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der Christian-Albrechts-Universität zu Kiel

**FIRM-GOVERNMENT RELATIONS CHINESE STYLE:
THEORETICAL AND EMPIRICAL ANALYSIS OF THE IMPACT OF NETWORK
RELATIONS ON ECONOMIC PERFORMANCE IN RURAL CHINA**

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vorgelegt von
M. Sc. Jiangping Han

aus Hangzhou, China

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| Dekan: | Prof. Dr. Uwe Latacz-Lohmann |
| 1. Berichterstatter: | Prof. Dr. Dr. Christian H. C. A. Henning |
| 2. Berichterstatter: | Prof. Dr. Awudu Abdulai |
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Preface

The decline of central planning in China has given way to a new variant on capitalism: the socialist market economy. By following principles of economic reforms and decentralization China has achieved rapid economic growth. However, in the Chinese case, the patterns of market economy still remain socialist in many very fundamental ways. At the heart of the discussions are notions that business and politics organizational models, and more specifically, the relational patterns between firms and governments, and how the exchange structures among different organizations define the unique case of China. It provides chances and challenges for researchers to explore and understand the systems between market and hierarchies in this country. Therefore, this PhD thesis theoretically and empirically discusses the topics on how the relationships between firms and local governments are formed and evolved, how the firm-government relations affect firm's market transactions and in addition, what the structure of firm-government relations means for the economic performance of those firms.

In China, the institutional structure in rural economy has diverged from the industrial and urban economy in important way. The development of township and village enterprises (TVEs) had been once portrayed as an exceptional organizational form in rural area, and the primary segment of TVEs contributed to China's high economic growth in the 1980s and 1990s. Despite the decline of government intervention in TVEs nowadays, these sectors have been pushed to respond to the market forces and to hierarchial controls simultaneously. This dissertation mainly employs extensive data collected in Zhejiang province of China in interviews with managers of TVEs, government officials, and academics. The process by which TVEs began to develop and later to decline is thoroughly discussed, the structures and behaviors between rural firm and rural administrative offices is also examined. Furthermore, we apply more advanced quantitative methodologies to investigate how the relational and organizational attributes are likely to be associated with firm's market transactions and economic performance.

Overview of rural firms and agribusiness industry in China: an institutional perspective

Paper 1 begins with examining the process of economic reform in China. It then lays out the macro and micro institutional background of China's economic development. More specifically, the paper portrays the overview of agribusiness industry in

rural area with detailed introduction about the relationships between “dragon head” agribusiness companies and local governments. The paper offers institutional and organizational perspectives on agribusiness industry in rural China.

Theories of firm-government relationship in rural China

Paper 2 has extensively discussed the theoretical models on firm-government relationship in rural China. It presents a literature survey of TVEs’ relationship with local governments, and how the relational attributes influences firms’ welfare and performance. It then incorporates the perspective of social networks and use it as an essential argument to describe firm-government relationship. A simple bilateral micro model is developed to describe how the firm-government relationship influences firm’s investment plan and welfare functions in rural area.

An analysis of the effect of firm-government network on management innovation

Paper 3 as a collaborated work examines the effects of institutions on firms’ management behavior. By proposing an externally embedded network perspective on firm performance, it demonstrates how firms are influenced by the external institutional structure. In the framework of China’s economic development, the strong links between firm and local government is observed, and these links will significantly influence the firms’ management strategies. Thus, the paper focuses on the firm-government network as a driving force to the firm management ability and behavior. Furthermore, by applying a simple game-theoretical model the network value of firms’ local and external networks in the effects of firm-government relationship is examined. In the end, some implications are given to the firms’ management strategies in the light of unique firm-government relations in China.

Firm-government relations and market transactions in rural China

Paper 4 examines the role of firm-government relation in firm’s market transactions in rural China. By examining the past theoretical contributions on firm-government relations in the framework of TVEs as well as the evidences we collected during the interview, a measurement based on ego-centric network theory to operationalize the firm-government networks is explored. Using the interview results of field trip survey of medium and small size firms in rural area of Zhejiang province in 2008, and by employing ordinal regression methodologies, we observe the firm-government

network plays a positive role through a series of market transactions mechanisms, such as financial access and raw materials resources access, in addition, the firm-government relations more or less have influences on input and output products prices. We argue the managers who are active in political connections may easily overcome business transaction obstacles.

Estimating the impact of network relation to local government on technical efficiency in Chinese agribusiness industry

Paper 5 discusses two contradicted mechanisms that explain China's economic success: *market-preserving federalism* and *local corporatism*. The former argument from a macro perspective implies the competition between local governments and sufficient mobility of firms, by which firm-government relations have no impact on firm performance; the latter emphasizes the importance of local government-firm relations as a driving factor of firms' economic performance. In this regard, the paper analyzes the impact of firm-government relations on firms' economic performance at the micro level. In particular, we estimate a stochastic frontier production function incorporating social network relations to local government as determinants of firms' technical efficiency. Major results imply a significant positive impact of firms' network relations to local government on technical efficiency. However, after correcting aggregate outputs for firm specific terms of trade, this positive impact of firm-government relations vanishes. Interpreting our results we conclude that, while network relations to local government correspond to valuable resources at the micro level, these do not necessarily translate into productive resources at the macro level. Thus, given the institutional background with social planning in China, economy good connections to local government mainly imply that firms have good access to scarce inputs or to lucrative output markets. However, at the macro level favorable market access does not necessarily correlate with firms' efficiency and hence do not imply higher economic performance.

CHAPTER 1
OVERVIEW OF RURAL FIRMS AND AGRIBUSINESS INDUSTRY IN CHINA:
AN INSTITUTIONAL PERSPECTIVE

Jiangping Han

Abstract

This paper begins with examining the process of economic reform in China. It then consequently investigates the macro and micro institutional background of China's economic development respectively. More specifically, the paper lays out the overview of agribusiness industry in rural area with detailed introduction about the relationship between "dragon head" agribusiness companies and local governments. The paper offers an organizational and institutional perspective on agribusiness industry in rural China.

Key words: agribusiness, dragon head companies, China

This paper will be submitted to *Berichte über Landwirtschaft*

1 Introduction

The magnitude and rapidity of China's recent gains stands out against the background of stagnate growth among rest of the world. The economic reform shifts the country from poverty to growing prosperity, from village to city, from plan economy to market economy and from public towards private ownership, the structure of the society changes significantly. China's agricultural and rural development have also changed dramatically in the past decades, the nation is working hard to increase its agricultural production and becomes more agriculturally independent, with a target of 95% self-sufficiency. To fulfill this objective, agricultural reforms and rural industry reforms are taking place aimed at making China a more efficient producer.

Agriculture sector has clearly played an important role in supplying labor, food, raw materials and jobs to China's economic miracle. Indeed, China's economic reform has been intensively associated with the agricultural sector. As an innovative and successful reform coming from the rural area and initially rooted in the agriculture, rural industry reform has brought fundamental, transformative changes not just to agriculture but also to the entire rural economy. Rural industry reform is generally equated with the development of Township and village enterprises (TVEs) in China. TVEs, as a special organizational form, are geographically located in township and villages that are owned collectively or privately by rural community or individual farmers. TVE ownership has evolved through time, from township or village government owned at initial time to expansion of private TVEs after 1990s. TVEs operate in all sectors, especially in construction, chemistry, light industry, there is a significant presence in the service sector as well. TVEs have speeded up the pace of rural development.

There is a wide misunderstanding among western researchers that the amount of TVEs has accounted for a large part of agribusiness industry. However, TVE as a business form in rural area has contributed very little to agriculture and agribusiness sector, in 2007, around 78% of TVE value-added was in the secondary sector, 22 % in the tertiary sector and only 1% in the primary sector (CSY, 2009). In general, China's agribusiness has seen rapid growth in recent years, from 2000 to 2007, the number of large-scale agribusiness companies has almost doubled from 18,000 to over 29,206 (CSY, 2008). As referred above, there are TVEs specializing in the agribusiness sector together with state-owned Enterprises (SOEs) and foreign invested enterprises all active in the same sector in China. The surge of agribusiness

development is led by increased demand for processed agricultural products such as dairy and livestock products, as well as government policies that encourage to directly develop rural agribusiness. However, agribusiness still faces rigorous challenges. For example, raw material prices have changed significantly through years due to fluctuations of the international market prices and the rural farmers has few information adapted to the daily changing prices, Chinese government would then administratively influence the output and input prices to support the farmers and support the sector itself. There have been other problems such as poor quality and sanitary of agricultural products. All in all, agribusiness has come to be seen not just as economically important, but as a critical part of society.

Agribusiness in China is not only promoted by the government, but also propelled forward by a flushing of foreign investment and western business strategies. By becoming a solutions provider¹ up and down the value chain, more and more food industry companies discover it could create far greater value in China, and are encouraged to do so. Taking a partnership approach toward customers and suppliers, by organizing varieties of business models such as "Dragonhead + farmers" or "Dragonhead + farmers + farming base", those leading agribusiness firms play an important role in development of agribusiness industry in China.¹ The players who are involved in growing, harvesting, marketing and processing the selected agricultural products include government officials, farmers, entrepreneurs, managers and other staffs. As a result of this transformation for the industry, we would see a newly agribusiness sector in the future.

In spite of a huge number of literature on the development of China's economy and rural industrialization, few research has systematically investigated agribusiness sector, and how agribusiness industry is developed under the institutional background with Chinese characteristics. In the following we will discuss briefly the institutional background of rural firms in China, in the light of of macro and micro settings, then we extensively discuss the general development of agribusiness, the relational forms between different players in this sector and how the agribusiness companies keep relations with local government officials, in the end, we conclude with an outlook on China's agribusiness sector.

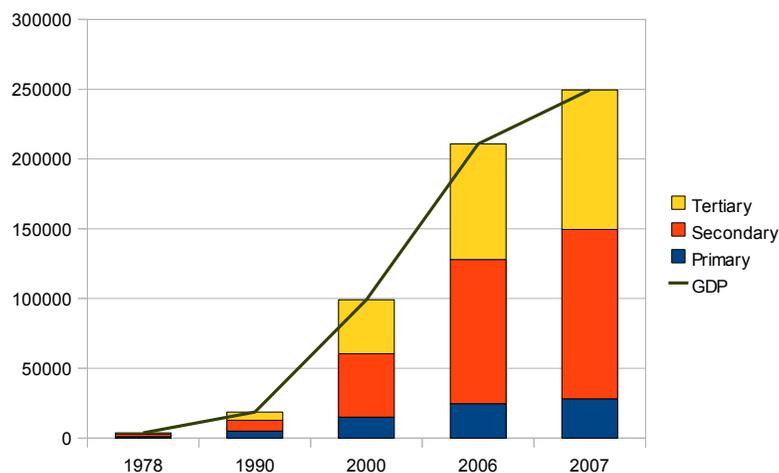
¹'Dragonhead' agribusiness companies are regarded as vehicles for vertical integration and modernizing agriculture by central government. Enterprises with the name of 'dragonhead' status could receive political support and other economic benefits.

2 Institutional Background of Rural Firms

2.1 Macro-level Background

Economic Growth. As the fastest growing economy in the world, China has sustained double-digit growth figures in recent decade. Even in 2009 while most of the countries in the world suffered from recession due to the outbreak of financial crisis, China is the key winner with growing 8 percent a year as well. As Figure 1 shows, during 1980s, China's GDP grew at an average annual rate of 10.2 percent; between 1990 and 1996, the average annual rate of economy growth for real GDP achieved 12.3 percent. After 2000, China kept GDP growth rate at high single-digit growth. It has also had the high industrial and service growth rate in the past decades, although the agricultural growth rate has kept at a low level. China's economic reforms have been obviously a remarkable and dramatic success. Nevertheless, China is a nation that economic and political power are inevitably interwind, political influences have touched every facet of economy and business.

Figure 1: GDP growth in China, 1978-2007 (100 million yuan, RMB)



Note: On Feb 21th, 2010 the currency exchange rate between Euro and RMB Yuan is 1 Euro=9.28 Yuan

Source: Data are from *China Statistics Yearbook, 2008*

On the contrary to the traditional common sense which suggests the power of market economy, China's amazing success in economic reform lies in the state's participation in the economy development and business activities. Referring to how the transitional economy would be changed into a capitalist system, there are conventionally two arguments, "big-bang" approach and "gradual" approach. The first school of researchers believe the rapid privatization is the only effective path of transition from planned to market economy, while second school of researches (Oi, 1992;

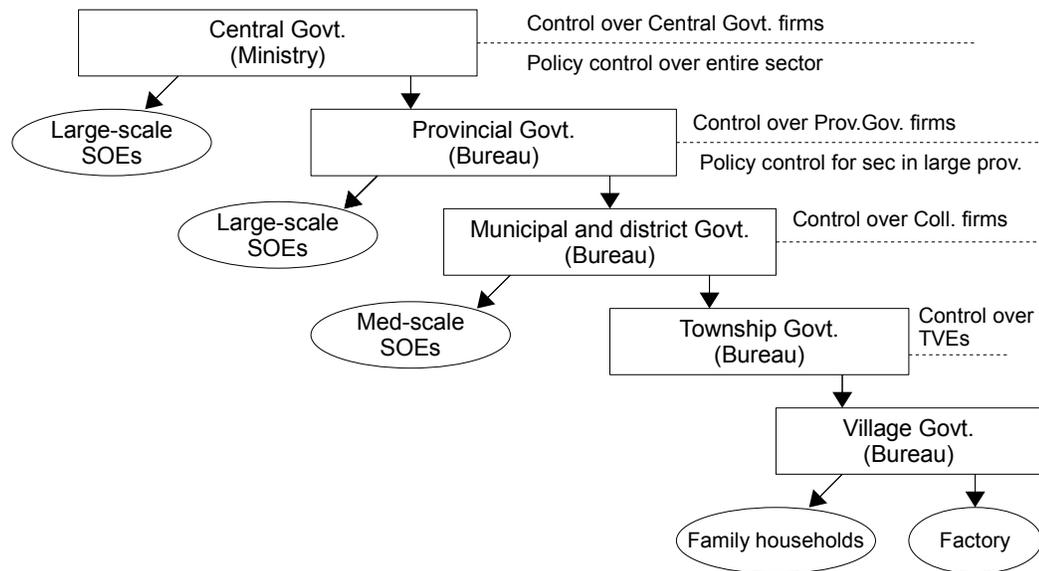
Oi et al., 1999; Walder, 1995) argue that markets are fundamentally political, social and cultural system and a stable transmission to a capitalist system occur in a gradual system, with significant and constant support from the state. China obviously have taken the road of "gradualist" approach, with extensive political participation and support in the economic issues. In order to understand how the economic transformation in China is realized, it is necessary to examine the arrangement of political administrative structure.

Political administration. Since in China the economy is highly embedded in the politics, the whole country is organized into a tightly nested hierarchy structure where Communist Party's plan is carried out through the central government in Beijing, twenty-two provinces, another five autonomous regions and three municipalities (Guthrie, 2008). Approximately 2,200 county governments are set under the lead of district government, and simultaneously supervise the lowest level of branches and rural township or village governments. The administrative structure is depicted in Figure 2. This administrative structure forms the hierarchy in which national resources and incentives are allocated from the central policies to various levels of local governments. Different levels of governments have direct control over SOEs in this system. The ministry of a given sector have direct control and supervisory power over SOEs, as do provincial, municipal and township levels of government. From the administrative ranking, the governments lower than provincial governments could be considered as local governments. However, we prefer to regard the governments rooted in rural area, like village, township or county governments as local governments due to their influential power in the local community and their specific relationships with local firms.

Despite of the seemingly centralized economy structure as referred above, local governments often interpret the central government's policies flexibly and have frequently implemented them strategically for their own, as Weingast (1995) has suggested *market preserving, federalism* structure. One of the main responsibilities of local officials is to offer guidance to the firms under their jurisdictions, helping them to undertake new management practices and asking for some economic returns to the community. Under this situation, local governments would flexibly interpret the national policies in order to make mutual contract for the goods of two sides.

Enterprise Structure. The political administrative structure decides the enterprises structure over the country. China's industry sectors include four main ownership categories, state-owned enterprises (SOEs); collective enterprises, which are

Figure 2: Nested hierarchy of different levels of administration in China.



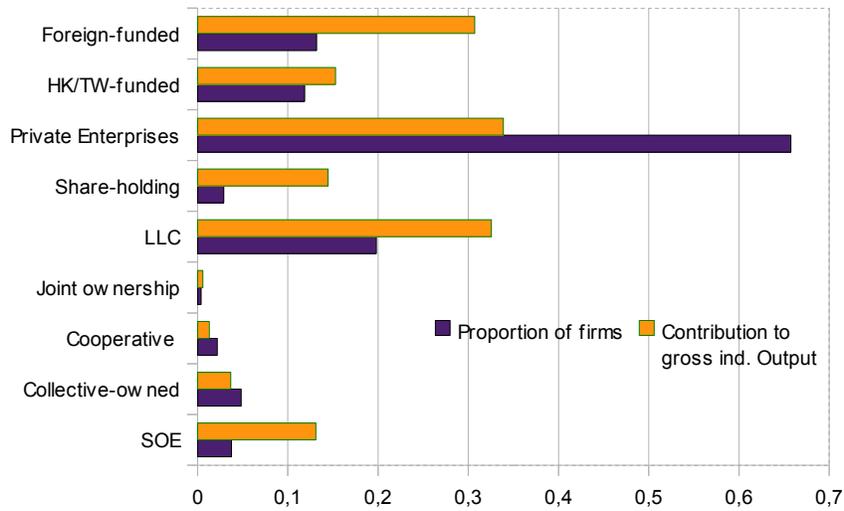
Source: Data are based from Guthrie, 2008

consisted of township and village enterprises (TVEs) in rural and urban area; foreign funded enterprises and individually owned or other private enterprises. Over the progress of economic reforms, Chinese central government has issued de-collectivization policies in both rural and urban areas, and formalize officially that all sectors with different ownerships participate in the market competition on an equal basis², the allowance of family household business and private enterprises have accelerated the emergence of private industry. Figure 3 shows different ownership types of enterprises in China, both the number of private enterprises and the share of output from private enterprises stand much larger than these of other organizational forms. Figure 4 then illustrates the employment composition among different forms of enterprises. It is obvious that in both rural and urban areas, the employment contribution of private enterprises plays a significant role.

Even in the area of private enterprises and share-holding companies, we must acknowledge the complexities of firm-government relations in the Chinese model. Although the government is receding from the functions of daily business in different sectors, the political officials retain some shares in the private enterprises and the firms are glad to hold these shares to secure easier resource access and social capital.

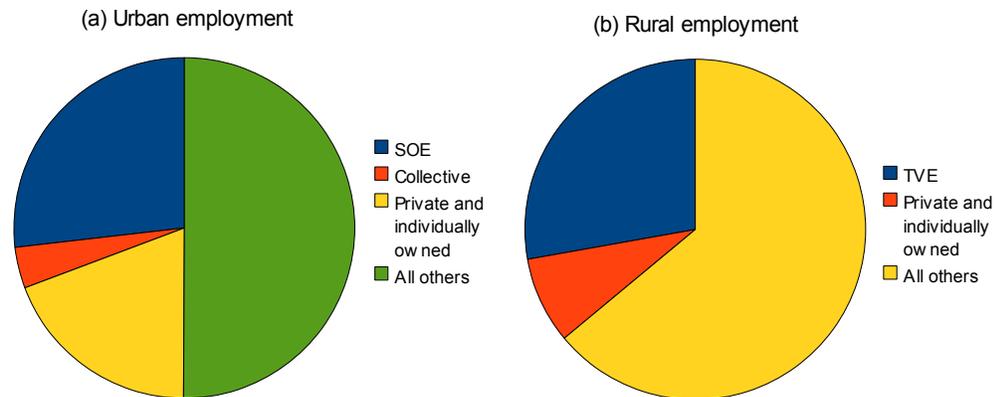
²The Decision on Several Issues for Establishing a Socialist Market Economy System, passed in the Third Plenary Session of the 14th National Congress of the Chinese Communist Party, 1993.

Figure 3: Different ownership types of firms in China, 2008



Source: Data are from China Statistics Yearbook, 2008.

Figure 4: Employment by type of ownership, 2008



Source: Data are from China Statistics Yearbook, 2008.

Next section we will discuss how the relationship is formed between political officials and rural firms in the agribusiness sector.

Policy Environment. Basically, the government encourages to develop private enterprises. The Company Law was passed in 1994 to stipulate the legal guarantee for protecting the non-state sector. The law and other Regulations of Private Enterprises encouraged enterprises to build a new corporate structures and standardize organizational bodies according to the western company set-up structures.³ Since

³The government prefers to keep the status of socialist value, thus it has equated a term commonly associated with the private sector in China (*mingying qiye*, literally translated as "people-run enterprises") with non-state sector more generally, to distinguish the name differently from that

then, the non-state sectors have developed fast thanks to the legal acknowledgement and protection. The private institutions have gradually rationalized. Although all types of China's business organizations were driven to behave like an autonomous market player, the political organizations are not reluctant to give up their power in business practise. For example, when seeking to prove that the reforms have not undermined state control, the government assigns firms typically classified as non-state, such as collective firms and shareholding firms in which the state or local government maintains a substantial equity interest (CSY, 1999).

The policy environment toward private activity seems not as favorable as the policy itself explains. For example, the private sector has grown throughout the reform era but its growth has occurred against substantial and even growing financing constraints. Allocation of financial resources are biased between state-owned or more specifically, politically embeded share-holding enterprises and private enterprises. According to a nationwide private-sector survey which conducted in 2002⁴, Figure 5 remarkably shows the trend: to most private entrepreneurs, the importance of formal finance is declined and the importance of informal finance is increased. The private firms in rural areas seem prefer to receive informal loans in the start-up year. In the next section, we extensively discuss the micro-settings in rural area.

2.2 Rural Micro-level Setting

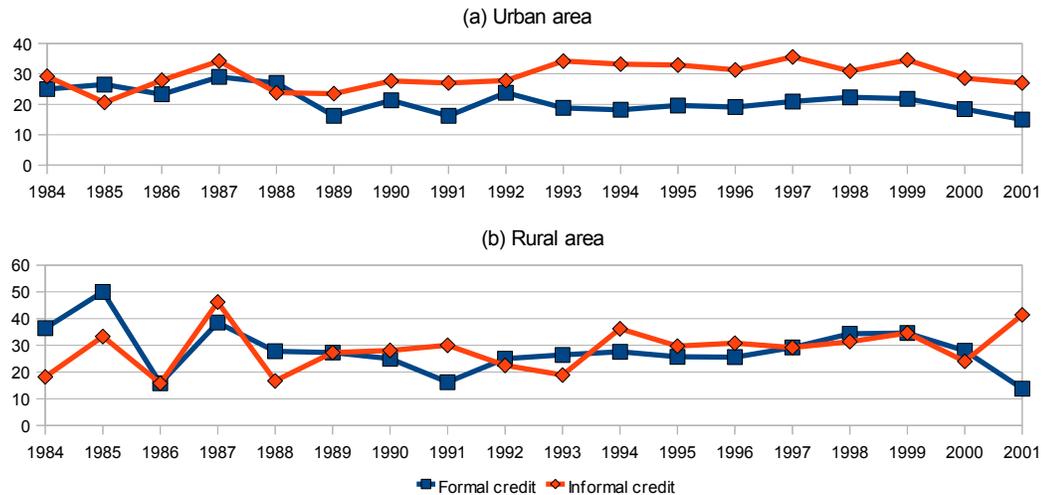
Types of TVE Ownership in rural area. TVEs were considered as a unique economic form in rural China, which were set up by local governments' initiative as a consequence of a series of national economic policy. Woo(1999) has investigated the different organizational models of TVEs and has summarized three types of collective TVEs, (1) genuine collectively-owned enterprises. These firms are registered and operated by rural local governments, like village or township governments; (2) partnership between local officials and private entrepreneurs.⁵; (3) private-financed and privately operated enterprises seeking political shelter and avoiding legal dis-

in the capitalist system.

⁴The survey was organized and supervised by the All-China Federation of Industry and Commerce, with focus on private sector. We take the questions of financial treatment of the private firms in the start-up year as an example.

⁵These partnership firms are very common in modern China. Many local politicians participate in the firms' business in the name of their spouses or relatives, in order to escape the supervision from upper level governments.

Figure 5: Perceptions of credit bias, 1984-2001



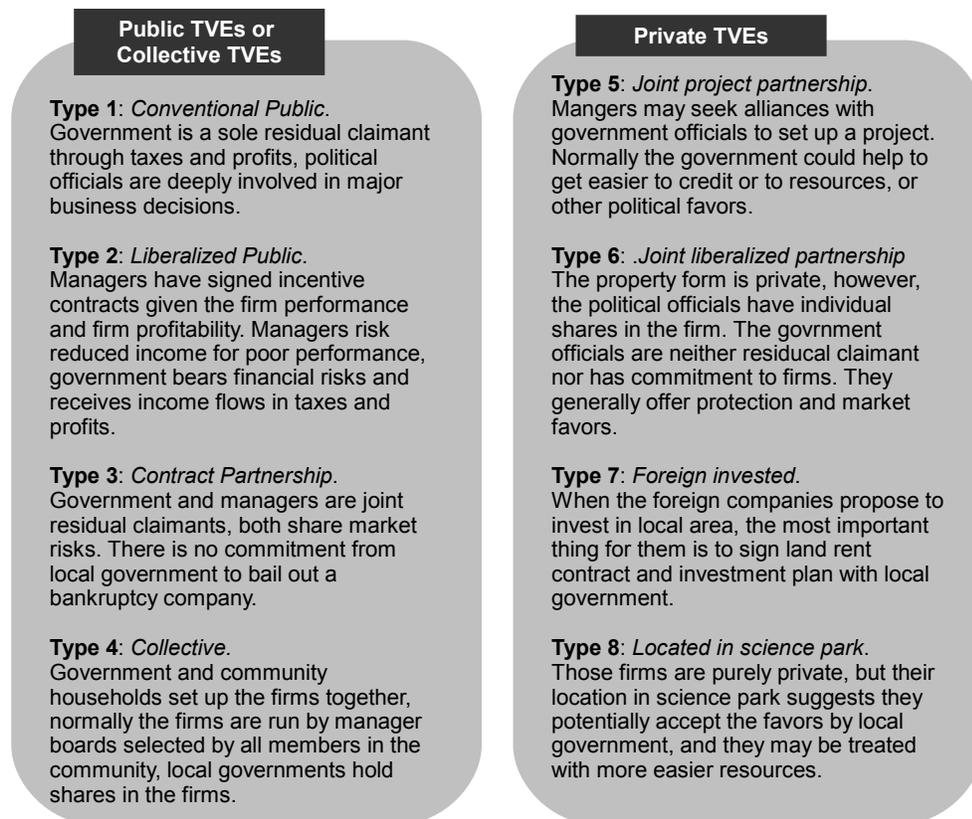
Note: Loans from banks, credit unions and collective units are considered as formal finance, loans from relatives and individuals, or loans through the social relationship with political officials are considered as informal finance. Source: Data are calculated based on Huang(2009), p.200.

crimination.⁶ As the economic reforms progressed, those collectively owned or public TVEs in the rural economy were gradually to be cut off from funds and supports from local governments. TVEs rapidly became to resemble business organizations (Walder, 1995). Nevertheless, TVEs, no matter private or public, still find different ways to keep connections with local bureaus or local officials. We distinguish the ownership of TVEs into two categories, as figure 6 illustrates, as collective and private. More specifically, we describe in details how the relationships and partnerships between TVEs and local governments are formed.

Development of TVEs in rural area. When China began to undertake the economic reform two decades ago, a self-reliance fiscal system was initiated to apply among local governments, the rural households were gradually relaxed in engaging in non-agricultural activities. Under this circumstance, local governments held the responsibility to develop the community economy and absorb the abundant rural labor force by his own. A public ownership was a win-win method for local officials to realize the economic growth and to reduce the rural non-agriculture unemployment rate, and for local business to thrive by taking of local governments' assistance in accessing scarce un-marketed resources. From 1980 to 1999, the output of TVEs kept growing by nearly 20 percent annually, achieved the growth rate much higher than

⁶Category (3) could be merged into category (2) since officials would ask for share holding if they are asked to offer political shelter or resource beneficiary.

Figure 6: Types of public and private TVEs and their partnership with local officials



Source: own illustration.

