment expenses responsibly which benefit a lot from attaining political connections to business interest. In addition, we also observe the data peroxide by entertainment expenditures divided sales and multiple 100. This also indicates that both large companies and small companies make effort in entertainment expense to attain political favor

Table 1: Profitability

EE (Industry)	-0.084***	
	(-23.12)	
EE (Industry) ×Anti -corruption		
Size	-0.004***	
	(-21.32)	
Leverage	-0.041***	
	(-51.55)	
Age	-0.006***	
	(-16.42)	
EE	-0.002***	
	(-6.59)	
Observations		16503
R-squared		0.05858
Year FE	YES	
Province FE	YES	
Industry FE	YES	
Firm FE	YES	
Province x Year FE	YES	

Note: Age stands for the natural logarithm of one plus the difference between the current year and the year in which the firm was founded; Anti-corruption is a a dummy variable, equal to one if the year is equal or greater than 2013 and zero otherwise; EE refers to a firm's business entertainment expenses divided by sales, multiplied by 100; EE (Industry) refers to the average of the EEs of large firms in an industry, measured at year t -1. Large Firm is 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. ROA is calculated using net income to be divided by the average

of total assets at the beginning and end of the year. Sales Growth is the difference between the natural logarithms of a firm's sales between year t and year t-1; Size is the natural logarithm of total assets, measured at the beginning of the year. Winsorized at the 1% and 99% levels . All models include 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.

We use formula(1) to carry out the current regression analysis. In order to better evaluate the business performance of small companies in each firm year, we subtract the ROA of company f from the median of the ROA of other companies in the same industry in year *t*. we obviously obtain the performance of small companies compared with other companies in one industry. Here we use the median rather than the mean because we avoid having too high or too small values affect the size of the average, which can make the result more effective. The data in Table 1 is the result of our regression using STATA. It shows the effect of corruption in the industry, that is, corruption is related to the profitability of small companies. The effect is not only statistically but also economically significant. For instance, in column 1, a one-standard-deviation increase in the entertainment expenses of large firms in the same industry as firm *f* is associated with a 2.1 percentage point increase in firm *f*'s profitability gap, which is equivalent to a 124.64% drop in profitability relative to larger firms. It is apparent that corruption is associated with lower profitability for small firms.

Table 2: Profitability

	(1)	(2)
EE (Industry)	-0.084***	-0.090***
	(-23.12)	(-24.67)
EE (Industry) ×Anti -corruption		0.020***
		(-12.4028)
Size	-0.004***	-0.004***
	(-21.32)	(-21.17)
Leverage	-0.041***	-0.041***
	(-51.55)	(-51.48)
Age	-0.006***	-0.005***
	(-16.42)	(-16.21)
State	0.011***	0.011***
	-12.8977	-12.7765
EE	-0.002***	-0.002***
	(-6.59)	(-6.48)
Observations		16503
R-squared	0.05858	0.05959
Year FE	YES	YES
Province FE	YES	YES
Industry FE	YES	YES
Firm FE	YES	YES
Province x Year FE	YES	NO

All models include 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.

Furthermore, After the analysis of difference in difference model, we can see that after the anti-corruption campaign, the value of α_1 seems to have decreased, which also means that the negative influence of entertainment expense of large companies on the profitability of small businesses also appears to have diminished as the anti-corruption movement began, which is in line with our predictions of $\alpha_1<0$ and $\alpha_2>0$. Consistent with this conjecture, in column 2, the effect of a one-standard-deviation change in the EEs of large peer firms on small firms' profitability gap is reduced from 2.23 percentage points to 1.70 percentage points after the start of the anti-corruption campaign. In all of our tests, after the anti-corruption campaign began, the negative impact of entertainment spending by large companies on small companies has decreased. This indicates that the anti-corruption movement as a strong external shock is beneficial to the profitability of small companies. It is the development of a small company. The proof of hypothesis 2 also provides strong support for the establishment of hypothesis 1.
The two forms of data that we have observed show that corruption is detrimental to the development of small businesses, and that after the anti-corruption campaign, the profitability of small companies has increased, which proves that repeated movements have positive effects on the development of small companies' significance.