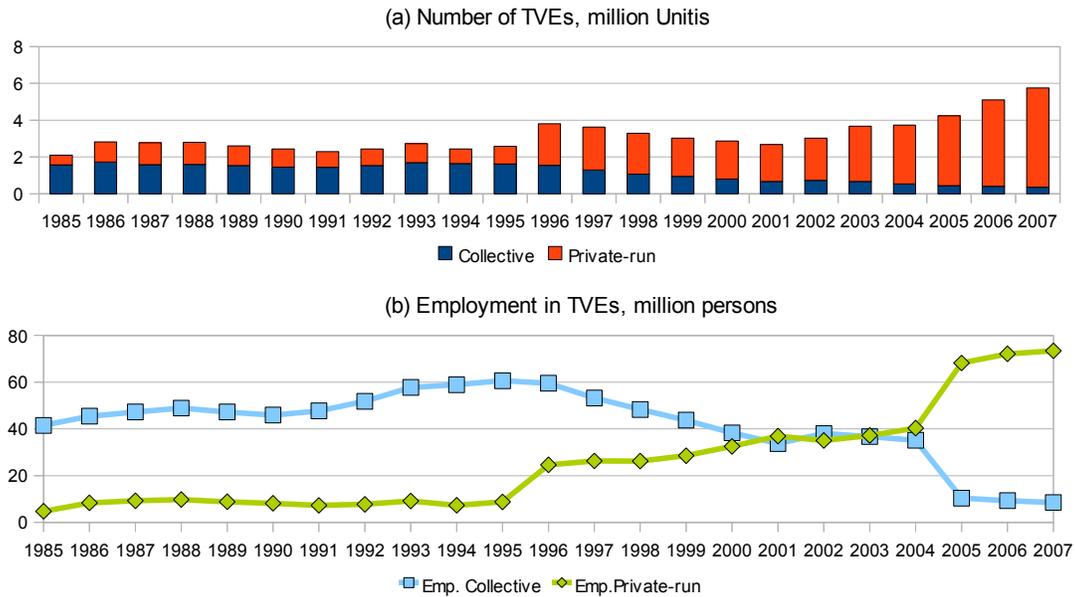
that of SOEs. The labor force utilized by TVE sector increased from 28.2 million in 1978 to 79.3 million in 1986, and 138.7 million in 2004 (CSY, 2008). However, since the ambiguous statistics accumulation by central statistic bureau, much of the output and labor participation were realized through private TVEs instead of public or collective TVEs.⁷

A glance at Figure 7 also reveals that private TVEs absolutely dominated the total pool of TVEs even beginning from 1985. Before mid-1990s, there were more collective or public TVEs than private-run TVEs. After 1996, the private-run TVEs outnumbered the collective TVEs, and Huang (2008) even has assumed every single new entrant after that time was a private firm. Regarding to the employment, private TVEs were individually smaller than the collective TVEs, which are consistent with the arguments of Oi et al. (1999) and Naughton et al. (2007). After 2005, with the

⁷The number of private TVEs are overstated, the estimate result includes the gross output by those legal-person shareholding firms that are still substantially owned by the state or local governments. It includes those firms that are owned or run by government officials and their relatives, as we have stated in the Figure 6.

introduction of new statistics methods and the decreasing significance of collective TVEs, the static advantage of collective TVEs quickly eroded as private TVEs accumulated growth rate.

Figure 7: Ownership composition of TVEs, 1985-2007



Note 1. Due to different data sources, the statistics in 2005 significantly changes its value.

2. Statistics on household business are excluded here due to their small scale of business.

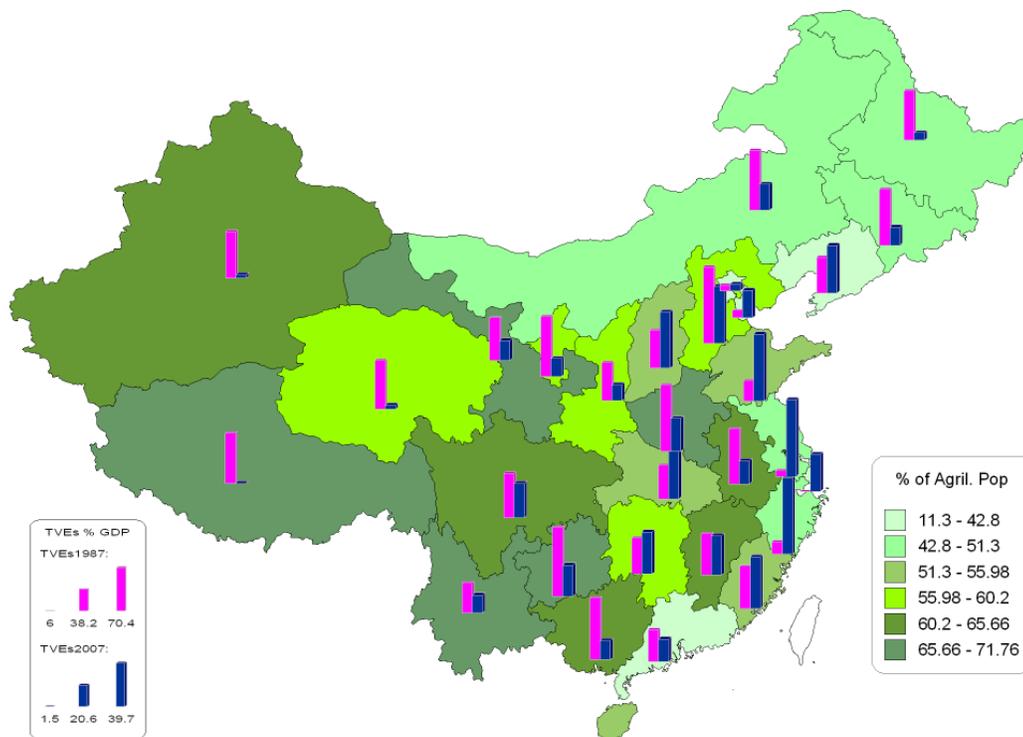
Source: Data are from the Ministry of Agriculture, 2008;

China Township and village Enterprises and Agribusiness Yearbook, 2008.

Geographical distribution of TVEs. Figure 8 shows exactly the trend that the importance of TVEs is decreasing. As in 1987, the average of the 10 provinces with the largest shares of private TVEs is 56.8%, compared with 21.4% for the bottom 10 provinces. However, in 2007, 20 years later, the average of the 10 provinces with largest shares of private TVEs is 10.4% while 6.5% for the bottom 10 provinces. In 1987, the provinces listed in the top 10 had a smaller GDP and they were far more agricultural; in 2007, the provinces listed in the top had a larger GDP, and they were industrial and much more developed. The reason why the shares of TVEs are decreasing comes from several resources: (1) due to administrative transformation in rural area, many townships and counties were transformed to districts or cities; (2) many TVEs were incorporated into big business groups or SOEs to guarantee the scale of economy and reinforce the local competitive power, especially in poor regions (west or north). Obviously, in the area of rich regions, the share of TVEs still account for the large part of Gross output value. In this sense, it is nowadays much

more meaningful to study the development and structure of TVEs in rich regions of China than to study that in poor region.

Figure 8: Geographical distribution 1987 and 2007



Source: own illustration.

The development of TVEs is an organizational response to both the macroeconomic environment and local condition. When we look back to the Figure 8 in the light of the involvement of local governments' behavior toward TVEs, we find that the contribution of TVEs to gross output production in coastal area is much higher than those in inner area. In principal, with the help of local government, most of TVEs in coastal area have successfully changed to private ownership or have kept ambiguous ownership with parts of government share, they have attracted more foreign investment fund or developed dramatically in a large and growing market. On the contrary, TVEs in middle or western area have been gradually absorbed into local large SOEs, or even went to bankruptcy due to strong competition in the market. Therefore, it is interesting to investigate the models of TVEs in coastal area with respect of the local government's participation in local business. There are generally three TVE models which demonstrate the differentiations among different locations in coastal area. *Sunan* model refers to the TVE governance in southern

Jiangsu province. TVEs in this area were established originally to work on subcontract orders from SOEs in Shanghai, which were very proximately located. At the beginning, TVEs in this region were characteristically large-scale collective processing industries, and local government officials played a significant role in charge of the firms' daily operations, helped to obtain credit from banks, to reserve land to build factories or to create access to raw materials and marketing channels. Even after TVEs have been privatized nowadays, the involvement of local government in business can still be well recognized.

Guangdong Model exhibits the feature of TVE development in the Pearl River Delta area, which is clustered in southeast China. A deep direct involvement of community governments is still widely observed in this economic Model. Thanks to its location advantage, TVEs in this area successfully have attracted massive foreign direct investments, especially from Hongkong, Taiwan and other southeast Asian countries. Thus the *Guangdong* model is characterized by a dominant community government presence together with heavy FDI participation. By contrast, *Wenzhou* model shows the fewest involvement from local governments, many business are driven by private entrepreneurs. The important role of local government played is to provide a favorable business environment, particularly protection. Before the private firms is legalized in China, community government in Wenzhou area helped to protect the private business by forming cooperative enterprises or share-holding enterprises in order to legitimate a "socialist enterprise" under the legal framework at that time.

3 Agribusiness in rural area

3.1 General Development of Agribusiness

China's 1.3 billion population is growing by approximately 10 million people a year (CSY, 2009). With this number and a booming economy, China is one of the world's largest consumers of food. The country's annual food consumption is staggering, every year the whole country consumes almost 51% of world's production of pork, 33% of rice, 19% of ice cream, 18% of poultry and 12% of beef. Compared to 80% of the food consumed in Western nations is processed meat, in China it is only 30% (Jia, 2000). However, the market for processed food is growing, and the central government calls for the development of agribusiness sector as well.

The Chinese agribusiness sector, which includes production, food processing and

the retail/food service sector, is among one of the fastest developing sectors. Although there is no official statistics about the economic contribution of agribusiness to the total economy as a whole, we collect the statistics in different sectors to give an overview, which is made up as follows:

- Farm production: agricultural output grows more slowly than output of other economic sectors, accounting only 11.3% of GDP, contributing only 0.4% of the 11.9% economic growth. In 2007, the total output value was 2809.5 billion RMB with 300 million farmers and employees working in this sector.

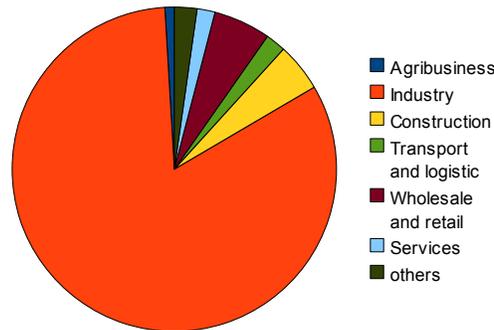
- Food processing: there are in 2007 approximately 29,206 large-scale food manufacturers and processors with total annual sales revenues 2797.7 billion RMB, which accounted for 7% of the total annual sales revenues among all the industry sectors as a whole. This number does not include many smaller operations under the annual revenues 5 million RMB. Unofficial estimates suggest the total number is closer to 900,000 food processing ventures in China (Gale and Collender, 2006), from family-owned operations to multinational corporations.

- Retail and food service. Changing retail sales patterns are conducive to increased processed foods - traditional street markets are declining while hypermarkets and supermarkets (where 46% of processed foods are sold) are expanding. Thriving catering firms and the ballooning restaurant sector are also increasing demand for high-value processed items.

- Problems of Agribusiness sector. (1) Low level of overall development. Only six provinces and cities have an agricultural industry output value/agricultural value ratio greater than 1:1, and even 15 provinces hold the ratio below 0.5:1. (2) Uneven distribution. As for the food industry, the eastern, central and western parts' shares of the total value are respectively, 49%, 33%, 18% (Jia, 2000). (3) Small-scale, repetitive operations. Almost in every sector of agribusiness, there exists excessive number of small-operations engaged in similar activities competing for the resources.

In rural area, the composition of agribusiness TVEs is extensively unbalanced. Agriculture-related TVEs only account for a small part, no more than 1% of total TVEs output. Figure 9 shows the industrial composition of TVEs with respect to the gross output value in 2007. Heavy industry and construction account for a large part of the TVEs. It seems relatively minor important of agriculture-related sector to other rural enterprises.

Figure 9: Composition of TVEs Gross output value, 2007



Source: based on *China TVEs and Agribusiness Statistics Yearbook, 2008*.

It is necessary to note that agribusiness firms, including all the agricultural processing firms are not the leading industry in countryside. TVEs mostly serve for non-agriculture industry such as construction, chemistry and textiles, rather, and TVEs share a secondary industrial system, having almost the same basic subsectoral structure as that of the whole national economy. In 2007, the agribusiness firms accounted for 7% of agricultural GDP (CSY, 2008). Since the Communist Party encourages to develop agribusiness in rural area, more and more firms are emerging to engage in high value production, and offer new opportunities for farmers to increase productivity and income given the restricted land resources.

National policies have been issued to support the local agribusiness firms. On the one hand, those firms are allowed to get exemption or reduction on value-added tax, get rebates on export taxes and enjoy other privileges to avoid special agricultural taxes. Discount loans for export-oriented products and special financial support are also applied to these agribusiness firms⁸. On the other hand, the central government views large-scale agribusiness as an efficient solution to help the interior of the country catch up to the fast-developed economies of China's eastern coast⁹. Many large-scale agribusiness companies or agribusiness SOEs are able to receive financial allowances for developing new products and implementing new processing lines¹⁰.

Despite the support from government, the development pace for agribusiness is very slow in rural China. Table 1 illustrates the percent of agribusiness TVEs to the

⁸Details see official document named *Supporting Guidelines on leading Agribusiness Firms*, issued in Nov, 2000.

⁹Details see <http://www.china-briefing.com>

¹⁰See details for Huijie Zhang (2005).

whole TVEs in the light of firm numbers, employee numbers and gross output in 2008. The number of agribusiness TVEs account for 0.09% of that of whole TVEs, the number of employee constitutes only 2% of that of whole TVEs and with gross output of 5%.

Table 1: The percent of Agribusiness TVEs to whole TVEs, amount, employee and gross output.

| Sub-branch | Number (%) | Employee (%) | Gross Output (%) |
|--|-------------------|---------------|------------------|
| Farm and Sideline Food Processing | 0.060 | 1.198 | 3.340 |
| Cereal Grain Grinding | 0.012 | 0.126 | 0.458 |
| Forage Processing | 0.009 | 0.143 | 0.512 |
| Plant Oil Processing | 0.005 | 0.099 | 0.445 |
| Sugar Making | 0.001 | 0.025 | 0.057 |
| Slaughtering and Meat Processing | 0.008 | 0.226 | 0.599 |
| processing of aquatic products | 0.008 | 0.208 | 0.538 |
| Vegetable and Fruit Processing | 0.007 | 0.165 | 0.299 |
| Other Agri Processing | 0.010 | 0.206 | 0.432 |
| Food Manufacturing | 0.019 | 0.531 | 0.999 |
| Bakery Products | 0.002 | 0.049 | 0.087 |
| Candy, Chocolate and Sweetmeat | 0.002 | 0.058 | 0.092 |
| Convenient Food | 0.001 | 0.059 | 0.085 |
| Liquid Milk and Dairy Products | 0.002 | 0.059 | 0.174 |
| Canned Food Manufacturing | 0.002 | 0.074 | 0.087 |
| Condiment and Fermented Products | 0.002 | 0.063 | 0.136 |
| Other Food Manufacturing | 0.007 | 0.170 | 0.337 |
| Beverage Manufacturing | 0.011 | 0.278 | 0.566 |
| Liquor Brewing | 0.006 | 0.178 | 0.336 |
| Soft Beverage Manufacturing | 0.005 | 0.100 | 0.230 |
| Total | 23,908,892 | 15,089 | 290,084 |

1. Calculated based on the China statistic Yearbook of Township and village Enterprises, 2008.

2. The basic value of gross output is 1 million yuan, RMB

3. On Feb 21th, 2010 the currency exchange rate between Euro and RMB Yuan is 1 Euro=9.28 RMB

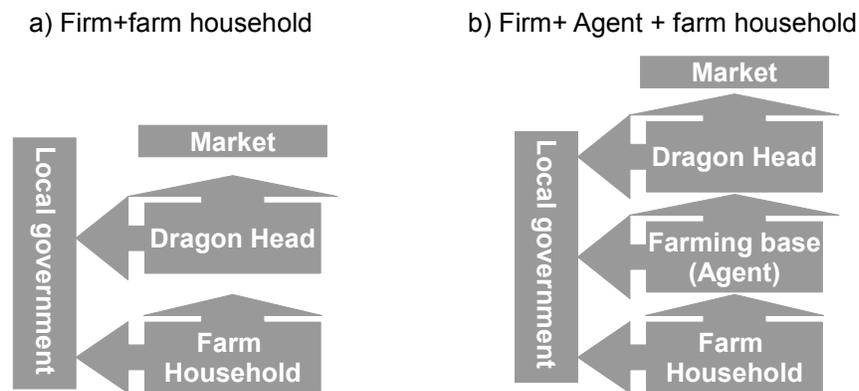
3.2 Dragonhead Agribusiness Firms

The structure between farmers and agribusiness firms has distinctive Chinese characteristics. With the forms of shareholding contract, farmers and agribusiness are formed mutually as "Firm + farm households", "Firm + farming base + farm households", "Firm + Agent + farm households" and "Firm + village government + farm households". In order to procure essential raw materials, most agribusiness firms provide a wide range of extension services to farmers, and they always sign mutual contracts with local bureaus, especially at the level of village, to get better access to enough products input.

Beginning from mid-1990s, Chinese agriculture officials have promoted a "companies leading households" policy to encourage farmers into the commercial food sector

and raise their incomes. This strategy emphasizes vertical links between farmers and processing and marketing companies to strengthen farmers' connections with the real business units and market. "Dragon head" or "leading" companies are selected or established by government authorities in localities taking the important role by contracting with farmers to procure productions with specific attributes. The "dragonhead company", for example, provides seed, operating loans, fertilizer and other inputs, and technical expertise. The farmers may provide the agricultural products or work in the agricultural base set by companies under the mutual contract. Vertical integration and contracting are expected to grow in China since backyard production will continue to exit. The system of contractual relationships ensures a supply of agricultural products, and decreases the volatility in raw material costs for agribusiness firms, and rewards the risks shared by processors and producers over the long term (Huijie Zhang, 2005). The companies may contract with farm households in villages and townships to procure specific product varieties at a premium over open-market prices. However, since the mutual contract is negotiated with the help of local governments, the input/output price may be distorted.

Figure 10: Style models of dragon head companies with local farmers



Source: own illustration

It seems China's "companies leading households" model resembles contract production common in U.S. agriculture(Gale, 2003)¹¹. However, in China, local government plays a much greater role. Large *Dragonhead* Companies are supported by the local governments no matter they are privately owned or joint ventures with foreign companies. Therefore, the ownership structure of those companies or business groups is ambiguous, but many seem to be spinoffs of local grain bureaus and other

¹¹Amber Waves, a journal by USDA, June 2003

Table 2: Government bodies in responsible for agribusiness sector.

| Abb | Agency | Main Duty |
|-------|---|--|
| MoA | Ministry of Agriculture | Draft and enforce laws, regulations and policies, Food quality/safety issues |
| SALM | State Administration of Land Management | Certificates land allowance. |
| SEPA | State Environmental Protection Administration | Formulate policies, plans on environment pollutions, issues certificates. |
| MoH | Ministry of Health | Food hygiene issues on processed food |
| SAIC | State Administration for Industry and Commerce | Monitors and manages whole sale and retail market places |
| MLI | Ministry of Light Industry | Regulations on food processing industry |
| SMC | Supply and Marketing Cooperatives | Supply and market target |
| SFDA | State Food and Drugs Administration | Food safety, health products, food examination and evaluation |
| AQSIQ | State Administration for Quality Supervision, Inspection and Quarantine | Food safety, food inspection |

Source: Own illustration.

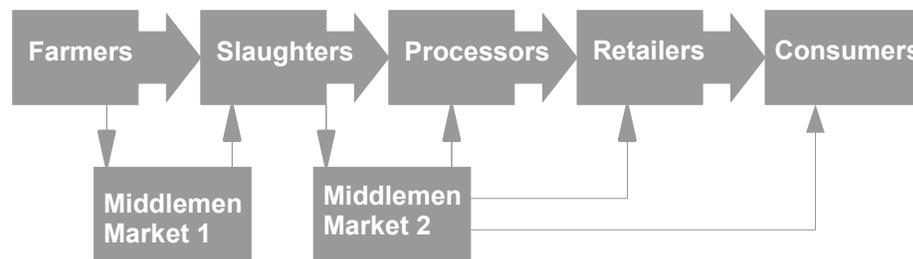
government marketing entities(Gale, 2003). The government may play as a shareholder, may direct the business plan, or provide land, facilities or help to access to credit and subsidiaries. Since government always play as a middleman between leading agribusiness companies and farmers, the rent-seeking problem which appeared in the initial TVEs would still exist in the agribusiness sector nowadays.

In principal, there are different government bodies and local offices referred in Table 2 to take in charge of responsibility on regulating and inspecting the agribusiness sector. Although there have been some reforms by amalgamating or abolishing some of the repeated political bodies, destructive competition and replication activities still remain. As jurisdictional power and personal welfare benefits can be generated from intervention over industry sectors, those government bodies as well as local government of different bureaus compete with each other on input and market distribution. Those so-called leading agribusiness companies may collude with different bureaus for essential factors, cheaper inputs and better market distributions.

3.3 Commercialized Agribusiness Industry

While it is widely recognized that the agribusiness sector in China would come to meet great opportunities presented by consumer-driven agriculture, great challenges remain in commercializing the country's agribusiness industry. China has country-wide small scale of cropland farming operations, and around 60% of the country's livestock, like chickens, pigs and cattle are raised on small farms (CSY, 2009). Many backyard farmers in rural areas raise their livestock in small courtyard farms. Labor costs are almost zero due to family support. The country's collective land ownership bans land sales and makes it difficult for farmers to rent land, presenting an obstacle to increasing farm size and investing in mechanized equipment. Therefore, the national policy is supporting large scale enterprises and encouraging small scale farmers to operate as a collective large-scale entities. Along the supply value chain from farmers to the consumers, the distribution of value added to the products as it leaves the farm is lost. Take the livestock for example, normally Figure 11 illustrates the supply value chain of livestock in China, which is more or less the same as that in western countries. However, while in the United States the biggest share of the retail value is accounted for by the wholesale-to-retail spread at 62%, in China the middleman market share of the retail value is accounted for 64%, which potentially announces a large profit in the middleman market.

Figure 11: China's livestock supply chain



Source: based on ,2008.

As more and more foreign invested supermarkets and restaurants flush into China, conflicts have arisen between suppliers and the end players of value chain like food retails and restaurants, since Chinese farmers are unaccustomed to producing goods to such exacting standards. Suppliers to supermarkets must procure goods that meet standards for size, quality, color, and chemical residues. The large number of small farmers in China makes it difficult to monitor chemical and seed

use to enforce green food standards, ensure sanitation in slaughter of livestock, and certify non-genetically modified food products.

China's food value chain has developed the most rapidly in its prosperous coastal areas, while change has been slower in central and western cities and in its vast network of rural towns and villages. Foreign restaurant and supermarket chains have entered first-, second- and third tier cities, drawn by booming residents' purchasing power and looser business restrictions on foreign investments. Still, Chinese supermarket chains have opened stores in many small towns and villages and are planning further expansion. If consumers in rural areas and inland cities imitate the food consumption habits of coastal cities, the impacts on China's food sector and its agricultural trade could be substantial.

4 Conclusion

As rural development in China progresses, we provide a brief overview of the institutional background of rural firms and agribusiness sector in China, which explores how institutional and policy reforms and micro/macro settings impact rural industry and, more broadly, rural development. We explain that agribusiness sector is only a tiny part of the rural industry as a whole, however, political agencies help and reinforce the development of agribusiness sector. We investigate the diverse agents, policies, and institutions associated with the production, processing, and distribution of food and agricultural products in China. We argue that until now, success in this sector has been contingent on consistency in institutional policy and strong support at all levels of government from the national to the local.

The pervasive influence of the State and national policies in agriculture makes the sector ideal for short- to medium-term economic development, however, all the policies are initiated and directed by institutional policy—not by the marketplace. With proper planning, an increasingly sophisticated and commercialized farm sector including husbandry may come to play a greater role in the economy of rural China.

As China's political system grows increasingly decentralized, provincial and local officials have taken a more important role in the economic planning of the farming and agribusiness sector. Increased autonomy of local agencies strengthens the relationship between local governments and local agribusiness industry. However, even the local states put the focus on developing large-scale agribusiness groups and

companies, leaving the limited space for small and medium-scale firms to expand. The government may also need to consider helping and promoting a dispersed and small-scale food manufacturing and processing sector.

We again emphasize the importance of effective vertical interactions across government agencies and state and private producers. Besides, horizontal linkages among competing producers should also be strengthened to expand the information exchange of the market. Consensus on which agencies and jurisdictions should initiate and manage rural development programs is as important as deciding what new programs, policies, and regulations should be introduced. We tentatively dispute importance of the large and overly bureaucratic agricultural departments in rural area, although the institutional support and guidance is crucial for the rural development. We will investigate the role of local bureaus in the economic performance of rural firms, especially agribusiness firms in the following research attempts.

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CHAPTER 2
THEORIES OF FIRM-GOVERNMENT RELATIONSHIP IN RURAL CHINA

Jiangping Han

Abstract

This paper discusses the theoretical models on firm-government relationship in rural China. Many microeconomics models were developed based on the amazing development of TVEs (Township and village enterprises) decades ago, but may not be suitable for the situation in modern China. We incorporate the perspective of social networks and use it as an essential factor to explain firm-government relationship. We then further show a simple model to describe the how the firm-government relationship influences firm's investment plan and welfare functions in rural China.

Key words: Firm-government relationship, China

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1 Introduction

Although China's political system grows increasingly decentralized, government-firm relationship is considered as the most important microeconomic relationship in current economy status, especially the central government still emphasizes the socialism as national ideology (Roland, 2000). As Powell (1990) has suggested, institutional transition presents the process and issues of how the institutions matter, how the institutions change, under what circumstances, to what extent and in what ways. The institutional transition in China symbolizes the change of society and economy. After studying the case of China, Nee (1996) has argued that the explanatory account of the dynamics of institutional change should be stemmed from organizational structures and informal institutions, specifically, the structural inertia facing organizational actors and the emergence of oppositional networks and norms would limit the scope and direction of transformative change.

To examine the institutional transition in China, it is better to investigate from two different mechanisms, institutional environment as the macro perspective and institutional arrangement as the micro perspective. From the macro perspective, we demonstrate the fundamental incentives of states, *Market Preserving Federalism, Chinese Style (MPFCS)* initiated by Weingast and Qian (1996), have observed the institutional framework condition implying the competition among local governments. *MPFCS* serves as the main macro mechanism of China's institutional transition. From the micro perspective, the organizational structure in local area is highlighted. Especially, the structural mechanisms of hierarchically organized government, and the enterprises within social institutions, which Oi (1992) and Walder (1995) have viewed as *Local Corporatism* are mostly strengthened. To converge the macro and micro perspectives we theoretically study the relationship between firms and local governments. In China, there exist ambiguous and multiple property forms where private property rights are often poorly specified, which implies the strong government involvement in the transitional economy. Since a bundle of informal and formal rules may govern the use of resources, we try to figure out the role of informal rules reflecting the embeddedness and social network between local officials and local firms in the framework of rural community.

"Alternative types of inter-organizational relations have a more consistent impact on firm performance but this has yet to be demonstrated theoretically and empirically" (Mizruchi and Galaskiewicz., 1994). Taking this comment as a departure point, we suggest transitional economy like China may present a promising context

in which exploring inter-firm and firm-government relationship would be an interesting topic. To be specifically, we put the focus on *Township and Village Enterprises* (TVEs), not only they are the most dynamic part in China's economy development, but also they realize a higher economic efficiency when compared to conventional public enterprises controlled by the national government (Weitzman and Xu, 1994). The successful development of TVEs and their particular relations with local officials have been extensively studied in the past decades. TVE is considered as an innovative organization form in rural China.

Since government and firms may have different goals towards economic performance, firms' managers pursue economic efficiency while politicians intervene in firms to achieve their own political return maximization. Roland (2000), Qian and Roland (1998) differentiated between the different behaviors of local and central governments. Refer to Roland's argument, the central government can not commit to refrain from preying on private enterprises, thus the local government controlled firms are more profitable than private firms, when the local governments are able to balance the power of central government. He distinguished TVEs as local government controlled firms, and then concluded the positive effect of TVEs has played on performance; in other theoretical models, the relations between local governments and local firms are also analyzed (Oi et al., 1999; Che, 2002; Blecher, 1991; Lin, 1995; Yao, 2004), they discussed not only the positive role of local governments' participation in firms' business activities, but also the negative role of local government played in firms' economic performance.

Although various scholars emphasized the importance of government-firm relations as a driving factor of firms' economic performance in China, there hardly exists a common consistent approach analyzing the role of these relations in firms' economic performance. Especially it seems a theoretical discussion on particular firm-government relationship in modern China is missing. In this paper, we would like to throw a brief survey on theoretical models which investigate the firm-government relationship in rural China, and then we develop a simple model to incorporate the relational parameter in firm's welfare and profit functions to study thoroughly how the relations with local officials would influence firm performance.

2 Theories of Firm-Government Relationship

2.1 Public TVEs and local government

One theoretical approach has emphasized the role of local governments in terms of the property rights relationship. The viewpoints in this regard were based on the development of public TVEs in 1980s due to the fiscal decentralization and the local governments were entitled to take over the economic issues in their own jurisdiction. According to this view, rural governments resembled an industrial corporation where revenue generation was paramount and the entire local government operated as an industrial firm (Walder, 1995). Weitzman and Xu (1994) argued that the economic success of TVEs has come from the specific internal institutional form corresponding to social and culture background of local communities, which facilitate cooperation through implicit contracts among community members. Formally, they analyzed the performance of TVEs in a game-theoretical framework corresponding to a repeated non-cooperative prisoner dilemma game allowing for cooperation via reputation mechanisms. Holding the same argument, Oi et al. (1999) suggested ‘collectively owned industrial enterprises’ was a kind of local government entrepreneurship serving for both the political and economic interests of local cadres. Similar themes were also clustered under the arguments of *Local Corporatism* by many other researchers (Lin, 1995).

Varieties of corporatism defined the role of local officials as entrepreneurial and developmental, since in this form, the community were able to generate more revenues and created more employment opportunities (Blecher, 1991). TVEs therefore were considered as the second-best ownership solution. Che (2002) set up a mathematical model to emphasize the positive role of local government played in firm’s production. He used $R = f(a, x)$, where R was the investment return, a was managerial effort and x was the number of excess workers hired to reach the goal of investment. From another perspective, he employed both entrepreneurial factors and non-entrepreneurial factors in an effort function of public TVEs. He further assumed utility function of local officials as $U(x, \theta)$, where x had the same meaning as that above, and θ represented the political attitudes that political officials held. Accordingly, he distinguished θ_l as pro-politics government agency and θ_h as pro-business government agency. When considering both the returns of investment and utility, he concluded if the public TVEs were controlled by pro-business government agency, the benefits would dominate these of private ownership.

Transaction cost economy school has supported the argument that resource control of local government reduced the transaction cost of firm's business behavior. On the contrary, the theory of corruption economy has tentatively implied that if the government can regulate entry into economic activity, it would directly cause the political corruption. Let us consider a simple model to clarify this situation. We assume the government control the market access by issuing or with-holding licenses, and he stands in the monopoly position from which he can extract bribes in exchange of licenses. Let λ be the number of licenses issued and let $b(\lambda)$ denote the value to a would-be manager of obtaining a license where $b' = \partial(b)/\partial\lambda < 0$, furthermore we assume $b(\lambda_F) = 0$ where λ_F corresponds to the number of firms that would enter under free competition. A rent-seeking officials will be able to maximize bribe revenues with $B(\lambda) = \lambda b(\lambda)$ and issues $\lambda_L = -b(\lambda)/b'(\lambda)$. At equilibrium, $\lambda_L < \lambda_F$, entry restrictions are thus erected in order to generate bribes. By extracting bribes from the firms in a competitive industry, the most inefficient firms are induced to exit because the cost of production is pushed up. From this point of view, the market access control of local government incurs the corruption of local officials, but will in return, compel the inefficient firms. This principle generates the idea that an appropriate number of politically connected firms in local area can not stop political corruption, but will still yield efficient outcome.

Another argument views the firm-government relationship from the social and cultural perspective. It is well known that China's culture system is engraved by the values of collectivism and family. The value of family is reflected in both the spirit of family-based entrepreneurship and the prevalence of private network, which is composed of family, kinship and other personal ties for exchange of particular favors (the Chinese word *guanxi* is to describe this kind of network). The argument suggested that local government-firm networks have already formed, social reputation mechanism has been resulted from the embeddedness of government in social network relations with firm management (Cull and Xu, 2005; Chen, 2000; Li, 2005). The view of political economy is also clarified to show the positive role of local governments. Some explained TVEs as the second-best political solution (Naughton, 1994; Nee and Su, 1996). They further mentioned that the Chinese communist Party would support TVEs because the name of TVEs would be regarded as the best way to develop the economy without jeopardizing public ownership and state control. The newly empowered local governments would thus be strongly supportive to obey policies issued by central government. Blecher and Shue (1996) following the "path dependence" school have stated the same argument. As the prime ex-

planatory factors were the continuity of leadership across the centuries, there was dependency view for local leadership to develop a broad based comprehensive development plan which strictly follows the rule of "public-owned" industry issued by the central government.

2.2 Private TVEs and local government

Che (2002)'s result was straightforward under the framework of *Local Corporatism* in which local governments were thought to align the interests of local community and to be productive in public TVEs. However, the resources available to the local community vary enormously among different regions, and this directly affects the behavior of local governments. The nature of local officials can be more predatory than entrepreneurial. Yao (2004) also challenged the theories of local corporatism, he mentioned, if local government failed to commit in the community, neither private nor public enterprises can develop well.

Sargeson and Zhang (1999) also challenged the positive view of "*Local Corporatism*" with field study in coastal area of China. Their study has shown that the lack of accountability and commitment from local government would induce the inefficiency of local corporatism. They criticized the creation of "local corporatism" was an obscure mixture which conflates the interest of local governments, individual officials and the members of local communities, in the framework of pursuit on individual profit maximization. The local officials would put their own objectives not only above the aims of the central government but also above those of the local community. For example, local officials may force TVEs to invest in many loss-making political projects to advance the political career of themselves (Chen, 2000). Instead of fostering economic development in the local community, the officials would behave predatory on local firms for their personal purposes.

The same arguments were presented by Bai et al. (2001) and Zhang et al. (2004). They noted that the government was always supreme and sought to control everything like appointing the enterprise managers, determining the production quotas and investment levels. Decision-making powers of the local firms were thus curtailed in favor of those of the local government. Market orientation was in fact replaced by government orientation. TVEs were indeed not private enterprise in disguise, and they were genuinely owned by local governments that exercised control rights, therefore TVEs had inherent inefficiency like all public ownership.

When more and more private TVEs went into the business world, the drawbacks

of public TVEs were gradually realized by many researchers and the real relations between local governments and local firms have changed dramatically as well. On the one hand, the central government encourages to build new corporate structures in order to further block political interventions in the decision making process.¹ On the other hand, the township and village governments are not allowed to become involved in investment and business activities as an owner of the collective economy. Thus, the relation between local governments and enterprises is not restricted to one-directional public ownership, but developed to multi-directional partnership ownership. Managers many seek alliances with government officials to set up a project or initiate an investment plan through the ways of joint project partnership, joint contract. Normally, the government could help to get easily to credit support and to resources, or treat firms with other favorable local policies. With the promotion of share-holding in the latter part of the 1990s, it has become clear that local officials in a number of areas have used their official positions to acquire the major benefits for themselves, families and associates. Many of them may get possession of individual shares in the firm. Lin and Chen (2000) in their study of Daqiuzhuang have revealed the networks between the local officials operating in a more predatory manner. They showed how the share-holding system has been exploited to transfer the local enterprise into private officials' hands.

3 F-G relationship as network perspective

3.1 Social network perspective

Based on the two referred prominent mechanisms which ambiguously describes the firm-government relations, we provide a new mechanism, social network, which clearly illustrates the firm-government relations and is quite consistent with the current experience in China. Social network is not a new concept in China. In *Local Corporatism*, we have referred *Guanxi* as another Chinese name of personal relations, which are composed of more family members, schoolmates and close friends, the propensity to form relationships between those actors based on common background, i.e., ancestral origin and classmate. Thus, *Guanxi* base imposes clear boundaries on network membership, and limits the pool of potential members to those who meet criteria for being a member of a particular *Guanxi* cluster.

¹Here it mainly refers to shareholder meetings, corporate boards and managers, according to the Company Law passed in 1994.

Different from the personal social capital relation of *Guanxi*, we perceive the firm-government relation as a specific case of inter-organization network from social network perspective. The core idea is to analyze the firms and local governments as agents who strategically manage their diverse network connections to reduce uncertainties arising from their pursuit of organizational advantage (Mizruchi and Galaskiewicz., 1994). Social network analysis is originally defined as a resource embedded in social relations, that could facilitate collective action, lead to alternative forms of social capital analyzed as network closure (Coleman, 1988) or structural holes (Burt, 1992). Burt has focused traditionally on the absence and presence of links among the alters of a specific ego in the network. From his perspective, an actor or a dyad in a network can derive control benefits from being situated between two other organizational entities. Actors or inter-organizational relations in this role can generate themselves benefits which can translate into favorable conditions in their exchanges.

We believe that the social capital that managers use inherently reflect their background and experience. As a result, the social ties, contacts and networks are able to affect firms' performance. This relationship thus leads us to investigate the links between social capital and firm performance. Most scholars agree that social capital embodied in managerial ties and network matters (Burt, 1997; Granovetter, 1985), many studies incorporate social capital and social networks as independent variables that affect entrepreneur's actions and its outcomes (Hoang and Antoncic, 2003). Even in the case of China, literature has demonstrated the managerial ties are beneficial in a transition economy. Peng (2004) has focused on the economic payoff of kinship networks in the context of China's rural industrialization to argue that kin solidarity and kin trust played an important role in protecting the property rights of private entrepreneurs and reducing transaction costs during the early stages of market reform, when formal property rights laws were ineffective and market institutions underdeveloped. Keister (1998) proposed that interlocking directorates in the business groups in China would improve communication and firms' access to scarce capital when markets were beginning to develop, and thus improved firm performance.

Some scholars defined the networks of F-G relations as politically connected relations. In particular, political embeddedness in business and its incentive for firms have been recently recognized among economists. Shleifer and Vishny (1994) firstly discussed politician themselves would extract at least some of the rents generated by connections and firm performance value would be enhanced only when the marginal

benefits of the connection outweighed their marginal costs. Faccio (2006) defined a company as politically connected if one of its large shareholders or top directors was a member of parliament, a minister, or was closely related to a top politician or party. He found only a small portion of world's market capitalization was politically connected firms. He analyzed the relations between stock prices and the politics-business ties in the board and finds different relationship between business people and politicians had different value. For the specific Chinese politics-business relation case, Li et al. (2008) defined the role of affiliation with their ruling Communist Party as the symbol of politically connected business in the operation of firms in China. Empirically, they found the Party membership had a positive effect on the firm's performance when human capital and other relevant variables were controlled. Moreover, they found Party membership helps private entrepreneurs to obtain loans from banks or other state institutions and afforded them more preferential treatment in the legal system. Furthermore, the sources of politics-business relation value were taken the forms of preferential treatment by government owned enterprises (Backman, 1999), lighter taxation, preferential treatment in competition for government contract, relaxed regulatory conditions (Stigler, 1971; Agrawal and Koober, 2001) and access to resources such as bank loans (Faccio, 2006; Bai et al., 2006) and raw materials (Li, 2005).

3.2 Firm-government relations in TVEs' case

If we consider a rural firm which is supposed to start an investment plan, there are two types of costs associated with the investment, start investment costs and raw-material, labor/energy costs. Investment costs are incurred before the plan is put into production, and other input costs are incurred afterwards. Since TVE limit in devoting funds to the *ex-ante* investment, he turns to local government officials or through personal relations to persuade the officials who have control in accessing to financial funds to allocate the credits. However, due to the strict supervision from the government audit agencies and potential punishments from the higher levels of government, local officials may publicly refuse to cooperate but privately transfer the credits to the firms who have close political relationship.

Many researches suggest the firm's external procurement ability should be incorporated into firm's production function (Guo,2009; Tian, 2002), on the contrary, we consider the manager's network relation with local officials as an exogenous cost to production function. Although the relational cost is an important input to firm's

performance, the social ties with local officials are very personal; besides, if a firm invests in building the good relations with local officials, he wastes time, energy and money, which sometimes may not do anything helpful to normal production. In this circumstance, we distinguish the external relations with political officials as a *ex-ante* cost.

We would like to provide several case studies which characterize the interactive behavior between local governments and TVEs.

Case 1: An entrepreneur A from a richer county J of Zhejiang province in China considers setting up an extra tee processing plant in a local community of county Z where cheaper labor, sufficient tee plants and tax advantage for new enterprises are available, since county B has just opened a science park to attract more investments. The manager A has personal relations with one of the senior officials from county government Z via his relatives, the manager A invites local officials, bank managers and science park leaders to a dinner, then the investment plan is settled and loans from the bank are also arranged. In this case, manager A spends money on investing in strengthening the relations to help with his business. He will afterwards in private send gifts or other personal benefits to the officials who have done the favor. However, he does not have to share the revenue with those officials, and he can enjoy all the profits himself.

Case 2: An entrepreneur B also initiates an investment plan as manager A, but he has no close and direct relationship with local officials. Since county Z is a newly developing county and welcomes varieties of investments in local area, they go to negotiate on the project. The local government guarantees supply of water and energy to new plan, and the firm invests some money in transforming an old local building into new plant. The subsidiary company of local government is allowed to keep 15% shares. Therefore, the local government and private entrepreneurs are involved in new plant creation process. The division of profit is also negotiated. We consider the partnership between TVE and local government as joint ownership. The manager of TVEs spend some money on relational cost, however, it is obviously fewer than that of case 1.

Case 3: The private entrepreneur C initiates an investment plan as manager A and B. He neither has direct relationship with local officials nor prepares to share the profits with local governments. He totally runs the firm on his own. However, he has restricted access to financial supports and to other important resources. The local government may exert an expected extra fee rate in order to distribute some resources

to firm. In this case, the manager spend even less money on relational cost, however, his production decision is subjected to maximization of local government.

4 Firm-Government Relation: a bilateral Model

We intend to propose a theoretical model to discuss the business cases referred above, considering firm-government relationship influences the investment plan and firm's profit in rural China. There are three types of firm-government relations discussed in our model: joint ownership, which suggests the both local government and firm claim to residual (case 2); two private ownerships, in which one has close contact with local cadre (case 1), and the the other has no contact with local cadre (case 3). The model tries to capture the important role played by local governments in local firm's business and credit-seeking activities. Based on the economic model of Lu (2007) and other economists, we think a bilateral monopoly situation, the entrepreneur of local firm F and a local rural government G may involve in issuing a project. We suggest the project requires two inputs, one is the *ex-ante* investment plan I , which is only devoted by the entrepreneur F , the other is the production input K , which is procured through market, or more specifically, through government controlled resource market. The firm's investment plan is based on his connection with local bureaus, let us define $C(I)$ as the cost of *ex-ante* investment, γ as the relational parameter of firm-government relation, we consequently assume $C(I) = I^\gamma$, where $\gamma_1 > \gamma_2 > \gamma_3 > 1$. Since relational ability is considered as the exogenous variable of firm's production function, the more relational contacts the firm manager has, the more costs he would burden². Furthermore, we denote the actual credit-seeking cost for each unit of input as σ_g , p the price for the production input and normalized the output price to be 1, θ the *ex-ante* investment productivity. Normally, investment is made but productivity is not realized, thus we assume θ is a uniform distribution over interval $[0, 1]$ ³.

The model is illustrated as follows: at step 0, the two sides F and G simultaneously investigate the possibility of participating in the project jointly. If they are able to settle a profit sharing contract, then the sum of the shares can be allocated between them, let us define firm claims δ_f and local government claims δ_g ; if both parties can not successfully come to a negotiation, we define the local firm as private

²Here we do not consider the transaction costs the firm will enjoy afterwards, we consider the debt of 'favors' (*Renqing zhai*), the corruption risks and other relations associated costs.

³The distribution of θ is common knowledge

ownership. At step 1, given the ownership arrangement the *ex-ante* investment is made by firm manager, meanwhile the cost is also occurred. If the firm is private but has close contact with local government beforehand, all the profit is shared by local firm alone, therefore, we regard this case as benchmark case; otherwise we continue to step 2. At step 2, if the firm is a joint ownership TVE, the local government will observe the productivity and claim the profit share as they have planned. If the firm is private ownership with no contact with local government, F has to pay extra for procuring essential input, under this case, the local government G will act as a monopolist in setting a fee for selling controlled resource.

4.1 Private ownership with close political contact

Firstly we deal with the case of private ownership with close contact with local government as the benchmark case of the model we have proposed. In order to choose and *ex-ante* investment level, the participant's problem can be solved through maximizing the expected social surplus:

$$\max_{\{I, K(\theta)\}} E_{\theta}[\theta F(I, K) - (p + p\sigma_g)K(\theta)] - C(I) \quad (1)$$

To specify the production function $F(I, K)$, we take the production form as $I^{1-\alpha}K^{\alpha}$ where $\alpha \in (0, 1)$ and the cost function $C(I)$ is defined in the form of I^{γ} where $\gamma > 1$, we then have the following function:

$$\max_{\{I, K(\theta)\}} E_{\theta}[\theta I^{1-\alpha}K^{\alpha} - (p + p\sigma_g)K(\theta)] - I^{\gamma} \quad (2)$$

We solved the problem backward. As referred above, the optimal input K could be realized given θ and I , we have

$$\max_{K \geq 0} \theta I^{1-\alpha}K^{\alpha} - (p + p\sigma_g)K \quad (3)$$

After applying first order condition we get:

$$K^*(I, \theta, \sigma_g, p) = I\theta^{\frac{1}{1-\alpha}} \left(\frac{\alpha}{p + p\sigma_g} \right)^{\frac{1}{1-\alpha}} \quad (4)$$

If we insert the result of optimal input into the original profit function, we have firstly the optimal profit π . Since θ is a uniform distribution over $[0, 1]$, the expected profit function could be derived from definite integral of continuous profit function π over θ interval $[0, 1]$. Therefore, we have both π and Π as follows:

$$\begin{cases} \pi(I, \theta, \sigma_g, p) = I\theta^{\frac{1}{1-\alpha}}\left(\frac{\alpha}{p+p\sigma_g}\right)^{\frac{\alpha}{1-\alpha}}(1-\alpha) \\ \Pi(I, \sigma_g, p) = E_\theta[\pi^*(I, \theta, \sigma_g, p)] = I\frac{(1-\alpha)^2}{(2-\alpha)}\left(\frac{\alpha}{p+p\sigma_g}\right)^{\frac{\alpha}{1-\alpha}} \end{cases} \quad (5)$$

Since we find out the optimal level of input demand, optimal level and expected profit level, we can move forward and represent the *ex-ante* investment decision problem:

$$\max_{I \geq 0} \Pi(I, \alpha, \sigma_g, p) - C(I)_1 \quad (6)$$

After setting up the first-order condition we solve for the *ex-ante* investment level I as:

$$I_{P_1}^{*\gamma_1} = \left(\frac{1}{\gamma_1}\right)^{\frac{1}{\gamma_1-1}} \left[\frac{(1-\alpha)^2}{(2-\alpha)} \left(\frac{\alpha}{p+p\sigma_g}\right)^{\frac{\alpha}{1-\alpha}} \right]^{\frac{1}{\gamma_1-1}} \quad (7)$$

In order to simplify the expression, we set $\omega = \frac{(1-\alpha)^2}{(2-\alpha)}\left(\frac{\alpha}{p+p\sigma_g}\right)^{\frac{\alpha}{1-\alpha}}$. Finally we insert the optimal investment level into profit function (11) and welfare function (2) respectively, we have:

$$\Pi(I_{P_1}^{*\gamma_1}, \sigma_g, p) = I^*\omega = (\gamma_1)^{\frac{1}{1-\gamma_1}} (\omega)^{\frac{\gamma_1}{\gamma_1-1}} \quad (8)$$

4.2 Joint ownership TVE

Since the profit sharing contract has been signed between local government and local firm, the *ex-ante* investment problem could be written as:

$$\max_{I \geq 0} \delta_E \Pi(I, \alpha, \sigma_g, p) - C(I)_2 \quad (9)$$

Note if $\delta_E = 1$, the *ex-ante* investment decision problem is the same as (6) except for the degree of Firm-Government relation. We then solve the optimal *ex-ante* investment level under joint ownership TVE case as follows:

$$I_J^* = \left(\frac{\delta_E}{\gamma_2}\right)^{\frac{1}{\gamma_2-1}} \left[\frac{(1-\alpha)^2}{(2-\alpha)} \left(\frac{\alpha}{p+p\sigma_g}\right)^{\frac{\alpha}{1-\alpha}} \right]^{\frac{1}{\gamma_2-1}} \quad (10)$$

We apply the same method above, then we have the expected profit under the joint ownership as:

$$\Pi(I_J^{*\gamma_2}, \sigma_g, p) = I_J^*\omega = \left(\frac{\delta_E}{\gamma_2}\right)^{\frac{1}{\gamma_2-1}} (\omega)^{\frac{\gamma_2}{\gamma_2-1}} \quad (11)$$

4.3 Private ownership without close political contact

At step 2, the productivity of θ for *ex-ante* investment is only realized through the effort of F . Since F has no appropriate contact with local government and in order to get essential input, he turns to local cadre for access to input. Local cadre G would choose a indicator of fee to maximize his own expected revenue, if we take I_{P_2} as given, we have:

$$\begin{aligned} \max_{f \geq 0} E_\theta [K(I_{P_2}, \theta, f, \sigma)(\sigma f - \sigma_g)] \\ \text{where } E_\theta [K(I_{P_2}, \theta, f, \sigma) = I_{P_2} \omega \end{aligned} \quad (12)$$

If there are many private firms without political ties competing for the resource in government controlled market, we assume g_c to be market-clearing cost of unit input. The actual cost for each unit of input will increase if the fee demanded by local government increases, eventually there will come to an equilibrium at which only the firm who can afford the g_c left. Applying the first-order condition on (12), we solve the problem for the optimal fee set by local government G as:

$$f^* = \frac{g_c + 1 - \alpha}{\alpha} \quad (13)$$

Since the optimal fee set by the local government is solved, we insert the result into the original input decision problem, to replace the credit-seeking cost g_c , then we have the firm's investment plan as:

$$\max_{K \geq 0} \theta I^{1-\alpha} K^\alpha - (p + pf^*)K \quad (14)$$

We can display $\pi(I, \theta, f, \sigma)$ in terms of the profit function in section 3.1 in the first-best case of $\pi(I, \theta, g_c, \sigma)$:

$$\pi(I, \theta, f, \sigma) = \pi(I, \theta, g_c, \sigma) \alpha^{\frac{\alpha}{1-\alpha}}$$

Furthermore, we solve for the optimal *ex-ante* investment level under the private ownership without close political ties with local cadre $I_{P_2}^*$ as:

$$I_{P_2}^* = \left(\frac{\alpha^{\frac{\alpha}{1-\alpha}}}{\gamma_3} \right)^{\frac{1}{\gamma_3-1}} \left[\frac{(1-\alpha)^2}{(2-\alpha)} \left(\frac{\alpha}{p + p\sigma_g} \right)^{\frac{\alpha}{1-\alpha}} \right]^{\frac{1}{\gamma_3-1}} = \left(\frac{\alpha^{\frac{\alpha}{1-\alpha}}}{\gamma_3} \right)^{\frac{1}{\gamma_3-1}} (\omega)^{\frac{1}{\gamma_3-1}} \quad (15)$$

The expected profit is

$$\Pi(I_{P_2}^{*\gamma_3}, \sigma_g, p) = I_{P_2}^* \omega = \left(\frac{\alpha^{\frac{\alpha}{1-\alpha}}}{\gamma_3} \right)^{\frac{1}{\gamma_3-1}} (\omega)^{\frac{\gamma_3}{\gamma_3-1}} \quad (16)$$

4.4 Welfare comparison

We have the following profit functions under three different firm-government types:

$$\begin{aligned}\Pi(I_{P_1}^{*\gamma_1}, \sigma_g, p) &= \left(\frac{1}{\gamma_1}\right)^{\frac{1}{\gamma_1-1}} (\omega)^{\frac{\gamma_1}{\gamma_1-1}} \\ \Pi(I_J^{*\gamma_2}, \sigma_g, p) &= \left(\frac{\delta_E}{\gamma_2}\right)^{\frac{1}{\gamma_2-1}} (\omega)^{\frac{\gamma_2}{\gamma_2-1}} \\ \Pi(I_{P_2}^{*\gamma_3}, \sigma_g, p) &= \left(\frac{\alpha \frac{1-\alpha}{\gamma_3}}{\gamma_3}\right)^{\frac{1}{\gamma_3-1}} (\omega)^{\frac{\gamma_3}{\gamma_3-1}}\end{aligned}$$

In the end, we have welfare comparison in the circumstances of three partnership between local government and rural firm.

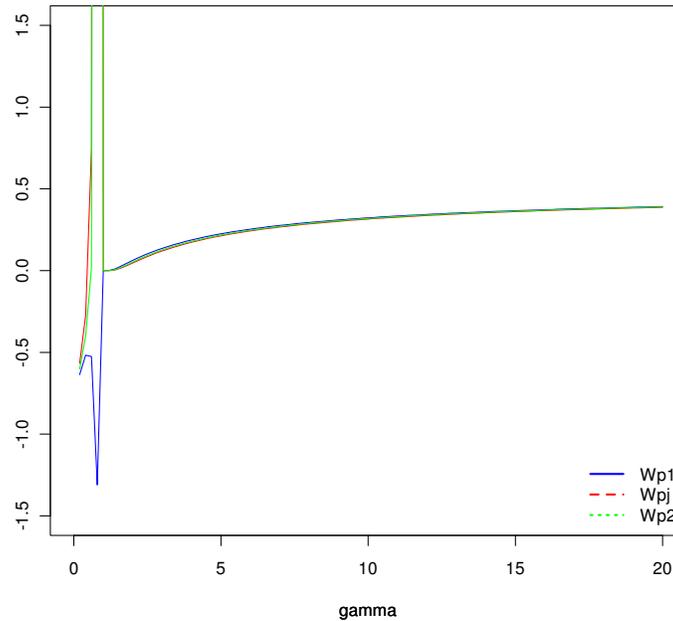
$$\begin{aligned}W_{P_1} &= \left(1 - \frac{1}{\gamma_1}\right) \left(\frac{1}{\gamma_1}\right)^{\frac{1}{\gamma_1-1}} (\omega)^{\frac{\gamma_1}{\gamma_1-1}} \\ W_J &= \left(1 - \frac{\delta_E}{\gamma_2}\right) \left(\frac{\delta_E}{\gamma_2}\right)^{\frac{1}{\gamma_2-1}} (\omega)^{\frac{\gamma_2}{\gamma_2-1}} \\ W_{P_2} &= \left(1 - \frac{\alpha \frac{1-\alpha}{\gamma_3}}{\gamma_3}\right) \left(\frac{\alpha \frac{1-\alpha}{\gamma_3}}{\gamma_3}\right)^{\frac{1}{\gamma_3-1}} (\omega)^{\frac{\gamma_3}{\gamma_3-1}}\end{aligned}$$

As we have assumed, $\gamma_1 > \gamma_2 > \gamma_3 > 1$, to define the firm's costs on relations with local government. The larger the relational parameter is, the better and closer relationship the firm would have received, and the larger *ex-ante* investment costs the firm would pay. Figure 1 briefly illustrates how the relational parameter changes the firm's welfare. Since $\gamma > 1$, the three curves of functions almost increasingly coincide with each other, which suggest the larger the γ is, the larger the value of welfare will be. We find although the relationship with local government would increase the firm's *ex-ante* investment cost, it can increase the overall welfare level of firm as well. From the Figure 1, we agree the positive role that close relationship with local government has played in firm's performance, and the relations with local officials do help to strengthen firm's welfare level at micro level.

5 Conclusion

We have investigated a brief survey on firm-government relationship in rural China, in particular, we have discussed how the firm-government relationship is evolved through the economic reform, and how this institutional arrangement in micro setting influences the firm's performance. We combine the perspective of social networks and have illustrated the relational *Guanxi* and its role in business activities in China. Furthermore, we have proposed a simple model to find out how the relational parameter affects the firm's profit and welfare functions via *ex-ante* investment costs.

Figure 1: Welfare comparison among different F-G relational arrangements



Source: own illustration.

We have observed that government does impose certain political constraints on the economy through different mechanisms, especially through certain patterns of local governance, and rural firms rely on the inequality of the distribution of economic and political resources across community to acquire economic benefits. As our model has showed, close relationship with local government can slightly help to increase the welfare level of individual firm at the micro level.

In this sense, our survey and analysis of the firm-government relationship in rural China brings about a conjecture that the political relation may contribute to the welfare of rural firm in local area, our theoretical framework still needs more to adapt to the specific Chinese case. This inevitably leads us to do more empirical work on how the firm-government relationship affects firm's business activities and economic performance in the next round of research work.

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CHAPTER 3
AN ANALYSIS OF THE EFFECT OF FIRM-GOVERNMENT NETWORK ON
MANAGEMENT INNOVATION

Guoda Gu, Jingjing Zhong¹ and Jiangping Han

Abstract

In this paper we examine the effects of institutions on firms' management behavior. By proposing an externally embedded network perspective on firm performance, we demonstrate how firms are influenced by the external institutional structure. In the framework of China's economic development, we observe the strong links between firm and local government, and these links will significantly influence the firms' management strategies. Thus, we focus on the firm-government network as a driving force to the firm management ability and behavior. Furthermore, we study the network value of firms' local and external networks in the effects of firm-government relationship using a simple game-theoretical model. In the end, we give some implications to the firms' management strategies in the effect of firm-government relation.

Key words: Firm-government network, management innovation, China

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¹The co-authors are located in economics department of Zhejiang University, China.

1 Introduction

The nature of the firm has explained by institutional theory through a series of socio-institutional framework of rules, conventions and constraints (Oliver Hart, 1990; North, 1971). In order to be survival and gain success, organizations conform to gain resources and get close to institutions. While management research has accepted the importance of institutions in firm behavior, the role of networks, especially, the political network is becoming more important in China's status quo.