5. Conclusions

In emerging economic markets, the use of bribes to establish political ties is a common phenomenon. We use this emerging market in China to study issues related to corruption. Since in 2012, Chinese President Xi Jinping launched a far-reaching and powerful anti-corruption campaign, we can use this external shock to illustrate our arguments. In this study, we selected companies in Guangdong Province of China as our research database. We used linear regression to study that in a high-mal corruption industry, the corruption of large companies may have negative effects on the development of small-scale startup companies. By taking entertainment expenses divided sales as an independent variable, we have found that in industries with high corruption rates, the profitability of small businesses is much inferior to that of mature counterparts. Next, after experiencing the impact of the anti-corruption campaign in 2012, we used the difference-in-difference method to study the impact of anti-corruption on the previous negative effects. We have found that after the anti-corruption campaign, the negative impact of large corporate corruption on small start-up companies has been significantly reduced, which also reflects the obvious benefits of the anti-corruption campaign on the development of small businesses.

Reference

Badawi, A., & Alqudah, A. (2017). The Impact of Anti-Corruption Policies on the Profitability and Growth of the Firms Listed in the Stock Market-Application on Singapore (Panel Data Analysis). *Social Science Electronic Publishing*.

Bardhan, P. (1997). Corruption and Development: A Review of Issues. *Journal of Economic Literature*, *35*(3), 1320-1346.

Batabyal, S., & Chowdhury, A. (2015). Curbing Corruption, Financial Development and Income Inequality. *Progress in Development Studies*, *15*(1), 49-72.

Griffin, J. M., Liu, C., & Shu, T. (2016a). Is the Anti-Corruption Campaign Effective at Reducing Corporate Corruption in China? *Social Science Electronic Publishing*.

Griffin, J. M., Liu, C., & Shu, T. (2016b). Is the Chinese Anti-Corruption Campaign Effective? *Social Science Electronic Publishing*.

Lambsdorff, J. G. (2003). How Corruption Affects Productivity. *Kyklos*, *56*(4), 457-474.

Li, H., Meng, L., Wang, Q., & Zhou, L. A. (2008). Political connections, financing and firm performance: Evidence from Chinese private firms ☆. *Journal of Development Economics*, *87*(2), 283-299.

Lin, C., Morck, R., Yeung, B. Y., & Zhao, X. (2016). Anti-Corruption Reforms and Shareholder Valuations: Event Study Evidence from China. *Ssrn Electronic Journal*.

Liu, Q., Luo, T., & Tian, G. (2016). Political connections with corrupt government bureaucrats and corporate M&A decisions: A natural experiment from the anti-corruption cases in China ☆. *Pacific-Basin Finance Journal*, *37*, 52-80.

Luo, X., Zhou, L., & Liu, S. S. (2005). Entrepreneurial firms in the context of China's transition economy: an integrative framework and empirical examination. *Journal of Business Research*, *58*(3), 277-284.

Pan, X., & Tian, G. G. (2017). Political connections and corporate investments: Evidence from the recent anti-corruption campaign in China. *Journal of Banking & Finance*.

Piotroski, J. D., & Zhang, T. (2014). Politicians and the IPO decision: The impact of impending political promotions on IPO activity in China ☆. *Journal of Financial Economics*, *111*(1), 111-136.

Roman, A. V. (2012). The Myths Within Anticorruption Policies. *Administrative Theory & Praxis*, *34*(2), 237-254.

Sebhatu, S. P., & Li, P. L. (2016). What is Governance? The Ethical Dilemma for Leaders and Managers: Multiple Case Studies of Corruption from China ☆. *Procedia - Social and Behavioral Sciences*, *224*, 467-474.

Xu, X. X., & Lin, Z. W. (2011). VAT Transformation Reform and Firm′s Fixed Assets Investment Decision——A Panel Difference-in-difference Model Test Based on Chinese Listed Company. *Taxation & Economy*.

Zall, M. (2000). Business Travel and Entertainment Expenses. *Fleet Equipment*(Jul).

Zhao, J. X. (2011). A Systematic Discussion of the Formation of Marx's Economic base Determines Superstructure Axiom. *Journal of Beijing Administrative College*.