Principally, a network could be defined as a group of agents who pursue repeated, enduring exchange relations with one another and, at the same time, lack a legitimate organizational authority to arbitrate and resolve the disputes that may arise during the exchange (Podolny and Baron, 1997). The social network analysis is very broad and incorporates a variety of methods and applications, yielding a research tradition that is beyond the scope of this review to fully summarize. Important threads have included the development of methodologies to characterize networks, including mathematical tools such as graph theory (Wasserman and Faust, 1994; Watts and Strogatz, 1998); the development of statistical tools to deal with interdependencies peculiar to networks (Holland and Leinhardt, 1977; Krackhardt, 1987; Robins and Pattison, 2001); and the development of simulation methods to describe the evolution of networks (Banks and Carley, 1996; Zeggelink, 1995).

Some other authors specifically investigate the network structure as sources of social capital, and promote the firm performance and management ability. The structural arguments include the formation of dynamic alliances and concentrations of power tend to occur at certain nodes in networks (Burt, 1982), the network ties can differ in strength and meaning, they are not equivalent (Granovetter, 1974), network can be constitutive in the sense that they shape agents' identities and thus their preferences as well as capacities (Padgett and Ansell, 1993). Durlauf (1993) has demonstrated that network interactions between firms in technologically related industries can generate multiple equilibria for the aggregate growth of the economy. Feenstra et al. (1997) have found that differences in business group networks across Asian countries are reflected in differences in the quality and variety of the products they export.

Refer to the institutional embeddedness, Granovetter (1985) firstly defines embeddedness theory, he acknowledges that the on-going networks of social relations between people discourage malfeasance, actions between individuals is so predicated on social relations that evaluating behavior based on independent economic actors

is grossly misleading. Furthermore, Lin (1995) emphasizes social contacts' resources such as information, influences and services that are embedded in networks social relations, the resource exchange and personal contact mechanisms are being regarded as institutional embeddedness as another source of social capital).

Over the last decades China's GDP has achieved the significant average growth rate in the world. China's rural industry, which began a process of rapid growth after 1970s, has played a major role in the success of China's economic reform. Arguably, the most outstanding feature of the industry is Township and Village Enterprises (TVEs). As a unique organizational form, TVE shares a close partnership between government and business at the local level, which evoke the notion of local corporatism (Nee, 1996; Oi et al., 1999). The uniqueness of TVEs is distinguished as quasi-formal public alliance (Bai et al., 2001; Nee, 1996; Oi, 1992; Whiting, 2001). It means that local government officials not only play a key entrepreneurship function in fostering the local profitability by serving as the directors for TVEs (Oi et al., 1999; Blecher, 1991), but also control the input resources of enterprises, like Land, access to capital and bank loans, business license, political favor and support (Li, 2005). TVEs in return could help to achieve certain government goals in terms of increasing community government's revenue, creating non-farm employment and raising per capita income (Pei., 1998; Jin and Qian, 1998; Sun, 2000).

Despite its success in the initial phase of China's economic reforms, the organizational structure of TVE began to collapse in mid-1990s. As only a transitional device, more than half of TVEs in rural China were partially or fully privatized (Li and Rozelle., 2003; McMillan and Woodruff, 2002), the reasons could be found in declining efficiency and lower productivity at micro level, the corruption of political inefficiency at local level (Yao, 2004), and national policy shift in favor of private firms and free economy market at the macro level (Cao and Weingast, 1997; Dong et al., 2004). However, a large number of emerging literatures still suggest that TVEs' connection and the informal personal ties with local government are still working (Whyte, 1995; Li and Rozelle., 2003; Li, 2004, 2005). The evolution of rural enterprises contributes to the special government-enterprise partnership at local levels. It is worthy to investigate this quasi-formal governmental impact on the firm performance and management of rural industry in China.

According to the status quo of China, we examine the effects of institutions in firms' management, and specifically, we focus on the firm-government network as a driving force to the firm management ability and behavior. By proposing

an externally embedded network perspective on firm performance, we demonstrate how firms are influenced by the external institutional structure. Furthermore, we study the network value of firms' local and external networks in the effects of firm-government relationship using a simple game-theoretical model, to show that the value of network power increases in the complexity of external network decreases and if the ability of the communication flow of internal social network increases. We will give some implications after the theoretical analysis on firms' management behavior.

2 A network-based perspective

2.1 Institutional embeddedness

While neoclassical theory neglects the emergence of incomplete contracts, opportunistic behavior and differing incentive schemes, institutional economics and new institutional economics allow for market imperfections in economic transactions. The introduction of formal institutions leads researchers to investigate and incorporate a focus on informal constraints, principally norms and networks (Nee, 1996). Norms is a general agreement on conduct, emerging in networks through constant interaction between actors. If there is a general agreement on cooperation being the norm between all members, network contributes to this effect through following ways: a) by communicating, actors can agree on norms or adapt strategies proven successful in transactions, b) actors can communicate experiences and information with other actors, building up actors' reputation in the network, c) actors not keeping to the norms can be sanctioned by other members in the network. These three mechanisms promote the function of norms and constraints which in turn help to maintain the cooperation. Compared with the formal contracts, these instruments are less costly in monitoring and enforcement.

When actors repeatedly interact with each other in social and also economic domains and thereby they might share common knowledge and information about each others' choices can be modeled using game-theoretic approach (Kandori, 1992; Bendor and Piotr, 2001). Through repeated interactions they generate implicit rules, community norms, emerging as an equilibrium outcome over time. Hence, the emergence of norms is also strongly connected to network structure, which will be discussed in the following section.

2.2 Structural embeddedness

Firms are embedded in the networks of social relationship that may involve the state, families, professions, religion and ethnicity (Granovetter, 1985). A number of researchers have incorporated embeddedness into firm behavior and outcomes. The networks have been found positively influencing firm performance, product innovation at the firm level, and enhancing the individual's power and career mobility at the employee level. Research on personal networks of entrepreneurs revealed that entrepreneurs perceive and exploit business opportunities in disconnected networks (Burt, 1992), obtain information, advice and social support from network alters, furthermore, networks help to control and manage exchange structures and access financial capital.

From the structure perspective, the networks of relationships interact with institutional influences to underlie the processing of issues and alternatives for answers in organizational moves. The structural networks vary from degrees of strengths and various compositions in society, thus they provide an intriguing opportunity to explore the effect of institutional influences on organizational performance.

Organizational variables in the management theory are differentiating, describing the degree of unit's specialization, intensity of inter-firm interdependence, depending on asset specification, uncertainty, frequency and complexity of interdependent activities. From this point, for a firm in business, the networks could be built partly upon their senior executives' private and professional working relationships, and partly through their expanding market exchange relationships and organizational routines. Firms differ in the nature and strength of their social ties and connections with others in an institutional framework. The firms under embedding in different institutional environments could behave extreme differently, furthermore, different degrees of institutional relationship define the extent to which firms are related to, and the outcome that firms could yield.

Specifically, as "institution" is a multidimensional concept, we specify the firm-government relationship as network norms and structures in our research. According to the above arguments, we emphasize the institutional embeddedness, in particular, the firm-government network in the firms' performance, and we will demonstrate our arguments using a simple game-theoretic approaching after the literature review on Chinese situation in the following section.

3 Government and firm performance: Chinese style

3.1 Literature review

The success of TVEs (Township and village enterprises) at the beginning of economic reform era yields volumes of theoretical and empirical studies to look at the government firm performance relation. Compared to the state-owned enterprises before the reform, many researches demonstrate the efficiency of restructure in institutional arrangements. Weitzman and Xu (1994) suggest internal institutional form of TVEs, which are seemed to facilitate cooperation through implicit contracts among community members leads to higher economic performance; similar interpretations argue the income-sharing contract may be optimal in the absence of an independent legal system (Nee, 1996). Che (2002) emphasizes the TVE ownership arrangement can act as a commitment mechanism to limit rent-seeking activities, the pro-business government has the interest to promote the performance of firms. Similarly Che and Qian (1998) also develop a theory to support the argument that collective ownership of TVEs limits the predatory of central government. The community government's protection of TVEs becomes more effective than that of private enterprises because ownership gives the community government better information about the operation of firms (Li, 1996), especially, the accumulation of the collective land provides TVEs with an initial investment and lays the foundation for the formation of actual control right of local government (Pei., 1998).

Some other literature explains the institutional environment helps to achieve the outstanding performance of TVEs. As part of the political institutions, the community government can provide better political security to their own enterprises (Chang and Wang., 1994). The success of TVEs due to a set of external conditions made by the national policy, the early creation of product markets, followed gradually by markets for assets and factors of production, the decentralization of tax and fiscal system. TVEs have developed in an economy characterized by weak market institutions and poorly specified property rights with a declining but still functional state sector. Thanks to the central governments' influence on capital market, TVEs are able to access subsidization from political bureaus, and state-owned banks. Given the limited amount of personal financial resources, TVEs are able to access a larger pool of capital, bank loans with the help of the community government. Besides, the effect of fiscal decentralization that has made community governments independent fiscal entities. Community governments are able to retain and use a large proportion of the revenues they generate, and they are also subject to hard fiscal budget

constraints due to limited fiscal revenue transfers from the higher level government.

During the last two decades, especially since mid-1990s, TVEs have been increasingly privatized and most newly established firms are private enterprises. Largely, the studies begin to criticize the role or local government may lead to inefficient economic performance, the debate is mainly focused on agency theory and ownership management problem. Zhu (1998) constructs a formal stylized model on the rent-seeking theory to show the possibility of government officials choose inefficient contractual and ownership arrangement in pursuing their own self-interest. Furthermore, when the local community expands, the local government burden a considerable amount of debts accumulated by TVEs' non-performing loans or the potential credit risks (Zhang et al., 2004), such financial crisis leads the government to seek institutional change. It is well known that the institutional coercive power makes those who run the government to use that force in their own interest rather than promoting economic development, thus commitment problem is also existed in the local community level, in which the economic goal can not be achieved and the local government in favor of local revenue seeks other investment channels but does not support the development of rural firms any more. To summarize, the literature referred above more or less explain the government impact on the firm performance and firm productivity, despite the privatization among the rural firms, political influence plays an important role in the enterprise development.

Recently, some studies with respect to the social structure and social capital have conceptualized a new sight to investigate the government impact on firm performance and economic development. Originally, it is found from economic sociological argument, which focuses on mutual cooperation between firms and local government, especially between TVEs and their affiliated political bureau. Among the arguments, the predominant argument is Local Corporatism (LC) (Walder, 1995), which refers to a loosely coupled coalition between local government, financial institutions and firms aiming at promoting market-oriented growth. From the point of view of this theory, local governments act as a strategic alliance partner and facilities transactions between the firm and various other organizations, such as bank, the police, tax collectors and other government agencies (Boisot and Child, 1996; Walder, 1995). The theory also depicts social reputation mechanism resulted from the embeddedness of government in social network relations with firm management (Lin, 1995; Li, 2005). To be sure, Local Corporatism demonstrates the importance of formal and informal institutions in realizing the credible commitment of local

government, and descriptively specifies the networks of personal relations structure in local economic exchange (Granovetter, 1985; Lin, 1995). Although many of them descriptively explain how the social capital influences the firm performance, none of them theoretically analyzes the interaction between government and firm, and how the network of government and firm affect the firm performance. Details will be discussed in the next section.

3.2 The value of firm-government Network

As the above arguments indicate, the firm-government relationship in China could be divided into formal relation, which describes the routine business between firm and local governments, and informal relation, which casts light on the personal relationship between the managers of firm and political officers. Furthermore, as the officers of local government try best to maximize their own payoffs, they set up the relationship with upper level officers, seeking for the high chance of promotion. For the firms, they are not only willing to get support from local jurisdiction, but also hope to find more business opportunities for expansion or other beneficiaries.

We consider one specific trade between the local government (G) and a local firm (F). Local administrations have to make efforts or issue contract with firms to accommodate demands for more land, tax reduction or other politically controlled resources by firms. If the two players are able to reach the agreement, the local government could get political support and community support from local firms, the firms in other side, intent on exploiting different local incentives, tend to have economical support. The following strategic form (Tab. 1) describes the two-player infinitely repeated game, where each player can either cooperate (c) or defect (d). Due to the position of local government and firm, we assume they cooperate when they agree to sign the contract on specific issue, defect of firm comes from the situation where firm would not obey the contract as signed; defect of the local government means corruption and other related behavior from the political bureaus.

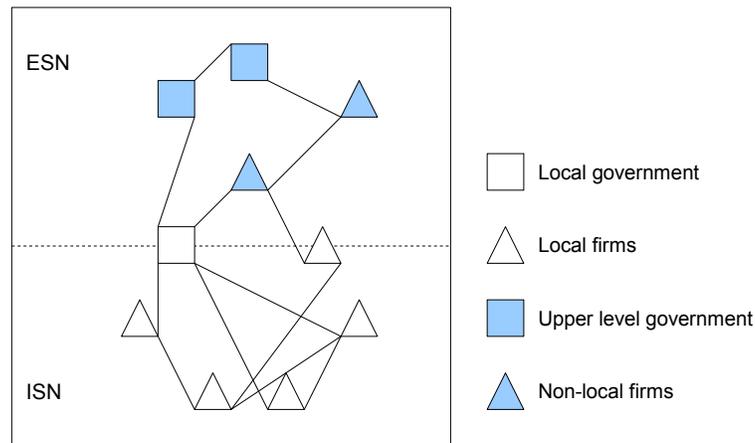
Table 1: Infinitely repeated two-player matching game

| | | Firm | |
|------------------|---|--------------|-------|
| | | C | D |
| Local Government | C | (R_m, R_m) | (b,a) |
| | D | (a,b) | (0,0) |

where $m \in \{h, l\}$, the payoff in the game satisfy $a > R_h > R_l > 0 > b$ and $a + b \leq 2R_l$. Besides, following Annen (2003) individuals have a discount factor $\sigma \in (0, 1)$, which is assumed to be the same for both player. As the status of nature, players have no social connections, individuals are not able to recognize themselves in different stages of the game, and defection in each stage is the dominant strategy. Prison's dilemma and the equilibrium would be both players choose defection. Under this situation, no long-term trade and cooperation occurs.

Now we consider the firm and local government have integrated in a social network, as defined earlier, individuals are able to build themselves reputation within the network. If a network can provide information about an individual's history, individual cares for his reputation, which may induce them to behave cooperatively. Any defection is possibly punished in the network. We argue the incentives for each of the player to cooperate are influenced by both the external social network (ESN) and internal social network (ISN).

Figure 1: Illustration of ISN and ESN



Source: own illustration.

Internal Social Network (ISN). Before the privatization, the government's non-financial interests in firms and firm's dependence on government for bailouts and subsidiaries create a mutual dependence between government and firm. It refers to the information sharing among social actors which is facilitated by a high degree of relational embeddedness in the social network. As Local Corporatism theory strengthens, the mutuality describes the government's dependence upon firms for physical output and the provision of employment and social welfare constraints its ability to discipline firm with the threat of closure, thus the member of Chinese

community is more likely to be obtained information and hope to gain exchange benefits from acquaintances and families, which is demonstrated by (Granovetter, 1974) as “strong ties” and “weak ties” respectively. As Krackhardt (1992) argues that in an organizational domain, information exchange is highly dependent on the degree of emotional closeness among social actors, the members of local community still have strong ethnic and emotional connections between each other. Thus, for individual player in the local community, either local bureau or the local firm has the opportunity to form an internal network in favor of his own interest. The communication and specifically, the quality of information transmission in the network lead to the quality of performance.

Definition 1. Communication in the local network is reliable with probability of $q(n_I, \theta)$, where $q(n_I, \theta)$ depends on the inclusiveness of the internal network n_I and the communication level θ . $\partial q(n_I, \theta) / \partial n_I < 0$, $\partial q(n_I, \theta) / \partial n_I \partial n_I > 0$, $\partial q(n_I, \theta) / \partial \theta > 0$. It defines the probability of being discovered in next period, $1 - q(n_I, \theta)$ is the probability of not being discovered in the next stage.

From the definition above, probability of not being discovered after defection decreases as the size of the local network increases, it is compatible with the reality that, when the business organization become much more in the jurisdiction and the local government seeks the most possibility of attracting the investment, local government has less interest on controlling the existed rural enterprises, thus increase the probability of being detected for firm’s defection behavior. Another important factor affecting the probability is communication, the higher the communication level is, the higher the probability of being detected will be. This definition argues the relational embeddedness should enhance the information utilization and reduce the opportunity behavior.

External Social Network (ESN). Tian (2001) develops a theoretical framework to capture the external management of TVE managers to highlight his public-relation ability, and write the external ability into firms’ production function. Extending Tian’s notion on external management ability, we argue the external social network (ESN) of individual player. The external network of rural firm managers is the capacity to negotiate with non-community political bureaus and other business suppliers or customers outside the community. As a whole, ESN states the connections outside the community. On the way of achieving the organizational objectives, information acquisition is not a discrete event, but rather a part of multi-stage multi-level process. We assume the effect of ESN is constrained through the complexity

of the exchange setting. The definition below captures the fact that in the exchange relationship of external network either "high-match" or "low-match" are being considered when the two players agree to cooperate, here the cooperative payoff of matching are written as and , where.

Definition 2. Suppose complexity in the external network is reliable with probability of $p(n_E, \phi)$, where $p(n_E, \phi)$ depends on the size of external social network of players and the complexity of the exchange setting ϕ . The probability of low payoff is twice differentiable function as well, $\partial p(n_E, \phi)/\partial n_E < 0$, $\partial^2 p(n_E, \phi)/\partial n_E^2 > 0$, $\partial p(n_E, \phi)/\partial n > 0$. The probability of high-match is given with probability $1 - p(n_E, \phi)$.

It states the probability of a low payoff increases as complexity of the external exchange setting increases. For instance, Berliant et al. (2001) emphasize that the size of a city influence the efficiency of knowledge exchange. That is, for the local government, when it is intervened by the upper level the government, his incentive to behave well in the local community would be impacted; for the local firm, the more ties can be regarded as an opportunity set for firms as a lubricant to reduce transaction costs. When there is complicated external network existed, this means, the possibility for him to invest in this local area will affected, and thus the probability of low payoff increases. Note the complexity is determined externally to the network, it is a feature of the whole exchange setting in which the network operates.

3.3 The strategic performance

Following from the definition described above, the strategy to cooperate in each stage t for both players is a sub-game perfect equilibrium if and only if

$$\pi_i(c_i^t, c_{-i}^t) \geq \pi_i(d_i^t, c_{-i}^t), i \in \{G, F\}, \forall t \quad (1)$$

Where π_i is the discounted payoff of player i of the infinitely repeated game and c_i^t, d_{-i}^t denote the actions cooperate and defect in each stage respectively. Considering both the communication in internal social network and the complexity structure of external network, the self-enforcing condition (1) holds, if

$$\frac{[1 - p(n_E, \phi)]R_h + p(n_E, \phi)R_l}{1 - \delta} \geq a + \frac{\sigma[1 - q(n_I, \theta)][1 - p(n_E, \phi)R_h + p(n_E, \phi)R_l]}{1 - \delta} \quad (2)$$

The inequality above denotes the expected discounted payoff of one individual when cooperating on the left-hand side and the expected payoff when defecting on the right-hand side. The transformation of the equality leads to the network positive enforcing power as follows:

$$S(n_I, n_E, \theta, \phi) = \frac{[1 - p(n_E, \phi)R_h + p(n_E, \phi)R_l][1 - \delta + q(n_I, \theta)] - a(\delta - 1)}{1 - \delta} \geq 0 \quad (3)$$

In order to sustain the cooperative equilibrium given the structure of the game above, we need firstly set the discount factor to be high. Besides, it is clear to see that positive enforcing power of whole network S is an increasing function of communication embeddedness of internal social network $q(n_I, \theta)$, and a decreasing function of complexity of external network $p(n_E, \theta)$. The value of network power increases in the complexity of external network decreases and if the ability of the communication flow of internal social network increases. As expanding theoretical definitions of Annen (2003), we put the network game theoretic performance analysis in the framework of local government and local firms, emphasizing the network effect of inter-organizational relationship. The same as the theoretical study, we find the relevant empirical observations discussed below.

4 Implication and conclusion

4.1 Local-oriented business strategy

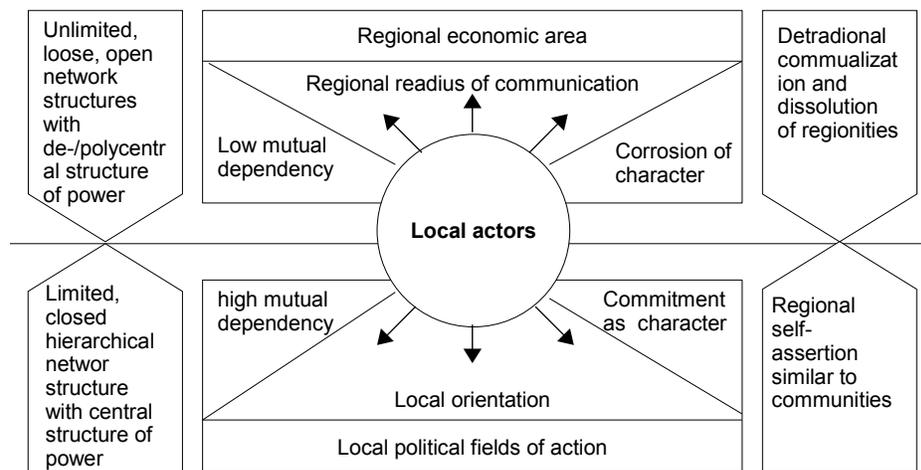
As the theoretical model implies, a local oriented business strategy would increase the network management ability of specific firm. Although China is approaching to the market economy, the long history of local corporatism is still dominating the social norms; the dynamics of network evolvement are path-dependent. Those with higher initial social position are likely to have more high status and resource rich players in their network, and these network clusters may function as closed societies.

Embedded local ties are those with which an actor has a high proportion of exchanges and close interaction, as opposed to less frequent, less close arms-length ties. Network ties transmit information and are thought to be especially influential information conduits because they provide salient and trusted information that is likely to affect behavior. To this extent, the local networks with close ties help to

speed up the communication and transparency in the local community, thus help to overcome the uncertainty of the imperfect institutional market. The industrial district literature also claims that firms in close proximity to each other gain knowledge spill-overs (Jaffe and Adams, 1996; Saxenian, 1994). Other argument supports that closed networks, where direct ties are also tied to each other, generate trust (Coleman, 1988).

From these arguments, we suggest the firms to attain a close networks with local organizations and local firms, to search for a more effective collaboration (Fig. 2).

Figure 2: Local actors in the field of tension of local and non-local orientation



Source: adapted from Fuerst et al.(2001)

As many firms and local government emphasize the 'go out' business strategy, it is skeptical to challenge with this slogan regardless of the business overall performance. According to the theoretical analysis, the complexity of the external network will decrease the player's network value, and decrease the success probability. However, analysis of the failure rates of apparel manufacturers in New York showed that firms with a high proportion of embedded ties to firms with mixtures of embedded and arms-length ties had lower failure rates (Uzzi, 1996). The firms appeared to benefit both from the broader information collection that arms-length ties provided and from the trust that embedded ties provided, thus suggesting that a balance of strong and weak ties is most effective (Uzzi, 1997).

Thus, the external management should be organized to "small-world" principles (Watts, 1999). The best network has local clustering into dense sub-networks, short paths between all actors, and relatively few ties. We believe those strategic conceptions helpful implications for the firm management, that is, firms are highly

constrained in their ability to form a network that is maximally efficient with respect to some property, the firms should be pay more attention on the ałgo outaf strategy. As the figure below indicates, for the local actors, they are confronted with a field of tension of regional and local orientation which has great importance for future development, the openness reform helps local actors to face with the communication radius widen on a regional scale. Interpersonal relations tend to be woven more and more in unlimited loose and open network structures with complexity. If the firms are used to the local orientation strategy, based on spatial closeness and mutual dependency, they confront with the regional competition with more challenges.

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CHAPTER 4
FIRM-GOVERNMENT RELATIONS AND MARKET TRANSACTIONS IN
RURAL CHINA

Jiangping Han

Abstract

This paper examines the role of firm-government relation in firm's market transactions in rural China. Using a fresh survey of medium and small size firms in rural area of Zhejiang province, we observe the firm-government network plays a positive role through a series of economic transactions mechanism, such as financial access, raw materials resources access and input and output products prices in the weak institutional environment. We offer a measurement using ego-centric network theory to operationalize the firm-government networks, and furthermore, we argue the managers who are active in political connections would easily overcome business transactions obstacles.

Key words: firm-government relations, market transactions, social network analysis, China

This paper will be submitted to *World Development*.

1 Introduction

The patterns and effects of relations between government and firms have long been discussed in the framework of institutional economy, political economy and other economy disciplines (North, 1971; Roland, 2000). As many cases of socialism economy address, the governments have overwhelming privileges to control production and distribution through planned price system and market intervention. As a result, the firm mainly depends on the quality of his relations with political bureaus to get access to resources and its bargaining power over quotas and administrative licenses. Through this way, the firm-government relations may help firm on business opportunities. Even in the world full of market competition, the empirical studies suggest that firm-government relations may still have a positive impact on firm's business activities (Fisman, 2001; Faccio, 2006). Governments are able to create appropriate conditions for business environment which fosters capital accumulation, efficient allocation of resources and furthermore help to sustain the economic growth (Haggard and Huang, 2008). Besides, the governments could play a role as a protector and enforcer of private property rights (Barzel, 1997). On the other hand, firm-government relation is considered to harm firm's efficiency. There is evidence indicating that the firms wholly or partially under the state's control are subject to employment inference or private utility maximization of political officers (Shleifer and Vishny, 1994), which directly induces the inefficiency of firms. Given the substantial debate of political's influences on business, it is necessary to analyze how the firm-government relations are structured in an optimal way, or even, in which social or business dimensions might be the relationship consequential.

China, in this case, is a good example deserving the empirical analysis on firm-government relation. First, the country itself is well known for its fast development on economy but no great success on political reform. Due to the weak organizational and institutional constraints, political authority in China is prone to the influences of special interests on business. The communist Party can exert the power on local governors, who may be promoted if their regions perform economically well, on the contrary, the one will be disciplined or even be punished if the economic statistics of his region do not display satisfactorily to the central government's expectation. Thus, the local politicians would prefer to participate in the business issues as much as they can. Second, China faces challenges in a process of fiscal decentralization and regional yardstick competition, which has been extensively discussed by Weingast and Qian (1996) in the theory of *Market Federalism, Chinese style*. Local gov-

ernments are delegated more decision-making powers in investment approval, firm entry, revenue mobilization, and more autonomy in community development, which in return enable local governments to pursue their own economic interests by allying politically connected firms in local area; Third, as North (2005) suggests the reason for firms to connect with governments derived from the particular cultural institutions, to this extent, Weitzman and Xu (1994) attempts to explain that the business behavior in China is deeply rooted in the traditional Chinese cultural values, which consist of a sense of order, vertical and horizontal relationships, obligation to the group, and the preference for harmony and cooperation in interpersonal relationships. The institutional background of China therefore provides an ideal empirical settings on analyzing the relationship between firm and local government.

Under this circumstance, the widely accepted miracle of TVEs (Township and Village Enterprises) have portrayed a distinguished relationship between firms and local government. TVEs locate in the rural area of China, specifically in the township or in village. The ownership structure of TVEs is regarded as ambiguous form, implying that the control power and decision making power are not clearly defined among local cadres, firm managers and villagers. As an organizational form, TVE shared a close partnership between government and business at the local level¹, which evoked the notion of *Local Corporatism* (Nee, 1996; Oi et al., 1999). The uniqueness of TVEs is distinguished as quasi-formal public alliance (Li, 2005). It means that local government officials not only play a key entrepreneurship function in fostering the local profitability by serving as the directors for TVEs (Oi et al., 1999; Blecher and Shue, 1996), but also control the input resources of enterprises, like Land, access to capital and bank loans, business license, political favor and support (Blecher and Shue, 1996; Li, 2005). TVEs in return could help to achieve certain government goals in terms of increasing community government's revenue, creating non-farm employment and raising per capita income. Despite its success in the initial phase of China's economic reforms, the organizational structure of TVEs began to collapse in mid-1990s. As only a transitional device, more than half of TVEs in rural China have been partially or fully privatized (Brandt et al., 2004; McMillan and Woodruff, 2002), the reasons could be found in declining efficiency and lower productivity at

¹China is a large country with five levels of government below central government, there are 31 level provincial level units, 331 prefecture level units, 2,109 counties and 44,741 townships and 730,000 villages (World Bank, 2002). When people talk about decentralization and local governance, always confuse by the multilevel nature of bureaucracy. We define the local government as government under counties in this paper.

micro level, the corruption of political inefficiency at local level (Yao, 2004), and national policy shifted in favor of private firms and free economy market at macro level.

After observing the significant role of local government played in rural China, many studies conducted to analyze the effects of local government controlled TVEs on their own economic performance and their business behavior in the weak institutional background. The public TVEs are regarded as second-best ownership solution to private ownership (Che and Qian, 1998b), therefore they may be induced to enjoy better market access and to choose a more efficient technology than private enterprises (Roland, 2000). Che (2002) has emphasized TVEs serves as a second-best commitment mechanism, through which the government would restrain itself from the rent-seeking activity; Chen (2000) has illustrated TVEs operation enjoyed a lower transaction costs; Additionally, Tian (2001) has denoted the external management ability of TVEs, which helps to increase the economic efficiency by theoretically incorporating external management ability into the production function. Furthermore, Zhou (2009) has proposed the firm manager's political membership affiliation as a kind of political capital help to increase the likelihood of firm's access to the financial market, On the other hand, TVEs' essence as public ownership inducing the rent-seeking and corruption problem of local government are criticized by many economists (Bai et al., 2001; Aidt, 2003), however, until now there is no appropriate empirical approach trying to analyze the potential linkage between the value of firm-government relationship and different market transactions of firms.

To our understanding, the innovation setting found in the field of TVE literature emphasizes the social capital and social networks embedded in the local governance formation Naughton et al. (2007). Our survey with managers of rural firm conducted in Zhejiang province partially describes the value of political capital and social network. According to the interview with managers there are two different opinions, some believe in the intensively competitive market, and refuse any type of political networking, they admit the government can not give them any beneficiary since the market is fully liberalized; however, some others argue the importance of inventing in the political connections, through the methods of shareholding with political bureaus, inviting officials as extra-supervisors, active involvement in the political activities. Theoretically, social networks enable actors to achieve their goals effectively because of cooperative behavior, high trusted embedded in relationships and informal social mechanisms that control opportunistic behaviors (Coleman, 1988). At firm level, besides the inter-firm connections, the managers may seek to channel

rents by building formal or informal connections with local officials. We assume this political network effect may significantly influences firm's market access and economic performance. We attempt to investigate the following research questions: what is the nature of firm-government relations? What are the identifiable patterns of firm-government relations in China? Where do economic actors like rural firms actually secure advantage through reliance on political connections?

This paper picks up the threads of the literature and provides new insights and results which previously were either impossible to obtain owing to lack of data or which remained unconsidered. The present paper is structured as follows: in the next section, we discuss the nature of firm-government relations, and the specific cases in China, by incorporating network perspective to conceptualize the firm-government relationship; we further investigate how the firms are influenced by market structure and market transactions in rural China, and propose the hypotheses whether the potential linkage between firm and political authorities could decrease the likelihood of obstacles to different market structures; in the fourth section, we specify the field study in China and introduce the description of data and variables, the quantitative measurements are discussed afterwards; in section 5, we empirically test the hypotheses and report the results, and section 6 provides a conclusion and further research choices.

2 Discussion of Firm-Government Relationship

2.1 The nature of firm's political connections

In the framework of transition economy, firms have incentives to set up strong connections with governments because politically network connections are assumed to be valuable. Although the relationships between political organs and enterprises seem inefficient as an institutional arrangement, the growing benefits of firm-government connections may be considered to come from several preferential policies such as tax reduction, favored resource allocation, relaxed political constraints and credible assurance like enforcement of business investment or financial support. In the case when products import or export is restricted, those firms who get more easily to the market access largely because of their ability to influence decision makers, regardless of enterprise's productivity and profitability (Wank,2009). Given the weak institutional background, trade restrictions, the protection of home industries, the existence of government subsidies, price controls are some means by which the firms

may be able to connect relations with Local governments and gain advantages over other competitors.

Politicians, on the other hand, have incentives to keep the tight connections with firms in order to fulfill their own objectives different goals from firm's economic efficiency. Therefore, the intervention of the political governments would decrease firms' performance. Roland (2000) briefly uses the criterium of whether the firm is privately or publicly owned to distinguish the relationship between firm and government. He argues firstly the relationship entitles the government to intervene in the production, which obviously forces the managers to deviate from efficiency. The managers of public owned firms will have more adverse incentive than privately owned firms' managers, and thus will be less diligent in maximizing revenues and minimizing costs (Shleifer and Vishny, 1994). A second view refers to the commitment problem. Lack of commitment may be a source of inefficiency intervention even if government pursue efficiency objectives. The politicians who oversee public owned enterprises operations cannot credibly commit to bankrupting poorly performing SOEs (State-owned Enterprises), or even to withholding additional subsidized funding, so state enterprises inevitably face soft budget constraints.

Generally speaking, we have surveyed a wide range of experience and literature on political connections, following others, distinguish among three consequences: first, the ties with political officials positively help firm performance due to the benefits from reduction of information costs. Studies by Fisman (2001) find that stock prices of firms closely connected with Indonesia President dropped more than less well-connected firms at the time of rumors of his worsening health, which suggests the politically-connected firms have more reliable information compared with less politically connected ones; Johnson and Mitton (2001) analyze politically connected firms in Malaysia whose officers or major shareholders are affiliated to top government officials and find capital control implemented during Asian Financial Crisis mainly benefit these connected firms. Choi and Thum (2007) argue that the ties between firms and the politician's survival act as means of credible commitment which forces entrepreneurs to support the government and to exert effort in its stabilization. Their case actually explains the political connections based on rent exchange. Second, the political connections have nothing to do with firm performance. Faccio (2006) studies over 2000 firms in 47 countries and discovers that political connection -defined as large shareholders or top directors being a member of parliament, a minister or the head of state, or closely related to a top official- has no significant price effect, even though such connections are widespread. Third, there is no signif-

icant linkage between political connections and firm performance. Surveys by Cull and Xu (2005) and Schankerman and Hellman (2000) find CEOs in China and 20 East European transition economies perceive contacts with government officials to be detrimental to the firm.

2.2 Firm-government relationship in rural China

As we have already introduced, *Market-Preserving Federalism Chinese style*, originally proposed by (Weingast, 1995), sets the institutional structure of socialism society into *de facto* federalism. It highlights a series of institutions that distribute authority between central and local governments with the aim of promoting high growth rates by reducing the government intervention in the economy and further facilitating inter-government competition to attract business and investment. Li et al. (2000) illustrate when competition is sufficiently intense in the product market, the local government will be induced to shift the residual claims to the manager, thus the local firms will jump out of the residual control rights by local government. Although it seems the firms would totally get rid of the control by local government, the firm-government relations are extensively observed between TVEs (either private or collective) and local governments (especially township and village governments).

As a consequence of national policies, TVEs were rooted in the township and villages of rural China, but shared a variety of ownership structure: the firms were partially or wholly controlled by local governments, or in some other cases, the firms were partially run by local officials. The existence of TVEs shapes numerous interpretation of an efficient substitute in a weak environment (Che and Qian, 1998a). Initially illustrated by Oi (1992), *Local Corporatism* was to explain the process of explosive rural economic growth that took off in the 1980s and continued into the 1990s in rural area. Such areas had a legacy of collective-run industries that formed the basis for TVEs development. Oi et al. (1999) argues, due to the decentralization combined with hardened budget constraints, the local governments was granted greater rights over any surplus. To develop the rural industrial economy was a major opportunity for local officials who were eagerly to generate profits to fill up in the hole of agricultural revenue loss. One can broadly define the relation between local government and firms as a quasi-formal government-business partnership at the local level in a special context of weak formal institutions and strong informal institutions (Li, 2005). In other words, *local corporatism* is a special institutional

design to govern both formal and informal relationships between local officials and TVEs' managers.

Behaviors of Local Government. When we discuss the behaviors of local government, the focus is mainly on the county, township and village governments and their affiliated departments. At the time when TVEs originated, local government served multi-disciplinary functions in the local area in China. First, it acted as an industry corporate board in the firms, to perform the tasks of strategic planning, management selection, incentive design and firm performance evaluation. Because of the effects of the need for revenue generation, local governments went into business with various agencies at the county-level to raise revenues and to provide employment opportunities (Blecher, 1991). Second, local government contributed himself to develop the local public utilities and facilitated resource access for local firms. By developing the physical environment, the access to capital and bank loans, and the link to the external markets, local government played a role of middleman. For example, Park and Shen (2003) have argued that the function of local government was mainly in the form of loan guarantor, so TVEs had priority to get loans than private rural firms. Third, local government acted as a regulator or policy maker through interpreting the government policies and regulations favorably and implementing them selectively at the community, including tax collection, alternative levies and fees. Forth, local government served as an organizer and took a leading role in fostering the local social capital and structure development among people. The behavior of local government and its affiliated agencies had great impact on collective action and social capital through trust, norms and networks among different organizations. It is because the politician's promotion and compensation are affected by their performance in various political and social objectives. Undertaking the functions referred above and achieving the objectives in their jurisdiction may increase the political officials' income and promotion opportunities, but it may not help or even jeopardize firm efficiency.

Nowadays, after the massive privatization of public TVEs in the end of 1990s, local officials gain from their connections with the firms in following several ways: they may receive management fees or unauthorized fees and taxes levied on private business; private business may rely on them to find channels for re-selling at higher market prices goods bought at low state-set price, or to gain inside channels for exports. They may benefit formally from the behavior since the generated extra-budgetary revenues may help them to fulfill the economic requirements set by the upper level governments.

Behaviors of Firm Manager. The foremost method the managers attempt to use is to work through official channels. They will focus on the careful cultivation of ties with selected offices and officials, rather than a regularized and impersonal adventure into the bureaucracy (Pearson, 1997). There are several ways for rural firm managers to connect with local officials:

1) Formal institutional connections. Officials in some specific departments may be invited to be placed on a board of directors. Sometimes, firms try to embed relationships with officials into their organizational structure by placing a key official (such as someone from the supervisory bureau) on a board of directors or high in the management structure so the firm can use that person's connections and influence to its own advantage. In most cases, however, relationships are less institutionalized. Relationships may be sought for one-time benefits, managers cannot be certain, however, that these one-time efforts at influence will be effective. More effective use of ties involves the active cultivation of relationships that last over time.

2) Formal individual connections. Managers in rural firms have not shown strong inclinations toward formation of strong horizontal ties among firms, but they are prone to be active in political activities. Among the managers in rural area, one potential channel for formal, organized but individually influence is representation in existing political organs, notably the CCP, NPC, CPPCC² and their local counterparts. The membership is considered as political capital (Zhou, 2009), and the investment in such political capital involves participating regularly in routine activities and confederacies, contributing to government-sponsored social programs, which in return could receive considerable benefits.

3) Informal individual connections. Besides the formal individual connections, the managers prefer informal connections with politicians. Managers attempt to form dense client alliances with the political officials in person, especially at the local level. Ties may be built on existing family relations or, among the well-educated, on bonds developed in school, as in the case of one manager who had connections with schoolmates who were now in the political agencies and in securities regulatory agencies. Also the informal connections are built through bribery and the giving of small gifts to lower-level cadres, by employing middle-level officials in their business or by cultivating high-level officials as patrons.

²CCP denotes Chinese Communist Party; NPC is the abbreviation of National People's Congress; CPPCC denotes Chinese People's Political Consultative Conference. They represent the three most important legislative (or semi-legislative) organs of the Chinese government. The lowest legislative organ is at the township level.

The managers try to satisfy their own narrow business interests through building personal relationships with local officials, to improve business conditions and more potential access controlled by the government (Hendrischke, 2003). Managers call on them to achieve narrow types of influence, ranging from evading an existing rule, gaining a favorable interpretation of a rule, assuaging the anger of an official about past deeds, and to moving a procedure along faster. From the field study we have also learned, good relationships can be especially important when the government provides approvals, or when the government is a customer or supplier. The goal of using contacts is usually to avoid formal rules set down by the government rather than to change the existing regulatory regime, and is very important for both the registration and the operation of business. Local governments retain some types of authority and discretionary favoritism control in allocating resources and protection, especially in rural area, where local cadres play a significant important role in the community development, thus the firms who has strong connection with local political agencies enjoy preferential status in obtaining bank loans and other key inputs as before (Che, 2002; Brandt et al., 2005).

2.3 Conceptualization of Firm-Government Relationship

The existing empirical work focusing on the impact of firm-specific connections has not inquired about the nature of the connections, in general, there are three different proxy measurements to define the firm-government relations:

1) Relations between top firm managers and top government officials. Political connections of the firms, normally describing the relation between high-ranking firm managers and political officials, can be passed on through inheritance such as family, social status, ethnicity, gender, etc. In particular, whether top firm managers are related to top government officials is widely used as the proxy measurement for political connections in literature (Fisman, 2001; Johnson and Mitton, 2001; Faccio, 2006). They mostly use the number of ex- and/or current government officials that belong to the board of directors. Most firms going public are SOEs and can only be partially privatized so that the state maintains control. Consequently, an important characteristic of these firms is that the board of directors of these firms is dominated by former or current government officials even after going public. Thus, although all SOEs are, to some extent, politically connected, those that have important current or ex-government officials on their boards would be characterized by stronger political connections.

2) An alternative way to describe the firm-government relations is by firm's activities in politics. This includes bribery and corruption, electoral campaign contribution, philanthropic donations and other forms of developing relations through school classmates ties. Korszner and Stratman (1998), Ang and Boyer (2006) focus their research on campaign contributions and their economic effects on the contributing companies.

3) Political Membership. Putnam (2000) assumes that individual engage in civil society through participation in voluntary organizations or networks, such as churches, clubs, associations and informal groups. This implies the social actors, either individuals or organizations, will have more social capital than those have fewer membership relationships in society. Bian (2002); Li et al. (2008) study the political membership as a key measurement of political capital.

We attempt to apply the measures of social networks to analyze the firm-government relations in China. Granovetter (1985) proposes the definition of embeddedness which refers to the process by which social relations shape economic action by creating unique opportunities and access to those opportunities. The actions of economic agents are embedded in concrete systems of social relations, which further facilitate and constrain agents' profit and other economic actions. The actors in this bilateral relationship would attempt to establish costly safeguards to make sure the information and resources are exchanged successfully in the relation. The theory of embeddedness argues the process of embedding commercial transactions is incorporated with future exchanges expectations of trust and reciprocity that promote unique value creation in the relationship (Uzzi, 1997).

Regarding the enterprize performance, many scholars agree that social capital embodied in managerial ties and network matters (Granovetter, 1985; Burt, 1997), other studies incorporate social capital and social networks as independent variables that affect entrepreneur's actions and its outcomes (Hoang and Antoncic, 2003). Even in the context of China recently, a growing number of literature jumps out of the studies on the economics implications of ownership, it investigates the social capital and social networks of entrepreneurs instead, and tries to explain the network connections in firm's economic performance and business behavior (Bian, 2002). Peng and Luo (2000) explain that manager's micro interpersonal ties with top executives at other firms and with government officials help improve organizational performance, furthermore Peng (2004) focuses on the economic payoff of kinship networks in the context of China's rural industrialization to argue that kin

solidarity and kin trust played an important role in protecting the property rights of private entrepreneurs and reducing transaction costs during the early stages of market reform, when formal property rights laws were ineffective and market institutions underdeveloped. Keister (1998) proposes that interlocking directorate in the business groups in China will improve communication and firm access to scarce capital when markets are beginning to develop, and thus improve firm performance.

However, few of the network analysis discussed above manages to describe the firm-government network, and to analyze the effects of network on firm business behavior. In reality, the main mechanism to form politics-business network can influence the reduction of general competitive intensity within a community. It is no doubt that firms in China use networking as an effective business strategy within the current economic and governmental system. Of the various types of network, developing the social ties embedded in the formal hierarchical political system is an important strategic focus for many firms. We count on the argument from Granovetter (1985), who has also stated that social networks including political connections are a key determinant of resource allocation and other economic actions, to look for the appropriate proxy measurement of firm-government relations.

Network Range. Network range is one of structural property of the individual actor that is proposed to influence performance. Network range is defined as the extent to which an actor's ties link it with diverse others (Burt, 1992). For example, if an individual's ego-centric network is limited to others that belong only to one ethnic or social group, that individual has low network range. On the other hand, an ego network comprising others of a wide variety of ethnic and social groups has high network range. Network range implies that the actor is connected to partners that are dissimilar from itself and each other. In our case, political network range through ownership describes the variety of institutional groups or individuals who share the control power and decision power of the firm. The firm with a higher network range will therefore have access to more diverse resources. In addition, this means that the firm has an effective network, in that the resources it has access to are not duplicated or redundant (Burt, 1982). Rogers and Kincaid (1981) develop Epstein's (1961) finding that networks characterized by greater heterophily and diversity are informatively rich. Burt (1983) finds that large firms, with the highest network range, also tended to have multiplex directorate ties and access to the influence of diverse economic sectors on their boards. Building on these empirical findings, it may then be argued that the higher the network range, the easier the firms have

access to resources and other information.

Network Ranking. Lin (1999) suggests the social resource proposition, which formulates that social resources (e.g., resources accessed in social networks) exert effect on the outcome of an instrumental action (e.g., attained status). Batjargal (2000) operationalizes resource embeddedness as contact's resource characteristics that are contingent upon occupational status, authority position, and core versus peripheral sector. The second proxy measurement of firm-government relation as the extent to which an egocentric network is comprised of actors of high or low socioeconomic status and the extent to which entrepreneurs have been able to marshal financial and material resources from their personal networks.

Political Constraint. Constraint drawn from (Burt, 1992) work on structural holes is another essential structural property of ego-centric network. With respect to the firm-government network, we assume the ego firm A has a relationship with two political officials, B and C. A stands in a better position to profit from the relationship if B and C are not connected to each other. When B and C are only connected through A, a structural hole which can be exploited by A, exists between them, therefore, the ego firm A obtain information separately and with minimum redundancy from both B and C. Besides, A has the opportunity to control B and C by playing them off against each other. In another word, the ego firm A can simply arbitrage resources between B and C. In other words, if B and C are connected to each other in some way as well -either directly or through another actor- A's advantage begins to disappear. The absence of a structural hole between B and C poses a constraint on A. Network constraint applied in firm-government network portrays the ego's entrepreneurial opportunities and chances when the alters, here are the political officials, are more or less connected with each other. If the ego manager succeeds in making a large investment of time and energy to reach one of the officials, and if the official is surrounded by few structural holes with which the ego could negotiate to get a favorable return on the investment, this contact constraints the ego's chances of investment and business opportunities. It has been empirically demonstrated that constraint in negotiating related to performance in a variety of context, such as industry returns and managerial career progress (Burt, 1992).

3 Firm-Government Relations and Market Transactions

Economic transactions is the most obvious place to test the effect of network (Burt, 1992). In this section, we further investigate the market structure development in China to examine whether the value of connections with local political authority varies in different market ranging from the financial market, resource market to input/output price market, and whether the political networks could affect the firm's market transactions. We propose the hypotheses that the value of firm-government relation is correlated with the likelihood of firm's access to different markets in which the firm use political connections to secure advantages.

Financial Market and Firm-Government Relations. It is well known that Chinese government has undertaken some privatization, and took considerable steps to support the private firms, to some extent, by providing a series of property rights securities, eliminating the ideological stigma associated with private sector and granting political legitimacy to its activities. However, the government shows biases in actively supporting the firms regarding the investment approval process necessary for firms to enter new activities and the provision of finance. Haggard and Huang (2008) empirically measure the policy of financial constraints increased sharply in the 1990s when compared to the 1980s.

Despite the regulatory constraints, financing plays a significant role in firm's development. For firms in rural area, they are normally small or medium size, the primary financing method they could rely on is internal sources, namely retained earnings and principal owner financing. However, external financing is very crucial for the steady success of firms, managers seek connections with local governments in order to secure more financial opportunities and gain much reputations. There are two arguments discussing the effect of firm's political connections on financial market: on the one hand, poorly private property protection in transitional economies implies that government can not commit credibly, the government officer may expropriate the rich firms when he is revealed all the financial statements (Bai et al., 2004), from this point of view, even the firms who have good relations with local governments may not reluctant to resort to local governments for bank access; On the other hand, Bai et al. (2006) empirically investigate the positive impacts of political participation and philanthropic activities, which are defined as informal substitutes for the lack of formal protection of private properties, on the access to bank loans. Li et al. (2008) use the same survey data to demonstrate party membership may

help private entrepreneurs to obtain loans from banks or other state institutions and affords them more preferential treatment in the legal system. Zhou (2009) also argues pursuing membership in the legislative or semi-legislative organs of the Chinese government is an effective strategy for private entrepreneurs to get access to bank loans, and may be more useful for small and medium enterprises. Given the above discussion, the following hypotheses are proposed:

Hypothesis 1a. *Network range reduces a firm's reported financing obstacle.*

Hypothesis 1b. *The connections with top political officials (High ranking) reduces a firm's reported financing obstacle.*

Hypothesis 1c. *Political constraints gives firm managers an disadvantage in accessing to financial institute, thus increase a firm's reported financing obstacle.*

Firm's access to input resources and firm-government relations. In rural China, the firms can not live without the licenses of electricity and water usage, and especially, the land property use licenses. The industry-used electricity and water supply have long been regarded as public utility in the rural domain, besides, local governments control power of license distribution. With regard to land, reallocations are conducted to facilitate tax and quota collection by local government and the village-wide or township-wide reallocation are a substitute for missing land market. Local governments have the absolute power on reallocating the land use licenses, thus the by-product of rent-seeking behavior is widely observed on the issue of land property. To this extent, local governments in rural area retain some types of authority and discretionary favoritism control in allocating resources and protection, thus the good connection with local governments may help firms more easily to get access to those raw input resources.

We put the focus on land. Through legislation, provincial governments and their administrative leaders(governors) have been delegated legal responsibility for maintaining the quality and quantity of land in rural area, including the required replacement of protected agricultural land that is used for non-agricultural purpose. Regulations on the protection of basic farmland, local government is emerging as a major player in translating land and protection policy into local pattern of land use. In principal, village leaders are granted the rights to use their discretionary power over land to reallocate land as a way of guaranteeing social welfare under the jurisdiction. Considering the attributes of the firm-government networks in which the ego and alters embedded, we have the hypotheses as follows:

Hypothesis 2a. *Network range reduces a firm's likelihood to report the difficulty*

on input resource access.

Hypothesis 2b. *The connections with top political officials (High ranking) reduces a firm's likelihood to report the difficulty on input resource access.*

Hypothesis 2c. *Political constraints increase a firm's likelihood to report the difficulty on input resource access.*

Firm's access to products market and firm-government relations. Product market is said to be the most liberalized market structure in China (Nee and Opper, 2007). Competition among various firms on the product market keeps consistently high, with only a few state-owned monopolies existing. Although the products input market is more or less liberalized, the price is not wholly decided by market rule with respect of supply and demand. Planners in the Ministry of Commerce make products price guidance administratively, and the dramatic price changes are mostly observed, traced and supervised under the direction of State Commodity and Price Bureau. Price reform is aiming at radically limiting the scope of government price and market interventions, and enlarging the role of market allocation. In the field of agriculture products, which are considered as the input for most agribusiness firms, the prices of which are sometimes intervened by local governments to stop the outflow of the important raw materials. The governments are able to adjust the price system through political policies and legislative intuitions, and a variety of quality inspections and products licenses would further constrain the firm's business behavior. Firms which have political ties with specific department officials may be thus more able to survive by gaining access to products output market conferring advantages on local government relative to other firms (Huang, 2008). We assume

Hypothesis 3a: *the firm's network range has nothing to do with input/output price market.*

Hypothesis 3b: *the firm's connections with high ranking officials could help firm to get cheaper input price, but there is no potential linkage between the the value of connections with high ranking officials and the output products market. On the contrary, the firm's connections with low ranking officials have nothing to do with input price, but there is positive linkage between the the value of connections with low ranking officials and the output finished products market.*

Hypothesis 3c: *Political constraint decrease the firm's likelihood to get lower input price and higher output price.*

4 Data and Variables

4.1 The profile of sample firms

Survey area. The data was collected between 2008 and 2009 mainly in Chinese east-coastal province Zhejiang. In order to avoid the large heterogenous properties of the data set, we focus only on agribusiness firms in rural area. It is believed that the use of political connections may be more widespread in rural villages and townships, where more traditional forms of trading may persist (Nee and Oppen, 2007).

Collecting information on agribusiness firms presented several challenges. First, there was no ready information on the networks among firms from which we can design sampling procedures; second, it was difficult to obtain access to firms, especially to information regarding business transactions and firm-government relations. Personal face-to-face interviews have been done in Chinese with the questionnaire both in English and Chinese. We had recruited three college students to conduct the survey. Thus, instead of random sampling procedure, we have employed specific sources to identify and interview respondents: (1) we used personal ties (relatives, acquaintances, schoolmates and colleagues) and official partners of Kiel University to introduce us to those townships and villages; (2) we asked some local government agencies (trade unions, government statistical bureaus and agriculture bureaus) to introduce us to managers they know and invite them to cooperate with us in interviews; (3) we attend agribusiness gatherings and conferences and interview those who are willing to cooperate with us. The sample probably does not represent the Chinese rural firms as a whole, as firms in the sampled, listed as non-stated owned enterprises above designated size³ are likely to be more successful than other smaller ones. However, the listed enterprises generally represent the average level of agribusiness firms in rural area.

Characteristics of agribusiness firms. We identified totally 131 rural agribusiness firms in 26 townships dispersed in three counties (See Figure 1). However, 21 firms in Luqiao county were not reachable until the end of the survey phase. In all, we interviewed 131 managers of those firm as well as 90 sales managers for detailed information in each rural firm, each interview lasted from 2 hours to 5 hours. The surveyed firms are from five agribusiness sub-sectors, food and snack sector (39), meat manufacturing and processing (28), tea, cereal and wine processing (24), fruit

³'Non-state-owned industrial enterprises above designated size' are those with annual revenue from principal business over 5 million yuan (National Bureau of Statistics of China, 2007).

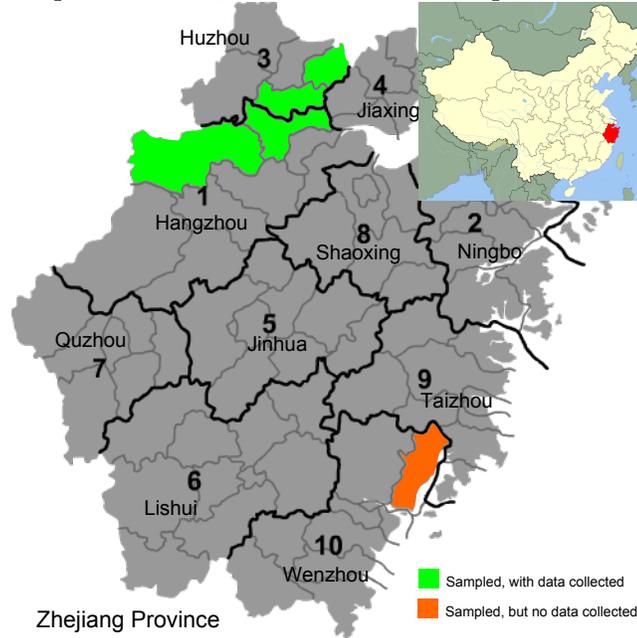
canned processing sector (14), agro-chemistry (26). We asked each respondent to introduce the firm information, such as the main products, the employment situation, the age of the firm and other related firm specific questions, then the respondents were asked to rate the overall performance of their firms, the quality of business environment and input and output price estimation on the five-likert scale, the accountancy data such as value-added output, the taxed forwarded to the government, fixed assets and sales were collected as well. Moreover, relevant network data on firm-government relations were collected. Envisaged ego-network relations such as a social-based political network was drawn based on the social network questions.

Table 1: Profile of Sample Firms (n=131)

| Characteristics | Percentage |
|--|------------|
| County Distribution | |
| Yuhang | 54.96% |
| Nanxun | 24.43% |
| Xihu | 20.61% |
| Sub-sectoral Distribution | |
| Food and snack sector | 29.77% |
| Meat manufacturing and processing | 21.37% |
| Tea, cereal and wine processing sector | 18.32% |
| Fruit canned processing | 10.68% |
| Agro-chemistry | 19.65% |
| Origin of Ownership | |
| Genetically private firms (n=74) | 56.49% |
| Publicly owned/collectively owned firms (n=57) | 43.51% |
| Size of Workforce(2007) | |
| No more than 50 | 49.01% |
| 51-100 | 23.22% |
| More than 100 | 26.77% |
| Starting Year | |
| Before 1992 | 30.11% |
| 1992-1997 | 22.68% |
| After 1997 | 47.21% |

Attitudes towards market transactions. In our interviews, many managers admitted that the economic reforms had changed their management strategies. From planned economy to market economy, almost all the local firms had to make changes within the organizations that reflect the market orientation. Many of them distinguished the attitude and engagement of rural firm from the old style organizations of the planned economy. The freedom and competition of the market economy had forced them to develop much more quickly than other competitors in order to get lead in the same industry. Referring to the market transactions, the managers found it easier for them to access to the output market. One of the managers in Nanxun county said he had counted on his own to find the sale channels and potential mar-

Figure 1: Sampled area in Zhejiang province.



Source: Own illustration

kets. In order to attract more customers he lowered the prices of the new products. On the other hand, it is still hard for most of the rural firms to get access to financial support and to raw materials. Many need social network or *guanxi* to find appropriate resources and supports. The managers’ attitudes towards market transactions can be found in Table 2.

Table 2: Frequency of market relations according to the interview (N=131)

| Frequency | Very difficult (1) | Difficult (2) | Medium (3) | Easy (4) | Very easy (5) |
|-------------------------|------------------------|-------------------------|--------------------|------------------------|------------------------|
| Raw material Access | 2.29% | 29.43% | 36.64% | 32.06% | 4.58% |
| Financial Access | 13.74% | 47.33% | 29.01% | 8.40% | 1.53% |
| Price Estimation | <-10% (1) | -10% ~ 0% (2) | Same (3) | 0% ~ 10% (4) | > 10% (5) |
| Input | 17.56% | 29.77% | 22.14% | 22.90% | 7.63% |
| Output | 6.87% | 25.19% | 17.56% | 36.64% | 13.74% |

Note 1: Price estimation is the scale estimation compared with market price.

Attitudes towards firm-government relationship. Almost all the managers in the interview strengthened it was important to build close relationship with some district administrative offices in the jurisdiction. Although the firms could not be benefited from bailouts like very early stage in the reforms, the county or district administrative office nevertheless was able to provide resources that was even valuable in the market economy: they may provide guidance through the economic reforms, helping

the local firms to implement a new investment and undertake expansion oriented development plans; they may help to set up a board of directors, making the firms more like the western organizations, and giving management significant autonomy. Many firm managers spoke repeatedly about the close alliance between the local administrative offices and his senior managers. The political offices more or less controlled the resource that the firms were hard to access, more importantly, the political officials may help firms to apply for financial funds or credits which were even hard for firm itself to get. In this case, the close relations between rural firms and rural administrative offices are important from our interview.

Data collection problems. From the face-to-face interview, the problem of selection bias would occur. Because within the pool of potential interviews, high performing firms and the firms in the politics-business network are typically selected for the survey through the cooperation with local cadres, hence, coefficient estimates of F-G relations effect will be biased upward. In order to avoid this problem, we screened all the agribusiness firms in the local community through the data bank controlled by local statistics bureau, then we contacted the screened firms independently by the way of telephone, email and personal ties. With the supporting letter issued by the local leaders, we were able to do interview with most of the firms we screened, and without the companion of local officers.

A methodological issue relevant to data collection is the relationship between inter-organizational networks and personal networks embedded in different political organizations. Relations among persons from two or more organizations may mutually shape inter-organizational relations. Personal relations have important effects in facilitating inter-organizational networks in general (Keister, 1998). In this result, data on firm-government network and firm-firm business partner network structure were collected by the standard method of name generators and name interpreters (Burt, 1992; Marsden, 2002). Name interpreters were employed to name the characteristics of partners (supplier, customer, competitor or other firms), relational duration tie age between ego and alters measured in years, alter location, and whether the alters were belong to the same business group as the ego was. The questions describing strength of relations between listed firms were also asked. The relationship were defined in three categories: E as especially close between the Ego and the alter, D as distant in the sense that they are rarely work together, total strangers or don't share any information, leave E D blank indicated two firms were neither distant nor especially close (Burt, 1992).

There are some authors suggest the name-generator approach employed in social network analysis is found to be ineffective in the field study, as managers' personal ties are regarded as a personal and business secret, and some respondents are reluctant to disclose such contacts (Yeung and Tung, 1996; Peng and Luo, 2000). Given these conditions, the existing literature which refers the importance of social capital or the effect of social network among organizations use qualitative methods¹ to assess the structure and relationship. We challenge the name generator approach to obtain more reliable data compared to widespread qualitative approach. With respect to Firm-Government network, we ask both chief manager and a lower level manager to assess their ties with specific organizations, the ties are not restricted to personal ties or *Guanxi* ties, we define the ties as the ones found in information exchange, social activities, and administrative activities, which are assumed as open information.

4.2 Variables

Dependent Variables. We use three variables to indicate firm's business behavior, more specifically, to define firm's obstacles to the business environment. *Self-reported degree of difficulty on access to raw materials (ACC-RES)* is an ordinal variables ranging from 1 to 5, with 1 denotes "very difficult", 2 "difficult", 3 "medium", 4 "easy", "very easy". With the same ordinal scale, we also have *self-reported degree of difficulty on access to financing and credit (ACC-CRE)* as well as self-reported degree of difficulty on access to products market. Here, we measure the scale of firm's input and output price compared with the average market price as a proxy of the economic transactions in products market, the firm's managers were asked to identify whether the price of their raw materials input (INPRICE) and finished products (OUTPRICE) were 10% higher, 5% higher, the same, 5% lower or 10% lower than market price.

Independent Variables. As discussed in section 2.3, we firstly introduce relational embeddenns variables to define Firm-Government relation resource. We use the specific social rank status, high rank ties (HIGH-RANK), normally measured by the manager's relation with top officers in local bureaus, and low rank ties (LOW-RANK), which is the ties between sales manager and lower level officers in local bureaus. Secondly, we consider network range (RANGE). We classify the shareholders network range into seven different categories, in which we distinguish whether the shareholders are state-owned government, local government, foreign firms, large

Table 3: Descriptive Variables (N=131)

| Variable | Description | Mean | Std. Dev. |
|------------|---|-------|-----------|
| LGVALUE | Logged value-added output in 2007 | 8.217 | 1.257 |
| LGCAPITAL | Logged price of fixed-asset in 2007 | 9.549 | 1.161 |
| LGLABOR | Logged employment in 2007 | 4.034 | 0.916 |
| P-HIGH | Number of ties with high rank officials in local bureaus | 2.962 | 1.931 |
| P-LOW | Number of ties with low rank officials in local bureaus | 4.954 | 2.260 |
| ACC-RES | Access to input or resources (1=very difficult, 5=very easy) | 3.122 | 0.912 |
| ACC-FIN | Access to credit or financial support (1=very difficult, 5=very easy) | 2.366 | 0.879 |
| RANGE | The different groups of shareholders | 2.382 | 1.085 |
| LGSHARE | Whether the officials of local government have the shares in the firm | 0.351 | 0.479 |
| CONSTRAINT | The political constraint of firm manager's ego network | 0.620 | 0.313 |
| M-EDU | Education of manager (1=high school, 5=Master degree) | 2.756 | 0.962 |
| M-PARTY | Party member of manager(0=no, 1=yes) | 0.626 | 0.486 |
| M-EXP | Manager's working experience (1=< 5 years, 5=>20 years) | 2.687 | 0.852 |
| YEAR | Age of the firm(1=0-5years, 5=> 21years) | 2.802 | 1.041 |
| OWNORG | Original registered ownership form of firm(1=TVE, 0=others) | 0.435 | 0.498 |
| REWARD | Reward issued by local government (1=yes, 0=no) | 0.343 | 0.477 |

domestic business groups, informal local officials, collective organizations or individuals. Third, network constraint (CONSTRAINT) as informal network structure indicator. These variables are based on the survey, in which the manager and one another lower level manager (in most of the cases sales manager) of each firm were asked to fill in this part simultaneously, to make sure that the politics-business networks were being explored in the largest extent.⁴ Furthermore, we have included whether there is shareholders from local bureaus (LGSHARE) or indirect shareholders from local bureaus (like the close relatives of local officials), to describe the firm's formal/informal institutional ties with local officials.

Control Variables. The characteristics of the manager is involved as one set of the control variables. Human capital is often used as control variables in the entrepreneurship studies (Zhou, 2009), our analysis which dedicates to study firm-government relations has been strongly influenced by the analysis on entrepreneurship. The education level of manager (M-EDU) is predicted through a five-scale measurement, the Communist Party membership of manager (M-PART) is measured by a binary variable, coded 1 if the manager is a party member, 0 otherwise. The working experience of managers (M-EXP) are also considered as one of the important human capital variables in our survey.

⁴Constraint is measured as $(p_{ij} + \sum_q p_{iq}p_{qj})^2$, $q \neq i, j$, where p_{ij} is the proportional strength of i 's relationship with j , as p_{ij} is the proportional strength defined above of i 's relation with j . The function defines the proportion of i 's network time and energy that directly or indirectly involves j (Burt, 1992).

The characteristics of the firm is also involved in the control variables. To control for organizational size and economic performance competencies, we include *log number of employees*(*LGLABOR*) and *organization age*(*YEAR*), measured from birth of the firm. We include *log firm's fixed-asset capital*(*LGCAL*) to measure the firm's overall performance. To control differences in ownership, we create *OWNORG* as a binary variable, coded 1 for firms which were originally registered as TVEs , code 0 for private or foreign invested as original register status. It is argued in many literature, the ownership of TVE had a external management connection with local governments (Tian, 2001),we control the variable here to test whether the ownership of TVE years before give sufficient support for the firm's recent business behavior. It is another measurement to consider the dynamics of political embeddedness. We use binary variable (*REWARD*) as a proxy measurement to show the reputation of firm among the local bureaus and political influence, coded 1 for firms are rewarded by specific political agencies in terms of product quality, trustworthy, society donation, etc, coded 0 for firms are not issued for any rewards referred above. All the variables as well as mean and standard deviation could be found in Table 3. We also examine the correlation between the party membership and political embeddedness indicators referred above, there is no significant correlation between two variables. Thus we are able to put the party membership variable in the control variable, as an indicator of the profile of the manager.

4.3 Ordinal regression models

General model Ordered logistic regression holds "Parallel regression assumption", which assumes the coefficients that describe the relationship between the lowest versus all higher categories of the response variable are the same as those that describe the relationship between the next lowest category and all higher categories (Greene, 2002), in another word, the assumption of ordinal logistic regression is the same proportional percentage among categories. In the ordered logistic model, the underlying probability score of how a one-unit change in probability of magnitude of the dependent variable is estimated as a linear function of the independent variables and set of cut points (Uzzi and Gillespie, 2002). The probability of observing outcome i corresponds to the probability that the estimated linear function, plus random error is within the range of the cut points estimated for the outcome. Generally, if we observe the respondent's answer y as

$$y = j \text{ if } \gamma_{j-1} < y^* < \gamma_j$$

where $j = 1, 2, \dots, J$ are the responses that are ordered in nature, and γ 's are $J - 1$ unknown parameters which can be named *cut points* or *threshold parameters*. We further assume $\epsilon \sim N(0, 1)$, the probability for j -th outcome is given by

$$\text{Prob}(y = j) = \Phi(\gamma_j - \beta' \mathbf{x}) - \Phi(\gamma_{j-1} - \beta' \mathbf{x})$$

Where $\Phi(\cdot)$ is the cumulative standard normal distribution, which is continuous and twice differentiable. \mathbf{x} is a vector of independent variables that affect the response. In this case, if we recognize $\Phi(\cdot)$ as ordered logistic regression, then

$$\text{Prob}(y = j|\mathbf{x}) = \frac{1}{1 + \exp(-(\gamma_j - \beta' \mathbf{x}))} - \frac{1}{1 + \exp(-(\gamma_{j-1} - \beta' \mathbf{x}))}$$

The ordinal probit model produces predicted probabilities similar to those obtained from the ordinal logit model, which is also named as proportional odds model. However, the ordinal probit model exerts a property that makes sampling from its posterior distribution particular efficient (Johnson and Albert, 2004).

Marginal effect. The marginal effect describes the partial first derivative of y with respect to x_i . It illustrates the slope of the line tangent to the logistic curve evaluated when keeping all variables at some value. The marginal effect of x_i in the general model for the j -th response could be written as:

$$\delta_{i,j} = \frac{\partial \text{Prob}[y = j|\mathbf{x}]}{\partial x_i} = [\phi(\gamma_{j-1} - \beta' \mathbf{x}) - \phi(\gamma_j - \beta' \mathbf{x})]\beta_i$$

where $\phi(\cdot)$ is the standard normal (logistic) density function, the sum inside the brackets [] can be either positive or negative. Therefore, the marginal effect on being in category j may be positive for some value of x_i and negative for others.

Informative Priors and MCMC estimation. The prior model is often applied as specifying a proper prior distribution on the vector of category γ , in order to avoid identifiability problem in the normal models. Bayesian approach is proposed to be suitable when the number of observation is small (Johnson and Albert, 2004). Regarding the prior information in the bayesian approach, the dimension of the regression parameter and the dimension of the random component of cutoffs should be both considered for the specification of a proper prior. By using the conditional means approach, prior estimates of cumulative success probabilities are often specified. The induced conditional means prior can be written as

$$g(\beta, \gamma) \propto \prod_{j=1}^M F(\gamma_j - \mathbf{x}'_j \beta)^{K_j g_j} [1 - F(\gamma_j - \mathbf{x}'_j \beta)]^{K_j(1-g_j)} f(\gamma_j - \mathbf{x}'_j \beta)$$

subject to $\gamma_1 \leq \gamma_2 \leq \dots \leq \gamma_{C-1}$. $F(\cdot)$ denotes the link distribution function, $f(\cdot)$ is the density, $K_j g_j$ and $K_j(1 - g_j)$ are the specific parameters using a Dirichlet density (Johnson and Albert, 2004). Another advantage of bayesian approach is to judge the overall goodness of fit of an ordinal regression model, we will do the judgement in the next section.

5 Quantitative Findings

5.1 Ordered logistic analysis

We assume that the logit of the probability that a firm manager's attitudes towards market transactions is a linear function of the firm characteristics and firm-government relationships. That is, we assume a proportional odds model of the form

$$\log\left(\frac{\theta_{ic}}{1 - \theta_{ic}}\right) = \beta_0 + \beta_i \times F_i + \beta_j \times FG_j$$

where F_i and FG_j illustrate the variables of firm's basic characteristics and firm-government network relations respectively.

Correlation table(see Appendix: figures and tables) summarizes the correlations coefficient for each variables of the frameworks for firms' access to important market relations, let us say, to raw materials and resources, to financial support and credit, and to products market like input and output price of products. The individual correlations between the variables do not suggest obvious problems of pairwise collinearity, which implies the appropriateness the use of all independent variables in a regression model. We find significant correlations between the determinants and the dependent variables as expected.

Table 4-5 respectively presents the findings of our ordered logit analysis of firm's access to financing, raw material resources and to products price market. We define firm's accesses to these four market mechanisms as scenarios, model (1)-(4) represents column (1)-(4) of each scenario, which we will discuss at follows. Model (1) in each table shows the dependent variables regressed on the measure of formal institutional ties, let us say, the local government's share in the firm and the network

Table 4: Ordered logit estimates: Difficulties of Firms' access to financial market and raw materials.

| | Financial market | | | | Raw Materials | | | |
|------------|--------------------|---------------------|---------------------|----------------------|--------------------|---------------------|----------------------|---------------------|
| | (1) | (2) | (3) | (4) | (1) | (2) | (3) | (4) |
| LGLABOR | 0.197 (0.82) | 0.210 (0.86) | 0.0767 (0.29) | 0.0484 (0.18) | -0.0516 (-0.22) | -0.0546 (-0.23) | 0.00241 (0.01) | -0.100 (-0.39) |
| YEAR | 0.169 (0.76) | 0.209 (0.93) | 0.258 (1.06) | 0.381 (1.51) | 0.237 (1.11) | 0.344 (1.56) | 0.355 (1.49) | 0.327 (1.32) |
| OWNORG | -0.879* (-1.92) | -1.113** (-2.36) | -1.294** (-2.53) | -1.472*** (-2.88) | -0.573 (-1.28) | -0.996** (-2.08) | -0.884* (-1.71) | -1.064** (-2.01) |
| REWARD | 0.161 (0.42) | 0.153 (0.40) | 0.0141 (0.03) | -0.134 (-0.31) | 0.461 (1.21) | 0.528 (1.37) | 0.466 (1.16) | 0.523 (1.26) |
| M-EDU | 0.393* (1.84) | 0.365* (1.70) | 0.392* (1.68) | 0.521** (2.12) | 0.0954 (0.45) | 0.0545 (0.25) | 0.0466 (0.20) | 0.0695 (0.29) |
| M-PARTY | 0.472 (1.08) | 0.286 (0.63) | -0.133 (-0.27) | -0.214 (-0.42) | 1.112** (2.50) | 0.843* (1.83) | 0.324 (0.64) | 0.391 (0.77) |
| M-EXP | -0.0721 (-0.30) | -0.0488 (-0.20) | -0.207 (-0.75) | -0.188 (-0.63) | -0.213 (-0.89) | -0.258 (-1.06) | -0.347 (-1.31) | -0.0792 (-0.27) |
| LGSHARE | 0.348 (0.87) | -0.0292 (-0.07) | -0.196 (-0.43) | -0.241 (-0.52) | 1.151*** (2.83) | 0.622 (1.43) | 0.672 (1.48) | 0.605 (1.33) |
| RANGE | 0.467** (2.50) | 0.360* (1.85) | 0.406** (1.98) | 0.387* (1.88) | 0.591*** (3.02) | 0.386* (1.92) | 0.275 (1.32) | 0.261 (1.24) |
| HIGH-RANK | | 0.229** (2.08) | 0.227* (1.90) | 0.185 (1.52) | | 0.350*** (3.10) | 0.308** (2.53) | 0.301** (2.44) |
| LOW-RANK | | 0.0820 (0.92) | 0.0734 (0.78) | 0.215* (1.83) | | 0.161* (1.81) | 0.133 (1.43) | 0.169 (1.46) |
| CONSTRAINT | | | -1.516 (-1.59) | -1.681* (-1.71) | | | -2.803*** (-2.88) | -2.564** (-2.57) |
| LOC2 | | | | -0.367 (-0.73) | | | | -1.247** (-2.37) |
| LOC3 | | | | 1.350* (1.80) | | | | -0.0206 (-0.03) |
| <i>N</i> | 131 | 131 | 131 | 131 | 131 | 131 | 131 | 131 |

t statistics in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

range among the shareholders with the effects of the control variables; Model(2) adds two more variables sequentially, and shows the dependent variables regressed on the measure of informal political resource ties, namely high (or low) ranked ties with the effects of the control variables. Model(3) adds one more variable, shows the dependent variables regressed on the measure of informal political individual ties,

Table 5: Ordered logit estimates: Price scale estimation of Firms' access to Input and output products market.

| | Input | | | | Output | | | |
|------------|----------------------|----------------------|---------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| | (1) | (2) | (3) | (4) | (1) | (2) | (3) | (4) |
| LGLABOR | 0.159 (0.73) | 0.128 (0.58) | -0.0543 (-0.23) | -0.161 (-0.65) | -0.477** (-2.13) | -0.558** (-2.42) | -0.609** (-2.44) | -0.704*** (-2.76) |
| YEAR | -0.0419 (-0.20) | -0.0476 (-0.23) | -0.0659 (-0.30) | -0.336 (-1.47) | -0.154 (-0.75) | -0.137 (-0.66) | -0.0253 (-0.11) | -0.218 (-0.91) |
| OWNORG | 0.222 (0.53) | 0.179 (0.41) | 0.439 (0.94) | 0.581 (1.24) | 0.642 (1.51) | 0.421 (0.92) | 0.317 (0.64) | 0.457 (0.93) |
| REWARD | -0.538 (-1.46) | -0.535 (-1.46) | -0.666* (-1.70) | -0.194 (-0.47) | -0.284 (-0.77) | -0.229 (-0.61) | -0.235 (-0.60) | 0.000246 (0.00) |
| M-EDU | -0.285 (-1.35) | -0.319 (-1.49) | -0.325 (-1.39) | -0.468* (-1.94) | -0.155 (-0.75) | -0.193 (-0.93) | -0.272 (-1.21) | -0.302 (-1.32) |
| M-PARTY | 0.621 (1.53) | 0.527 (1.26) | 0.427 (0.91) | 0.501 (1.05) | 0.690* (1.67) | 0.499 (1.18) | 0.440 (0.94) | 0.587 (1.22) |
| M-EXP | -0.816*** (-3.58) | -0.781*** (-3.41) | -0.636** (-2.50) | -0.224 (-0.82) | -0.627*** (-2.85) | -0.583*** (-2.63) | -0.648*** (-2.58) | -0.270 (-0.97) |
| LGSHARE | -0.292 (-0.79) | -0.348 (-0.88) | -0.266 (-0.66) | -0.423 (-1.01) | 0.202 (0.53) | -0.0914 (-0.22) | -0.0362 (-0.08) | -0.149 (-0.34) |
| RANGE | 0.0531 (0.30) | 0.0492 (0.25) | 0.0708 (0.34) | 0.0188 (0.09) | 0.516*** (2.79) | 0.418** (2.06) | 0.370* (1.75) | 0.332** (2.58) |
| HIGH-RANK | | -0.0407 (-0.40) | -0.107 (-0.97) | -0.0857 (-0.78) | | 0.0692 (0.64) | 0.0467 (0.40) | 0.0500 (0.43) |
| LOW-RANK | | 0.0998 (1.23) | 0.132 (1.54) | -0.0332 (-0.31) | | 0.183** (2.11) | 0.173* (1.91) | 0.0979 (0.91) |
| CONSTRAINT | | | 0.351 (0.41) | 1.204 ** (2.33) | | | -1.110 (-1.24) | -0.691 (-0.75) |
| LOC2 | | | | -2.026*** (-3.96) | | | | -1.647*** (-3.02) |
| LOC3 | | | | -2.250*** (-3.12) | | | | -1.177* (-1.74) |
| <i>N</i> | 131 | 131 | 131 | 131 | 131 | 131 | 131 | 131 |

t statistics in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

that is the political constraint of the firm manager, and model(4) displays all the independent variables.

In the following we do hypothesis testing on four scenarios referred above. We define the constrained models as the one without any relational variables, and the unstrained models are those with all variables included. As we see in Table 6, the

LR-chi square difference between the two models of first scenario, firm’s access to finance, is 17.54 with 6 degree of freedom (d.f), which is significant at the 0.0075 level. The BIC and AIC statistics also both favor the unconstrained model, which includes the relational network variables. Likelihood-ratio tests indicate that for all scenarios the included embedded network variables add significantly to the fit of the model. The models show the firms’ accesses to market transactions are significantly improved by firm-government relations, although the size and scope of effect vary with dependent variables.

Table 6: Likelihood-ratio test of ordinal regression models

| | Unconstrained model $F_i, FG_j \neq 0$ (vs. constrained model $FG_j = 0$) | | | |
|-------------------------|---|---------|---------------|--------------|
| | LR-stat | Chi2(6) | AIC | BIC |
| Access to finance | 17.54 | 0.0075 | 317.08(322.6) | 357.1(368.3) |
| Access to raw materials | 27.52 | 0.0001 | 309.3(324.6) | 359.2(361.2) |
| Input price | 17.98 | 0.0063 | 413.6(419.9) | 457.0(468.3) |
| Output price | 23.96 | 0.005 | 391.9(403.9) | 441.3(446.0) |

Model (1)-(4) in table 4 report ordered logit regression results for testing Hypotheses 1a-1c. Generally, the coefficients for political relations in the regressions have the expected signs and are statistically significant. The positive coefficient of RANGE variable indicates the cumulative probability starting at "1" end of the scale increases as the number of network ties increases. That means, the large the range of firm’s shareholders is, the more odds will be that firm manager would report an easier access to financial market. Besides, the coefficient of local government’s share in the firm is found negative and insignificant. This suggests the the local officials who directly or indirectly hold the shares in the firm may not helpful for firms on financial access. Regarding the relational resource ties, we find high-rank and low-rank positively affect the firm’s confidence to access to financial market, thus hypotheses 1b can be efficiently tested through regression estimation. The constraint of manager’s individual ties with local officials is proved to strongly affect the firm’s judgement on financing difficulties, negative sign means when the firm manager finds himself more politically constrained, he may consider it more difficult to have access to financial market, which supports the hypothesis. However, we do not find the significance of Communist Party membership on obtaining the credit, like that Li et al. (2008) suggest in their paper. One explanation is that Li et al. analyzes the firm’s access to formal financing like banks or other state institutions. In our survey, we allow the respondents to report the overall difficulty to credit or financing, including formal

or informal ways. It apparently suggests that through political embeddedness, firms have much more confidence in obtaining the financing.⁵

In the control variables, we have found the high education level of managers increased the odd of self-reporting degree of difficulty in access to financing, which is consistent to much literature that education helps firms to perform better. The variable of TVE ownership as initially registered shows negative coefficient with significance. If we take model (4) as an example, for any fixed category j , the estimated odds that the firms are TVEs as initial status is less easier to have access to resources, equal $0.23(e^{-1.472})$ times less than estimated odds for originally registered non-TVEs. Through this result, we are able to read, the privatization of TVEs has given rural firms more control and freedom, thus they find it easier to market transactions in the market economy. The property rights of firms seem not appropriate to establish as an indicator of firm-government relations, as much research work suggested.

Column (5)-(8) (Model (1)-(4) on the right side) of Table 4 report the effects of firm-government relations on firm's self-reported degree of difficulty in access to raw material resources. In consistent with the Hypothesis 2b, we find that political high-ranking ties have significant effect on firm's self-reporting of raw material resource. This result suggests high rank ties with decision power, give firms more information and marketing resources, which increase firm's confidence in access to rural resources. Constraint in this term, is also significant and negative. The political structural holes increase firm's self estimation on raw materials due to the sufficient information exchange and favorable political guidance.

Table 5 illustrates the effects of political relations on firm's self-reported degree of difficulty in economic transactions, especially whether the ties help to influence the products prices. Unfortunately, in terms of the input products market, there is no significant sign from relational variables except the political constraint, which means, few structural holes of political network increase firms' estimation on input price, the hypothesis is partially tested. In terms of political relations on firms' output price estimation, RANGE and LOW-RANK ties show significant effects on firm's output products price, the result is not consistent when we incorporate all the variables together. Nevertheless, we can still find the positive effect of RANGE

⁵Informal credit or financing is not legally allowed by the national policies, however, in Zhejiang province informal credit is treated as an financing experiment which is allowed by central government. Local government has lots of resources and power on informal financing, which helps firms to realize the importance of obtaining informal credit through good relations with local government.

on manager’s output price calculation, which suggests that, the more varied is the firm’s director of board, the higher competitive prices the firm would get in the output market.

With regard to marginal effect, we report the marginal effect results of all scenarios in table 7, holding the other constant at their mean. Marginal effects provide a good approximation to the amount of change in dependent variable that will be produced by a one unit change in a specific independent variable. For example, if we focus on the first scenario, if there is one unit increase of HIGH-RANK or LOW-RANK, the probability of firm’s attitudes towards difficulty in financial access would increase by 0.017991 or 0.02076, which is significantly smaller than that of CONSTRAINT (0.16259). Transforming to odds, we can say that the odds of feeling more easily to get to financial support are increased by $e^{0.16}$ for each unit decrease in the level of constraint, holding other variables constant.

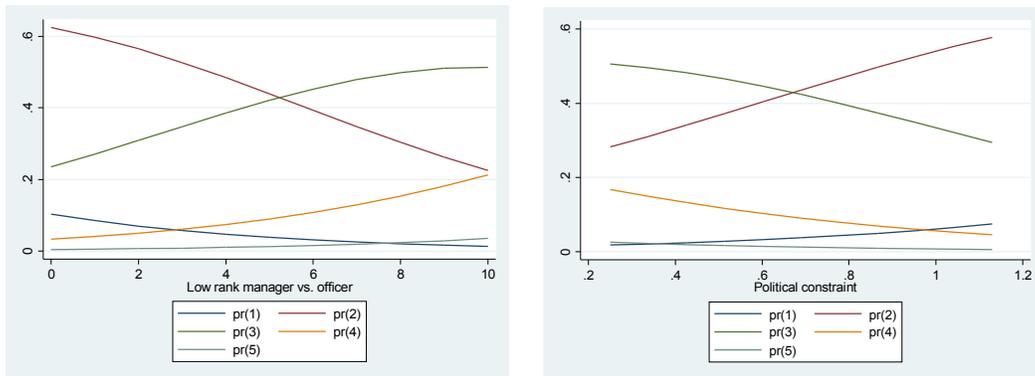
Table 7: Average marginal effect of each independent variable.

| | Financial Access | Raw material Access | Input price | Output price |
|------------|------------------|---------------------|-------------|--------------|
| LGLABOR | 0.00468 | 0.00941 | 0.0152 | .07134 |
| YEAR | 0.03684 | 0.03073 | 0.0152 | 0.02141 |
| OWN10 | 0.13504 | 0.09670 | 0.04623 | 0.04283 |
| REWARD | 0.01291 | 0.0495 | 0.02382 | 0.00200 |
| M-EDU | 0.05040 | 0.00653 | 0.04442 | 0.02826 |
| M-PARTY | 0.02082 | 0.03599 | 0.04704 | 0.05518 |
| M-EXP | 0.01817 | 0.0074 | 0.02342 | 0.02676 |
| LGSHARE | 0.02319 | 0.05733 | 0.0332 | 0.01674 |
| RANGE | 0.03747 | 0.02454 | .00132 | .03432 |
| HIGH-RANK | 0.01791 | 0.02830 | 0.00821 | 0.00437 |
| LOW-RANK | 0.02076 | 0.01582 | 0.00101 | 0.0100 |
| CONSTRAINT | 0.16259 | 0.24082 | 0.11984 | 0.06668 |
| LOC2 | 0.03475 | 0.24082 | 0.16703 | 0.15346 |
| LOC3 | 0.12998 | 0.0019 | 0.18033 | 0.11126 |

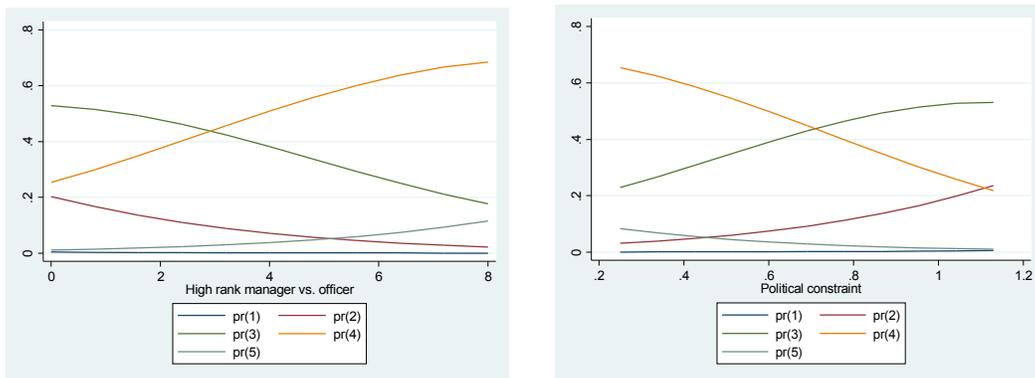
We can also find how the probability of being in each category changes as a function of one of the continuous variables, holding the other variables constant. Figure 2 display how the significant variables affect the probability of being in each category changes. For example, in scenario a) firm’s access to financial market, the low rank

Figure 2: Predicted probabilities of chosen categories

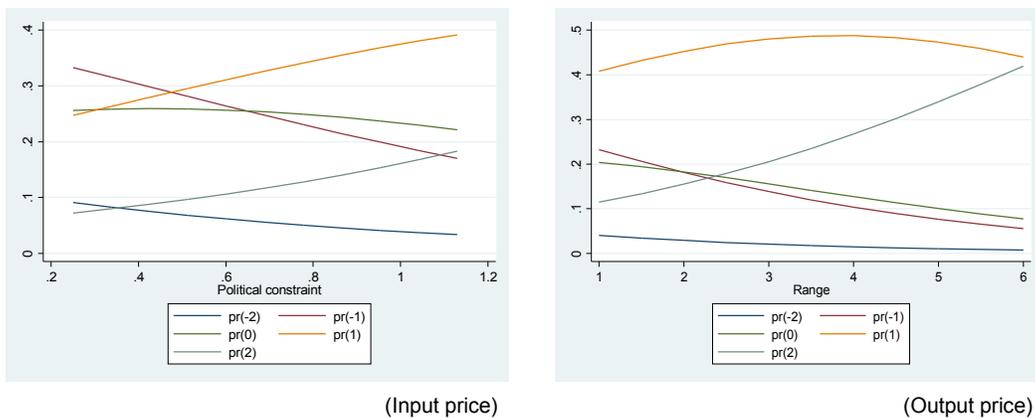
a) Predicted probabilities of financial access for firms.



b) Predicted probabilities of raw material access for firms.



c) Predicted probabilities of input/output price estimation for firms.



Source: own illustration.

manager with officer's ties increases, the probability of firm managers choosing 4 or 5 will positively increase, which denote easier access to financial support when firm manager has close ties with low rank political officials. Other plot can be explained

in the same way.

In summary, we find some evidence that firm-government relations of firms exert a larger positive effect on firms' market transactions. These findings support the view that the network connections between firm and local government provides significant economic and business benefits for rural firms in the context of transitional economy in China.

5.2 Ordinal probit analysis and Bayesian estimation

After applying Cowles (1996)'s algorithm to the interview data, we initialize the parameter vectors with the maximum likelihood values. We then perform 20,000 Monte Carlo Markov chain (MCMC) iterations. The bayesian sample estimates of the posterior means of the parameter values of the first scenario are displayed in Table 8, here γ_i indicates the value of category cut-off. The estimations indicate the posterior means agree well with the probit regression which applies the maximum likelihood estimation in Table 8. Other statistics of scenario can be find in Appendix. This fact suggests that the posterior distribution of the parameter estimates is approximately normal. The traces and density plot of the posterior distribution of each variable in the first scenario are displayed in Appendix, which support the normal distribution conclusion.

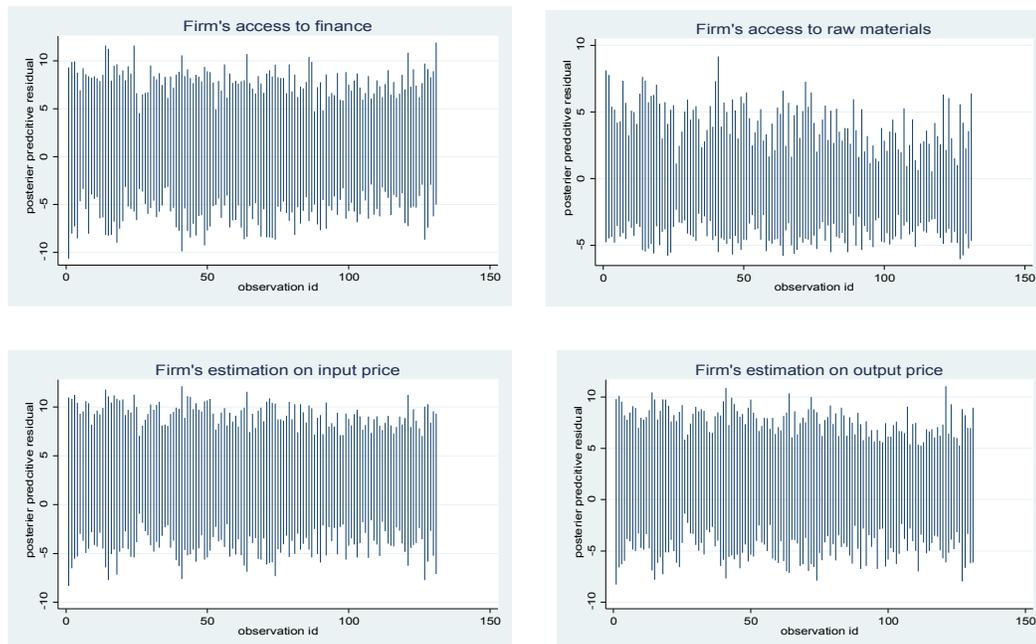
Table 8: Statistics for ordinal probit models and simulation models for firm's access to finance

| Parameter | Ordinal probit model | | MCMC simulation model | |
|------------|----------------------|-------|-----------------------|---------------|
| | Estimate | S.D | Posterior Mean | Posterior S.D |
| LGLABOR | 0.085 | 0.133 | 0.087 | 0.133 |
| YEAR | 0.172 | 0.126 | 0.176 | 0.127 |
| OWN10 | -0.688 | 0.267 | -0.704 | 0.268 |
| REWARD | 0.117 | 0.218 | 0.118 | 0.219 |
| M-EDU | 0.207 | 0.125 | 0.214 | 0.125 |
| M-PARTY | 0.059 | 0.258 | 0.056 | 0.260 |
| M-EXP | -0.001 | 0.131 | 0.000 | 0.132 |
| LGSHARE | 0.007 | 0.244 | 0.001 | 0.244 |
| RANGE | 0.240 | 0.114 | 0.250 | 0.114 |
| HIGH-RANK | 0.127 | 0.062 | 0.134 | 0.062 |
| LOW-RANK | 0.044 | 0.050 | 0.045 | 0.051 |
| CONSTRAINT | 0.297 | 0.324 | 0.299 | 0.325 |
| γ_2 | 1.710 | 0.182 | 1.712 | 0.184 |
| γ_3 | 2.954 | 0.235 | 2.951 | 0.239 |
| γ_4 | 4.090 | 0.400 | 4.092 | 0.401 |

Note: 1. Statistics for ordinal probit and simulation models of other scenarios can be found in Appendix

The MCMC algorithm used to estimate the posterior means of the parameter estimates is the vector of latent variables Z . As discussed in the section 4.3, these variables provide a convenient diagnostic for detecting outliers and assessing goodness of fit. We can examine the posterior-predictive residual to further investigate whether there exists over-dispersion in the likelihood-based analysis. If we denote y_i^* as the posterior distribution of the simulated manager’s attitudes toward firm’s access to financial support and let y_i denote the observed attitudes category, then the posterior-predictive residual distribution for the i th observation is defined as the distribution of $y_i - y_i^*$. The plots of the estimated interquartile ranges of the posterior-predictive residuals is provided in Figure 3. Since all the ranges do cover 0 which indicate no over-dispersion. The appearance of four scenario plots indicate there is no lack of fit.

Figure 3: Inter-quartile ranges of the posterior-predictive residuals of four scenarios



Source: own illustration.

6 Conclusion and Discussions

In contract to studies that have focused on investigating a firm’s internal capabilities or the context-specified ownership arrangement in China, this study tries to consider how firms win advantages and collective gains through social ties and networks

with local government. Moreover, we do not fall into the implications of *Guanxi*, which appear in almost every paper describing the specific inter-personal exchange relationship in China. Based on the embeddedness theory and the idea of ego-centric network (Uzzi and Gillespie, 2002), we argue firm-government relation is a mechanism by which the firms gain competencies and resources from one network tie with local government to create value in exchange with other social ties. In this sense, we broaden the definition of political connection or political capital, which only emphasize the manager's membership status in a legislative organ or in the Communist Party (Li et al., 2008; Zhou, 2009), the firm's firm-government relation in our analysis could be regarded as a illustration of social network transitivity.

After conducting a in-depth research survey in rural area of Zhejiang province in 2008, we have empirically studied the effects of firm-government relationship on firm's business behavior through three mechanisms: firm's access to raw materials, to financing and credit, and to the price market. Consistent with our hypotheses, the quantitative analysis showed the significant influences of firm's connection with local governments on economic transactions. The strong individual relational connections and institutional embeddedness increase the likelihood that the firm reports fewer obstacles on the entry of raw materials, financing and products price market. These findings support the arguments that the politics still plays a very important role in the success of business in the transitional economy like China.

Much literature studying the rural China emphasizes the strategic alliance partner the local government plays in facilitating transactions between the firm and various other organizations, such as bank, the tax collectors and other government agencies (Walder, 1995; Nee, 1996), and we operationalize this basic arguments by incorporating relational embeddedness (like HIGH-RANK or LOW-RANK) and resource embeddedness (like RANGE and CONSTRAINT) as the network indicators of firm-government relation. However, as most of the results showed significant effects of strong ties with local officers and ties with high rank officers on business channels, we have to admit, the economic powers are still controlled under some people in local area. Although China's central government emphasizes the success of market economy, political influences on business are dramatically strong. According to the empirical results and the qualitative interview, the firms without good connections to local bureaus would show less confidence in running a good business.

Much literature suggests inter-firm alliances have been an increasingly popular

vehicle for inter-organizational strategic relations in recent years, and the firm-firm network helps to obtain access to needed resources, to learn new skills, to enhance competitive parity and to broaden the potential market shares (Clegg et al., 2007), due to our data limitation our result unfortunately can not find any information on inter-firm network in rural China.

China's market supporting policies are in practice for 30 years, but the institutional environment is far from perfect, and is likely to remain so for some time. In this result, the firm's relationship with local government shows strong effect on firm's business behavior. Given the multidimensional political agencies even in the rural area, we further plan to go deeper in investigating the structure and the characteristics of firm-government network, and to analyze how the political embeddedness influences firm's decision, like mobility. We also have plans to explore more survey data in different regions to obtain a reliable and more convincing result.

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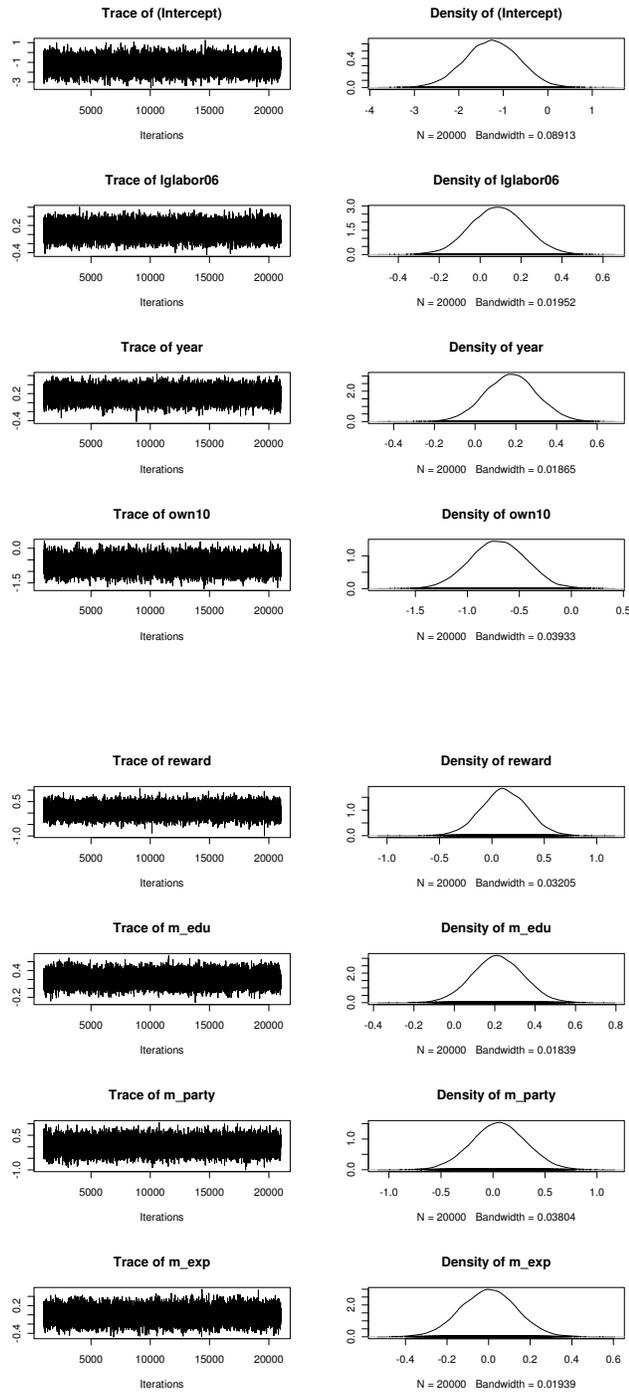
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Appendix: Figures and Tables

Figure 4: Trace of the sampled output and density estimates for firm's access to finance(Since other densities of scenarios have same shapes as the first scenario we present, the other plots are omitted here.)



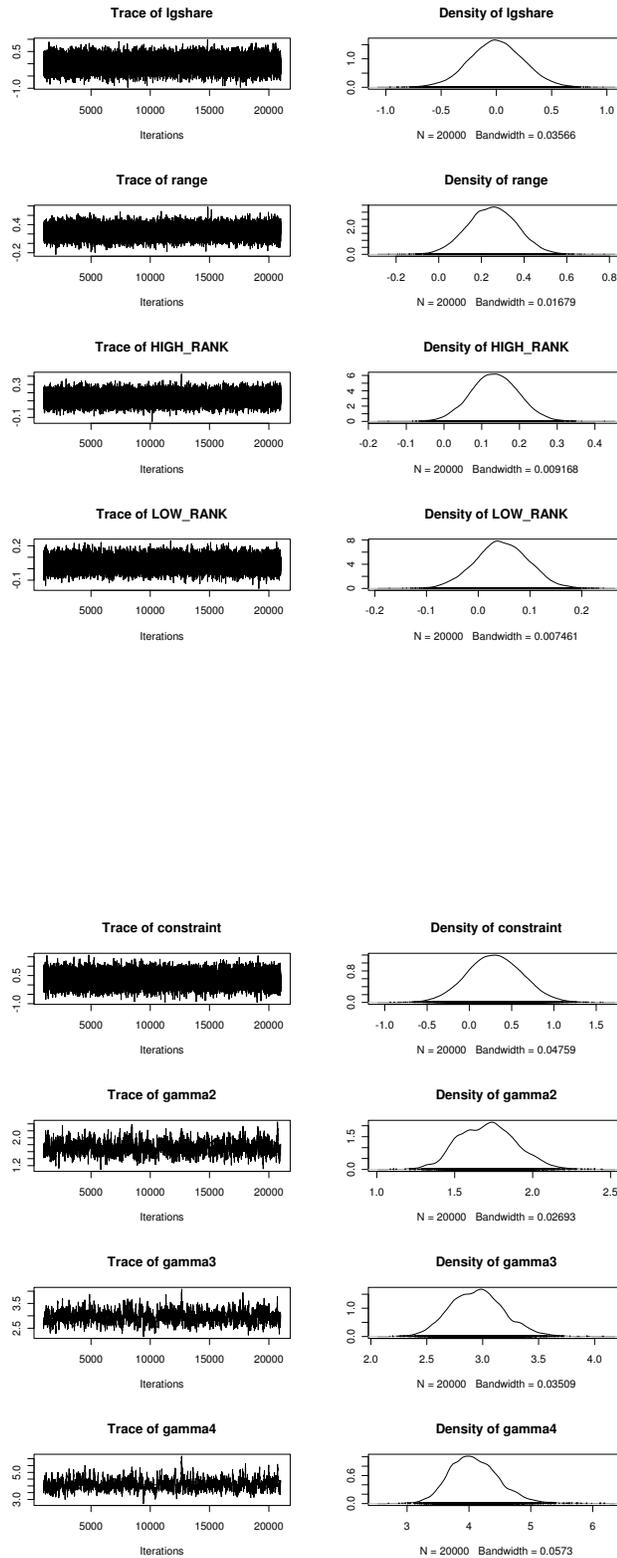


Table 9: Cross-correlation table

| Variables | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) | (14) |
|-----------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|--------------------|--------------------|---------------------|--------------------|--------------------|--------|
| (1) LGVALUE | 1.0000 | | | | | | | | | | | | | |
| (2) LGLABOR | 0.6483 (0.0000) | 1.0000 | | | | | | | | | | | | |
| (3) LGCAPITAL | 0.7268 (0.0000) | 0.5942 (0.0000) | 1.0000 | | | | | | | | | | | |
| (4) YEAR | 0.0964 (0.2733) | 0.1692 (0.0534) | 0.1364 (0.1204) | 1.0000 | | | | | | | | | | |
| (5) M-EDU | 0.5393 (0.0000) | 0.2763 (0.0014) | 0.3209 (0.0002) | 0.0204 (0.8175) | 1.0000 | | | | | | | | | |
| (6) M-PARTY | 0.5096 (0.0000) | 0.2604 (0.0027) | 0.3372 (0.0001) | 0.1868 (0.0327) | 0.5440 (0.0000) | 1.0000 | | | | | | | | |
| (7) M-EXP | 0.4317 (0.0000) | 0.4336 (0.0000) | 0.3399 (0.0001) | 0.1725 (0.0488) | 0.1785 (0.0414) | 0.1612 (0.0658) | 1.0000 | | | | | | | |
| (8) OWN10 | -0.1824 (0.0371) | -0.0796 (0.3663) | 0.0248 (0.7788) | 0.5838 (0.0000) | -0.1138 (0.1958) | -0.0216 (0.8064) | 0.0152 (0.8628) | 1.0000 | | | | | | |
| (9) REWARD | 0.1530 (0.0811) | 0.2745 (0.0015) | 0.2674 (0.0020) | 0.2005 (0.0217) | 0.0502 (0.5689) | 0.0941 (0.2851) | 0.1109 (0.0043) | 0.1109 (0.2074) | 1.0000 | | | | | |
| (10) LGSHARE | 0.0230 (0.7942) | -0.0322 (0.7152) | 0.1775 (0.0425) | 0.0791 (0.3690) | 0.1041 (0.2366) | 0.1721 (0.0494) | -0.1037 (0.2296) | 0.1931 (0.0272) | 0.1414 (0.1072) | 1.0000 | | | | |
| (11) RANGE | 0.4715 (0.0000) | 0.4061 (0.0000) | 0.5151 (0.0000) | -0.0959 (0.2758) | 0.2302 (0.0082) | 0.1855 (0.0339) | 0.2304 (0.0081) | -0.1248 (0.1556) | 0.1908 (0.0290) | 0.2582 (0.0029) | 1.0000 | | | |
| (12) HIGH-RANK | 0.0947 (0.2819) | 0.0374 (0.6712) | 0.1758 (0.0446) | 0.0192 (0.8280) | 0.1399 (0.1109) | 0.1815 (0.0380) | 0.0582 (0.5091) | 0.1855 (0.0339) | 0.1230 (0.1617) | 0.4219 (0.0000) | 0.3816 (0.0000) | 1.0000 | | |
| (13) LOW-RANK | 0.3129 (0.0003) | 0.1999 (0.0221) | 0.3291 (0.0001) | 0.1139 (0.0232) | 0.2674 (0.0020) | 0.3487 (0.0000) | 0.0005 (0.9956) | 0.1205 (0.1705) | 0.0376 (0.5137) | 0.3347 (0.0001) | 0.2583 (0.0029) | 0.0754 (0.3920) | 1.0000 | |
| (14) CONSTRAINT | -0.0071 (0.9361) | 0.0289 (0.7429) | -0.0393 (0.6557) | 0.0539 (0.9522) | -0.0042 (0.9619) | 0.1044 (0.2355) | 0.0506 (0.5656) | 0.0730 (0.4071) | 0.0261 (0.7670) | 0.0404 (0.6471) | -0.0261 (0.7672) | 0.0658 (0.4553) | 0.1337 (0.1280) | 1.0000 |

Table 10: Statistics for ordinal probit models and simulation models for firm's access to raw materials

| Parameter | Ordinal probit model | | MCMC simulation model | |
|------------|----------------------|-------|-----------------------|---------------|
| | Estimate | S.D | Posterior Mean | Posterior S.D |
| LGLABOR | -0.057 | 0.134 | -0.058 | 0.133 |
| YEAR | 0.202 | 0.127 | 0.206 | 0.127 |
| OWNORG | -0.504 | 0.267 | -0.514 | 0.270 |
| REWARD | 0.242 | 0.218 | 0.245 | 0.218 |
| M-EDU | 0.014 | 0.125 | 0.013 | 0.124 |
| M-PARTY | 0.476 | 0.258 | 0.488 | 0.260 |
| M-EXP | -0.101 | 0.131 | -0.101 | 0.132 |
| LGSHARE | 0.361 | 0.246 | 0.371 | 0.245 |
| RANGE | 0.254 | 0.116 | 0.262 | 0.115 |
| HIGH-RANK | 0.189 | 0.063 | 0.195 | 0.062 |
| LOW-RANK | 0.107 | 0.051 | 0.110 | 0.051 |
| CONSTRAINT | 0.099 | 0.321 | 0.101 | 0.324 |
| γ_2 | 1.870 | 0.298 | 1.869 | 0.297 |
| γ_3 | 3.190 | 0.310 | 3.192 | 0.312 |
| γ_4 | 4.953 | 0.376 | 4.966 | 0.375 |

Table 11: Statistics for ordinal probit models and simulation models for firm's estimation on input price

| Parameter | Ordinal probit model | | MCMC simulation model | |
|------------|----------------------|-------|-----------------------|---------------|
| | Estimate | S.D | Posterior Mean | Posterior S.D |
| LGLABOR | 0.068 | 0.128 | 0.067 | 0.129 |
| YEAR | -0.018 | 0.119 | -0.019 | 0.119 |
| OWNORG | 0.139 | 0.250 | 0.146 | 0.250 |
| REWARD | -0.277 | 0.209 | -0.279 | 0.210 |
| M-EDU | -0.173 | 0.118 | -0.177 | 0.119 |
| M-PARTY | 0.302 | 0.245 | 0.311 | 0.246 |
| M-EXP | -0.446 | 0.128 | -0.454 | 0.129 |
| LGSHARE | -0.253 | 0.233 | -0.266 | 0.235 |
| RANGE | 0.007 | 0.109 | 0.008 | 0.109 |
| HIGH-RANK | 0.057 | 0.058 | -0.002 | 0.058 |
| LOW-RANK | 0.044 | 0.048 | 0.058 | 0.048 |
| CONSTRAINT | 0.222 | 0.030 | 0.224 | 0.029 |
| γ_2 | 1.433 | 0.319 | 1.446 | 0.320 |
| γ_3 | 2.440 | 0.334 | 2.443 | 0.339 |
| γ_4 | 4.080 | 0.400 | 4.081 | 0.401 |

Table 12: Statistics for ordinal probit models and simulation models for firm's estimation on output price

| Parameter | Ordinal probit model | | MCMC simulation model | |
|------------|----------------------|-------|-----------------------|---------------|
| | Estimate | S.D | Posterior Mean | Posterior S.D |
| LGLABOR | -0.324 | 0.131 | -0.331 | 0.131 |
| YEAR | -0.080 | 0.121 | -0.082 | 0.122 |
| OWNORG | 0.264 | 0.255 | 0.271 | 0.256 |
| REWARD | -0.143 | 0.211 | -0.150 | 0.211 |
| M-EDU | -0.141 | 0.120 | -0.148 | 0.120 |
| M-PARTY | 0.326 | 0.248 | 0.336 | 0.249 |
| M-EXP | -0.335 | 0.128 | -0.344 | 0.129 |
| LGSHARE | -0.128 | 0.236 | -0.132 | 0.236 |
| RANGE | 0.203 | 0.012 | 0.208 | 0.012 |
| HIGH-RANK | 0.062 | 0.059 | 0.063 | 0.059 |
| LOW-RANK | 0.115 | 0.049 | 0.118 | 0.049 |
| CONSTRAINT | -0.136 | 0.302 | -0.143 | 0.302 |
| γ_2 | 1.281 | 0.204 | 1.280 | 0.205 |
| γ_3 | 3.080 | 0.210 | 3.081 | 0.211 |
| γ_4 | 4.409 | 0.390 | 4.408 | 0.391 |

CHAPTER 5

ESTIMATING THE IMPACT OF NETWORK RELATION TO LOCAL GOVERNMENT ON TECHNICAL EFFICIENCY IN CHINESE AGRIBUSINESS INDUSTRY

Jiangping Han and Christian Henning

Abstract

Over the last decades, China's GDP has achieved the significant average growth rate in the world. Various scholars highlight special institutional framework conditions in particular the role of local government as a key factor explaining China's economic success. However, while some scholars like Weingast *et al.*(1995) emphasize the special institutional framework condition implying competition among local government known as Market Preserving Federalism Chinese Style (MPFCS), other scholars like Tian(2001) emphasizes the importance of government-firm relations as a driving factor of firms' economic performance in China. Thus, there hardly exists a common consistent approach explaining the role of local government in economic performance and the development of entrepreneurship.

In this regard this paper analyzes the impact of firm-government relations on firm's economic performance at the micro level. Particularly, we estimate a stochastic frontier production function incorporating social network relations to local government as determinants of firm's technical efficiency. Major results imply a significant positive impact of firm's network relations to local government on technical efficiency. However, after correcting aggregate outputs for firm specific terms of trade, this positive impact of firm-government relations vanishes. Interpreting our results we conclude in contrast to Tian(2001) that, while network relations to local government correspond to valuable resources at the micro level, these do not necessarily translate into productive resources at the macro level. Thus, given the institutional background with social planning in China, economy good connections to local government mainly imply that firms have good access to scarce inputs or to lucrative output markets. However, at the macro level favorable market access does not necessarily correlate with firm's efficiency and hence do not imply higher economic performance.

key words: technical efficiency, firm-government relations, stochastic-frontier estimation, China

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1 Introduction

The economic reforms launched by the Chinese Communist Party (CCP) two decades ago have helped China to jump into the lines of powerful nations worldwide. Along with extensive decline in direct control from government over economy according to a series of national economy and political policies, an increase in the use of market forces and international market resources have been widely accepted by most Chinese firms. However, China's success would not come true without political participation in the economy development and business activities (Guthrie, 2008). A central theme in the current literature on the economy of growth is still the relationship between politics and business. One of the dynamic strands is the evolvement and effects of relations between local governments and local business in rural area. While most researchers agree that the economic development in the local area is achieved due to the enhancing powers of the local administration, there has been considerable disagreement about the role of local governments, which insisted that the intervention of local government had negative impacts on local economy. There is a substantial debate on how to structure firm-government relations in rural area, or even, what dimensions of the relationship might be consequential.

In China it is widely known that the economy is highly embedded in the politics, the whole country is organized into a tightly nested hierarchy where Communist Party's plan is carried out through the central government in Beijing, twenty-two provinces, another five autonomous regions and three municipalities (Guthrie, 2008). Approximately 2,200 county governments are set under the lead of district government, and simultaneously supervise the lowest level of branches and rural township or village governments. This administrative structure forms the hierarchy in which national resources and incentives are allocated from the central command to the various levels of local governments. Different levels of governments have direct control over State-owned Enterprises (SOEs) and indirect control over other forms of enterprises in this system. In this regard, by observing more autonomy power controlled by local government Weingast (1995) has proposed the argument of *Market-Preserving Federalism Chinese style*, which has set the institutional structure of socialism society into *de facto* federalism. It has highlighted a series of institutions that distribute authority between central and local governments with the aim of promoting high growth rates by reducing the government intervention in the economy and further facilitating inter-government competition to attract business and investment. The theme of the federalism is the reduced intervention of politics in

business activities, and it has descriptively illustrated the close relations between government and firms would negatively affect firm's performance.

However, in Chinese case, government, especially local governments still have played an important role in local community and local economy. Local dynamics and local developments are made from the interactions between multiple functional agencies, both vertically and horizontally. Those multiple functional political agencies then directly or indirectly intervene firm's investment plan, business routines and economic performance. Another approach has emphasized Local governments were regarded as entrepreneurial, developmental and served as a director of board in many rural firms (Oi, 1992). 'corporate models'. As an extension to *corporatism*, local governments provided a good physical environment, the access to capital, and linkages to external markets or important agencies (Blecher and Shue, 1996). Under this circumstance, local officials' ability on external resources came into the consideration of some researchers. Tian (2001) distinguishes the external management ability as an indicator of firm's connection with government when the markets, especially factor markets are absent or far from perfect. External management ability thus plays an essential role for successful production. On the contrary, the behaviors of local officials have been criticized by many scholars. Their study shows that local government officials put their own objectives above not only the aims of the central government but also above those of the local community. Sargeson and Zhang (1999)'s study challenges Oi (1992) and Walder (1995)'s findings even for more developed areas on the basis of their work. Supreme and seeks to control everything appointing the enterprise managers, determining the production quotas and investment levels.

We firstly argue, on the contrary to Tian, the productive success at micro level of firm performance could not be no more hold at the macro level; secondly, after applying the existing lobbying theory to derive a micro foundation of concept of external management ability, we argue firm-government relation mainly implies the favorable access to input/ output markets reflected in firm's specific terms of trade, which however do not increase firm's technical efficiency. By estimating firms' production function with the help of Stochastic Frontier Analysis, we generally support our theory.

2 Theoretical backgrounds

2.1 Theories of firm-government relations

Township and village Enterprises (TVEs) were considered as a unique economic form in rural China, which were set up by local governments' initiative as a consequence of a series of national economic policy in rural area, especially at the administrative level of township and village. Woo(1999) has investigated the different organizational models of TVEs and summarizes three types of collective TVEs, (1) genuine collectively-owned enterprises. These firms are registered and operated by rural local governments, like village or township governments; (2) partnership between local officials and private entrepreneurs.¹; (3) private-financed and privately operated enterprises seeking political shelter and avoiding legal discrimination.²

The role of local governments played in firm's performance has been widely discussed in the literature. All the viewpoints in this regard were based on the development of public TVEs in 1980s. According to this view, rural governments resembled an industrial corporation where revenue generation is paramount and the entire local government operated as an industrial firm (Walder, 1995). Holding the same argument, Oi et al. (1999) suggested 'collectively owned industrial enterprises' was a kind of local government entrepreneurship serving for both the political and economic interests of local cadres. Similar themes were clustered under the definition of *Local Corporatism* by many other researchers (Lin, 1995). Varieties of corporatism defined the role of local officials as entrepreneurial and developmental, since in this form, the community were able to generate more revenues and created more employment opportunities (Blecher, 1991). Che (2002) set up a mathematical model to emphasize the positive role of local government played in firm's production. He used $R = f(a, x)$, where R was the investment return, a was managerial effort and x was the number of excess workers hired to reach the goal of investment. From another perspective, he employed both entrepreneurial factors and non-entrepreneurial factors in an effort function of public TVEs. He further assumed utility function of local officials as $U(x, \theta)$, where x had the same meaning as that above, and θ represented the political attitudes that political officials held. Accordingly, he dis-

¹These partnership firms are very common in modern China, many local politicians participate in the firms' business in the name of their spouses or relatives, in order to escape the supervision from upper level governments.

²Category (3) could be merged into category (2) since officials would ask for share holding if they are asked to offer political shelter or resource beneficiary.

tinguished θ_l as pro-politics government agency and θ_h as pro-business government agency. When considering both the return of investment and utility, he concluded if the public TVEs was controlled by pro-business government agency, the benefits would dominate these of private ownership.

Che (2002)'s result was straightforward under the framework of *Local Corporatism* in which local governments were thought to align the interests of local community and to be productive in public TVEs. However, the resources available to the local community vary enormously among different regions, and this directly affects the behavior of local governments. The nature of local officials can be more predatory than entrepreneurial. Yao (2004) also challenged the theories of local corporatism, if local government failed to commit in the community, both private and public enterprises can not develop well.

Regarding the macro-background of TVEs, the most influential argument is *Market-preserving Federalism, Chinese style*(MPFCS). The characteristic of Federalism on economy issue is the intergovernmental competition, the higher mobility of capital and residents across regions should have eroded one of the key foundations of local corporatism - the dependence of local residents on local collective ownership for incomes and jobs. If the local government tries to impose excessive taxation or regulations on the firm, the firm is able to transfer to other regions which have fewer predatory activities by local bureaus. Second, the process of marketization in terms of market competition and further reforms in the banking and taxation systems has greatly reduced the dependence of TVE managers and private entrepreneurs on local officials for a special access to key resources. Park and Shen (2003) found that in the more competitive environment, banks prefer private firms for individual firm lending rather than TVEs for joint liability lending. Li, Li, Zhang (2001) illustrated when competition was sufficiently intense in the product market, the local government will be induced to shift the residual claims to the manager, thus, the local firms will jump out of the residual control rights by local government. Third, MPFCS enable local governments to enhance commitment problem. The credit commitment by local government will induce privatization as a Pareto improvement to both the politician and the manager (Yao, 2003). Thus the commitment from local governments would ease the predatory behavior by local government in the argument of *Local Corporatism*, and further enhance the firm performance. In a word, the mechanism of *Market-preserving federalism* will directly increase the economic performance in the industry sector from macro perspective.

When more and more private TVEs went into the business world, the relations between local governments and local firms changed dramatically. On the one hand, the central government encourages to build new corporate structures in order to further block political interventions in the decision making process.³ In other words, the township and village government was not allowed to become involved in investment and business activities as an owner of the collective economy. Thus, the relation between local governments and enterprises is not restricted to one-directional public ownership, but developed to multi-directional partnership ownership. With the promotion of share-holding in the latter part of the 1990s, it has become clear that local officials in a number of areas have used their official positions to acquire the major benefits for themselves, families and associates. Lin (1995) in his study of Daqiu Zhuang revealed the networks between the local officials operating in a more predatory manner. He showed how the share-holding system has been exploited to transfer the local enterprise into private hands. However, there are other arguments supporting the firm's external ties with different political bureaus will help firm's performance both in micro and macro level. One of the pioneering work is from Tian (2001).

2.2 Concept of external management ability

In a widely recognized paper Tian (2001) derived a theory of ownership arrangements and their impact on economic performance under different institutional environments ranging from a perfect market economy to socialistic planning.

A key point of Tian's model is separation of external and internal management abilities. While internal management ability corresponds to classical management skills to organize production, e.g. controlling, technical production, supervision of labor, etc, external management ability corresponds to manager's ability to promote good relations with bureaucratic departments. The latter becomes "of crucial importance when markets, especially factor markets are absent or far from perfect..." Tian (2001). The latter is especially the case in socialistic planning economies, where different levels of government agencies control access to scarce production inputs. In particular, these inputs are not distributed via a free market mechanism, where inputs are distributed across firms according to their relative economic competitiveness. By contrast, firms' access to inputs is controlled or at least, regulated by

³Here mainly with regard to shareholder meetings, corporate boards and managers, according to the Company Law passed in 1994.

political administrations. Accordingly, Tian further pointed out that in an imperfect market environment, such as a socialistic planning economy, personal relations with state bureaucracy crucially affects the access to scare inputs and hence the economic success of an individual firm.

"...thus, bureaucratic connections become extremely valuable within an imperfect institutional environment such as a transitional economy. Many transaction and production relations are personalized, and access to scare inputs is a matter of privilege. External management ability becomes essential for successful production." Tian (2001).

Formally, Tian tries to capture the relative importance of external and internal management ability for effective production assuming the following production function for individual firms:

$$Q = F(R, M, L, K; \rho)$$

Where R stands for external management ability, M is internal management ability, L and K stand for labor and capital respectively. It is obvious from Tian's argument and from the production function above, in a transition economy with imperfect information and in incomplete market (if $\rho = 0$), external ability, or procurement ability may be more crucial for a firm to survive, however, in a perfect market environment (if $\rho = 1$), this kind of external management ability is not necessary to the production process.

In particular, following Tian's own conception, external management ability basically corresponds to manager's skills to form close personal relations with bureaucrats who control the access of certain essential factors. Thus, following the logic of Tian's work, it implies that the closer the personal relation of a firm manager with bureaucrats, the higher is the share of the scare input a firm can acquire. Accordingly, at the micro level external management ability can be considered as a productive factor as it increases firm's production. However, Tian's formalization of the impact of external management abilities is misleading. Specifically, if we consider the production of all firms at the macro level, the productive characteristic of external management ability holds no more true.

The model constructed below is to support our conjecture on external management ability at macro level. To see this more clearly, we assume that a bureaucrat controls the distribution of a scare input, X , where the amount a firm i can procure (X_i) depends on firm i 's external ability with local bureaucrat in the whole community, which we assume α_i , i.e., $X_i = \alpha_i X$. Furthermore, firm's access ability

to certain essential input factors depends on the ability of firm's manager to form personal relations with the bureaucrats and the effective resources used to form or maintain these personal relations. We assume a relational function which is non-linear, increasing and strictly concave, i.e. $\gamma_i = g_i(R_i)$.

Since the external ability of access to scarce essential inputs is a relational concept, the bureaucrat will distribute the scarce inputs across firms proportionally based on the relative strength of his personal relations with those firms. The importance of firm i among all the firms who have personal relations with bureaucrats is assumed as: $\alpha_i = \frac{g_i(R_i)}{\sum_j g_j(R_j)}$.

From the definition of relational function it is clear to understand that an increase of firm i 's external management ability is productive at individual firm level. Meanwhile, since the resource allocation from local government is limited, it also follows quite plainly that we can always identify a subset of firms, for which an increase of their individual external management ability would result in a decrease of total production at the macro level. Furthermore, in contrast to labor, capital or even internal management ability, which are directly related with productivity of firms or in a community, a common increase of the external management ability of all firms would probably in general not result in an increase of total production.

To test our conjecture, we follow Tullock (1967)'s famous rent-seeking theory, which suggested that from social perspective, external management abilities for essential input factors is like lobbying activities, which obviously generate a social waste. As we have already defined above, we consider a set of firms, among which each firm i invest an amount of R_i for external management ability as the relational input, the local cadres distribute the factor inputs depending on the relations the firm have invested, as a result, the firm receives the amount of X_i input units, as follows:

$$\begin{aligned} \alpha_i &= \frac{g_i(R_i)}{\sum_j g_j(R_j)} \\ X_i &= \alpha_i X \end{aligned} \tag{1}$$

As we have defined that function g_i is non-decreasing and continuous in R_i , it follows that there always exists a vector $\lambda = [\lambda_i]$, such that:

$$\begin{aligned} \alpha_i &= \frac{g_i(R_i)}{\sum_j g_j(R_j)} = \frac{g_i(\lambda_i R_i)}{\sum_j g_j(\lambda_j R_j)} \\ 0 &< \lambda_i < 1 \end{aligned} \tag{2}$$

In this case, we see that if there is a common decrease of R_i , at the macro level, there exist λ to keep the original ratio of factor inputs. We have already known that the manager of a firm i has to allocate his time among personal relations and internal management, the total management time, $M + R$ is limited. If the manager increase his internal management indicator M , which is considered to be productive, he would then obviously devote a common decrease of external management indicator R to production. From equilibrium (2), a decrease of external management relation can still keep the original allocation of factor inputs. Under this circumstance, increase of M and decrease of R directly lead to a higher output for all firms. As a result, Pareto dominant in the community is realized when compared to the original non-cooperative equilibrium. Nevertheless, since each firm competes for the share of inputs X , as the resource allocation from local cadres is restricted, a Pareto optimal allocation based on external management relations can generally not be achieved, therefore, a social waste is generated.

2.3 Revised model of Tian

As explained in section 2.2, Tian's conception of external management abilities basically implies the firm manager's ability with external bureaucrats, to lobby local government in an imperfect socialism system to distribute a considerable share of scare inputs for further production use. Based on this point of view, we are able to apply existing lobbying theories, to name a few, like the interest group theory of Grossman and Helpman (2001) to derive a micro foundation with the concept of external management ability.

We firstly consider a simple lobbying game between local cadre and the manager of local firm. We assume the manager and local cadre make their decisions successively. At the first step, the manager decides his production plan, to invest his time in personal relations with local officers, generally, we can consider this relational investment as a support to local government; the local cadre receives support from different firms in the community and then allocate the inputs among supporting firms.

We solve the problem backward. $S_i(R, N, X_i)$ is denoted as the support schedule announced by each firm. S_i implies the support from a firm which, as the firm's plan, can credibly guarantees the development of local community in exchange of the amount X_i received from the local cadres. to overcome opportunistic behavior political exchange is embedded in close firm-government network relations. We

denote N_i as a network index measuring the closeness of firm government relations. The productivity of external management time R with regard to political support is crucially determined by firms network relation with the government N_i . The government cadre then maximizes the supports received from all the firms in the community under the restriction that the inputs allocated among firms. To maximize his support function we have:

$$\begin{aligned} &Max \sum_i S_i(R_i, N_i, X_i) \\ &s.t. \\ &\sum_i X_i = X \end{aligned} \tag{3}$$

After presenting the Lagrange-multiplier λ , we are able to set up the first-order condition:

$$\frac{\partial S_i}{\partial X_i} = \lambda \tag{4}$$

Generally we assume that the support function of local firms is mainly based on external management ability R , which specifically transform the time used for effective procurement on bureaucrats into a formalized support function S_i . However, political exchange of inputs and support are plagued by the problem of opportunistic behavior. We think it backwardly, given a received input from local government, the firm has no incentive to commit the promises of support. Beside, the firm has *ex-ante* to invest in personal relation with local cadres to build R , we are able to derive profit maximization as follows:

$$\begin{aligned} &\max_{R_i, X_i} \Pi(X_i) - R_i u_r \\ &s.t. \\ &S_i(R_i, N_i, X_i) \equiv 0 \end{aligned} \tag{5}$$

where u_r is the parameter of relational indicator R_i , Π is the profit function. With Lagrange-Multiplier μ we have the first-order condition:

$$\begin{aligned} \frac{\partial \Pi_i}{\partial X_i} - \mu \frac{\partial S_i}{\partial X_i} &= 0 \\ u_r + \mu \frac{\partial S_i}{\partial R_i} &= 0 \end{aligned}$$

After rearranging the results we have:

$$\frac{\frac{\partial S_i}{\partial R_i}}{u_r} \frac{\partial \Pi_i}{\partial X_i} = - \frac{\partial S_i}{\partial X_i} \tag{6}$$

On the other hand, after applying the non-cooperative equilibrium of the Grossman and Helpman model (Grossman and Helpman, 2001), it follows that given a sum of distributed input resources, the local government may analogously maximize the firms' welfare in the whole community, thus we assume additive social welfare function as:

$$\begin{aligned} & \max_{X_i} \sum_i A_i \Pi_i(X_i) \\ & s.t. \\ & \sum_i X_i = X \end{aligned} \quad (7)$$

with:

$$A_i = \frac{\partial S_i}{\partial R_i} u_r \quad (8)$$

Accordingly, the equilibrium holds for the input amount distributed to a firm i by a support maximizing government.

$$A_i \frac{\partial \Pi_i}{\partial X_i} = -\lambda \quad (9)$$

Now we generally assume a Cobb-Douglas production function with labor (L), capital (K) and the distributed intermediate input X as production factors, $Y_i = L_i^\alpha K_i^\beta X_i^\gamma$, where constant returns scale implies that $\alpha + \beta + \gamma = 1$. Since Π_i is defined as the profit function of firm i , we have $\Pi_i(X_i) = pY_i - qX_i$ where p and q denote the official output and input prices, respectively. Then we have the first-order condition of profit function as $\frac{\partial \Pi_i}{\partial X_i} = p\gamma L_i^\alpha K_i^\beta X_i^{\gamma-1} - q$.

From Equation 9, we have

$$p\gamma L_i^\alpha K_i^\beta X_i^{\gamma-1} = q - \frac{\lambda}{A_i}$$

Therefore, finally we have

$$\begin{aligned} X_{i*} &= (TOT_i)^{\frac{1}{1-\gamma}} \gamma^{\frac{1}{1-\gamma}} L_i^{\frac{\alpha}{1-\gamma}} K_i^{\frac{\beta}{1-\gamma}} \\ TOT_i &= \frac{p}{q - \frac{\lambda}{A_i}} \end{aligned} \quad (10)$$

While TOT_i denotes firm i 's specific terms of trade, i.e. assuming a perfect market firm i would exactly demand the amount X_i given the output and input price relation TOT_i . Note that firm specific terms of trade TOT_i depend in particular on

the relative ability of firm i to produce credible support of the government when compared to the ability of all other firms competing for the input X . Hence, the terms of trade are particularly determined by favorable network relation of firm i to the government (N_i), when compared to competing firms.

Substituting the input amount X_i^* received by firm i in the rent seeking equilibrium into the original production function yields:

$$Y_i = L_i^{\frac{\alpha}{1-\gamma}} K_i^{\frac{\beta}{1-\gamma}} [TOT_i]^{\frac{\gamma}{1-\gamma}} \gamma^{\frac{\gamma}{1-\gamma}} \quad (11)$$

Therefore, we can test our theory regarding the importance of firm-government relation for firm's economic performance via estimating firms production function including firm specific terms of trade as an additional production factor as specified in eq. 11 above.

Not in particular, that following our theory close firm-government relation mainly implies favorable access to input markets reflected in favorable firm specific terms of trade, while these do not increase firm's technical efficiency. By contrast, following the theory of local corporatism, close firm-government relation implies that local government can credibly commit not to transgress and tax away firm's returns to investment. Therefore, under local corporatism close firm-government relation increase both capital investments and internal management effort of private firms and hence the technical efficiency of firms.

Accordingly, we test for competing theories regarding the impact of firm-government relation on economic performance via estimating a stochastic frontier function controlling explicitly for firm specific TOTs. In particular, we analyze to what extend various network parameters measuring firm-government relations significantly determine firm's technical efficiency.

2.4 Firm-Government relationships in rural China

As we have introduced, TVEs were rooted in the township and villages of rural China, but shared a variety of ownership structures: the firms were partially or wholly controlled by local governments, or in some other cases, the firms were partially run by local officials. The existence of TVEs shapes numerous interpretations of an efficient substitute in a weak environment (Che and Qian, 1998). In rural area there is a legacy of collective-run industries that formed the basis for TVEs development. Oi et al. (1999) argue, due to the decentralization combined with hardened

budget constraints, the local governments was granted greater rights over any surplus. To develop the rural industrial economy was a major opportunity for local officials who were eagerly to generate profits to fill up the hole of agricultural revenue loss. One can broadly define the relation between local government and firms as a quasi-formal government-business partnership at the local level in a special context of weak formal institutions and strong informal institutions (Li, 2005). In other words, there exists both formal and informal relationships between local officials and TVE managers.

Behaviors of Local Government. When we discuss the behaviors of local government, the focus is mainly on the county, township and village governments and their affiliated departments. At the time when TVEs originated, local government served multi-disciplinary functions in the local area in China. First, it acted as an industry corporate board in the firms, to perform the tasks of strategic planning, management selection, incentive design and firm performance evaluation. Because of the effects of the need for revenue generation, local governments went into business with various agencies at the county-level to raise revenues and to provide employment opportunities (Blecher, 1991). Second, local government contributed himself to develop the local public utilities and facilitated resource access for local firms. By developing the physical environment, the access to capital and bank loans, and the link to the external markets, local government played a role of middleman. For example, Park and Shen (2003) argued that the function of local government was mainly in the form of loan guarantor, so TVEs had priority to get loans than private rural firms. Third, local government acted as a regulator or policy maker through interpreting the government policies and regulations favorably and implementing them selectively at the community, including tax collection, alternative levies and fees. Forth, local government served as a organizer and took a leading role in fostering the local social capital and structure development among people. The behavior of local government and its affiliated agencies have great impact on collective action and social capital through trust, norms and networks among different organizations. It is because the politician's promotion and compensation are affected by their performance in various political and social objectives. Undertaking the functions referred above and achieving the objectives in his jurisdiction may increase the political officials' income and promotion opportunities, but it may jeopardize firm efficiency.

Nowadays, after the massive privatization of public TVEs in the end of 1990s, local officials gain from their connections with the firms in following several ways: they may receive management fees or unauthorized fees and taxes levied on private

business; private business may rely on them to find channels for re-selling at higher market prices goods bought at low state-set price, or to gain inside channels for exports. They may benefit formally from the behavior since the generated extra-budgetary revenues may help them to fulfill the economic requirements set by the upper level governments.

Behaviors of Firm Manager. The foremost method the managers attempt to use is to work through official channels. They will focus on the careful cultivation of ties with selected offices and officials, rather than a regularized and impersonal adventure into the bureaucracy (Pearson, 1997). There are several ways for rural firm managers to connect with local officials:

1) Formal institutional connections. Officials in some specific departments may be invited to be placed on a board of directors. Sometimes, firms try to embed relationships with officials into their organizational structure by placing a key official (such as someone from the supervisory bureau) on a board of directors or high in the management structure so that the firm can use that person's connections and influences to its own advantage. In most cases, however, relationships are less institutionalized. Relationships may be sought for one-time benefits, managers cannot be certain, however, that these one-time efforts on influence will be effective. More effective use of ties involves the active cultivation of relationships that last over time.

2) Formal individual connections. Managers in rural firms have not shown strong inclinations toward formation of strong horizontal ties among firms, but they are prone to be active in political activities. Among the managers in rural area, one potential channel for formal, organized but individual influence is representation in existing political organs, notably the CCP, NPC, CPPCC⁴ and their local counterparts. The membership is considered as political capital (Zhou, 2009), and the investment in such political capital involves participating regularly in routine activities and confederacies, contributing to government-sponsored social programs, which in return could receive considerable benefits.

3) Informal individual connections. Besides the formal individual connections, the managers prefer informal connections with politicians. Managers attempt to form

⁴CCP denotes Chinese Communist Party; NPC is the abbreviation of National People's Congress; CPPCC denotes Chinese People's Political Consultative Conference. They represent the three most important legislative (or semi-legislative) organs of the Chinese government. The lowest legislative organ is at the township level.

dense client alliances with the political officials in person, especially at the local level. Ties may be built on existing family relations or, among the well-educated, on bonds developed in school, as in the case of one manager who has connections with schoolmates who are now in the political agencies and in securities regulatory agencies. Also the informal connections are built through bribery and the giving of small gifts to lower-level cadres, by employing middle-level officials in their business or by cultivating high-level officials as patrons.

The managers try to satisfy their own narrow business interests through building personal relationships with local officials, to improve business conditions and more potential access controlled by the government (Hendrischke, 2003). Managers call on them to achieve narrow types of influence, ranging from evading an existing rule, to gaining a favorable interpretation of a rule, to assuaging the anger of an official about past deeds, to moving a procedure along faster. From the field study we have also learned, good relationships can be especially important when the government provides approvals, or when the government is a customer or supplier. The goal of using contacts is usually to avoid formal rules set down by the government rather than to change the existing regulatory regime, and is very important for both the registration and the operation of business. Local governments retain some types of authority and discretionary favoritism control in allocating resources and protection, especially in rural area, where local cadres play a significant role in the community development. Thus the firms who have strong connection with local political agencies enjoy preferential status in obtaining bank loans and other key inputs as before (Che, 2002; Brandt et al., 2005).

3 Methodology

3.1 Efficiency measurement

In order to estimate the influences of firm-government relations on firm's performance, we apply stochastic frontier analysis. Stochastic frontier approach is capable of capturing measurement error and other statistical noise influencing the shape and position of the production frontier. We consider it as a superior choice in our Chinese case study, which is largely influenced by randomly exogenous factors, such as institutional and organizational impacts. Theoretically, the stochastic approach to efficiency measurement is subject to prior decisions on the distributional form of the inefficiency component of the error term as well as the modeling of the underlying

technology (Sauer et al., 2006). Following the approach pursued in other related papers (Wiebusch, 2005), we apply a semilogarithmic second-order expansion of the general form of the production function to obtain the well-known translog specification. Firstly, the output orientation of the production frontier can be written as follows:

$$y_i = f(x_i : \beta) * \exp\{v_i\} * TE_i \quad (12)$$

where $y_i = f(x_i : \beta) * \exp\{v_i\}$ is the stochastic production frontier consisting of the deterministic part $y_i = f(x_i : \beta)$ common to all firms in the sample and a firm-specific while v_i captures the effect of random shocks on each firm.

Basic Model. We apply a translog production function to estimate the frontier, and it is described as:

$$\ln y_i = \beta_0 + \sum_{k=1}^m \beta_k \ln x_{ki} + 1/2 \sum_{k=1}^n \sum_{l=1}^n \beta_{kl} \ln x_{ki} \ln x_{li} + v_i - u_i \quad (13)$$

where $i = \text{producer}$; $k, l = \text{input}, 1 \dots m$.

By a simultaneous one-stage estimation, the non-negative inefficiency components related to the exogenous factors of firm production are given by:

$$u_i = \delta_0 + \delta_r \sum_{r=1}^s z_{ri}$$

where z_i is a vector of exogenous variables that may influence the structure of production process, such as the institutional factors (e.g. ownership, political influences, mobility influences and F-G effects), the organizational factors (e.g. salary, gross investment as well as financial access) and finally individual characteristics (age, education as well as working experiences of managers in rural firms). Therefore, we have $v \sim \text{iid}N(0, \sigma_v^2)$, and $u_i \sim N^+(\delta'z_{ri}, \sigma_u^2)$. u_i are independently distributed but not identically distributed, as each firm will face different exogenous variables, which cause the mean of the normal distribution before truncation will differ. In order to obtain a consistent estimate of the intercept and the technical efficiency of each practice, we assume u_i follow a normal-truncated normal model. Since we later can include more institutional factors and firm's specific relational variables in the efficiency analysis, a more flexible distribution of u_i is thus expected.

In this case, the log-likelihood function is given as:

$$\ln L = \text{constant} - I \ln \sigma - \sum_i \ln \Phi\left(-\frac{\delta'z_i}{\sigma_u}\right) + \sum_i \ln \Phi\left(-\frac{\mu_i^*}{\sigma^*}\right) - \frac{1}{2} \sum_i \frac{(\epsilon_i + \delta'z_i)^2}{\sigma^2}$$

where $\mu_i^* = \frac{\sigma_v^2 \delta' z_i - \sigma_u^2 \epsilon_i}{\sigma^2}$, $\epsilon_i = v_i - u_i$.

The technical inefficiency can be derived as

$$E(u_i | \epsilon_i) = \mu_i^* + \sigma^* \frac{\phi(\mu_i^*/\sigma^*)}{\Phi(\mu_i^*/\sigma^*)} \quad (14)$$

We have further the influences of each exogenous variable on technical inefficiency of the firm calculated from

$$\frac{\partial E(u_i | \epsilon_i)}{\partial z_{ik}} = \left[1 + \frac{\phi'(\mu_i^*/\sigma^*)}{\Phi(\mu_i^*/\sigma^*)} - \left(\frac{\phi(\mu_i^*/\sigma^*)}{\Phi(\mu_i^*/\sigma^*)} \right)^2 \right] \frac{\sigma_v^2}{\sigma_v^2 + \sigma_u^2} \gamma_k \quad (15)$$

Given that the mean of u_i is defined as $\delta' z_i$, if the coefficient of an exogenous variable is negative, the exogenous variable is then positively related to TE_i , and vice versa. The values of the exogenous determinants are listed in Table 1 as below. The maximum likelihood estimates for all parameters of the stochastic frontier and the inefficiency effects model are simultaneously estimated, using R (Henningsen, 2008).

Hypothesis Testing. We use standard log likelihood ratio that approximated by chi-square with degrees of freedom equal to number of parameter restrictions to test the scale specification of our model. We check for the adequacy of the chosen translog specification by comparing with linear specification of Cobb-Douglas production frontier, which has constant return to scale. Furthermore we check against the mean response function and test for the joint significance of the efficiency effects incorporated.

Monotonicity check. In order to be consistent with microeconomic theory which requires the production function monotone increases and at least quasi-concave in inputs. The positive marginal products with respect to all inputs and thus non-negative elasticities guarantee the monotonicity. The condition given holds for the translog specification as we stated in (2) if the following equation is true for all inputs:

$$\frac{\partial y}{\partial x_k} = \frac{y}{x_k} \frac{\partial \ln y}{\partial \ln x_r} = \frac{y}{x_r} (\alpha_k + \sum_{k=1}^n \beta_{kl} \ln(x_k)) > 0$$

Monotonicity depends on the sign of the term in parenthesis as both y and x_r are positive. By further following the law of diminishing marginal productiveness, marginal products besides being positive should be decreasing in inputs. This implies the fulfillment of own second derivatives.

$$\frac{\partial^2 y}{\partial x_k^2} = [\alpha_{ii} + (\alpha_i - 1 + \sum_{k=1}^n \beta_{kl} \ln x_l) * (\alpha_i + \sum_{k=1}^n \beta_{kl} \ln x_l)] * (y/x^2) < 0$$

This depends on the nature of the terms in parenthesis and should be checked a posteriori by using the estimated parameters for each data point. Both restrictions (i.e., $\partial y/\partial x_i > 0$ and $\partial^2 y/\partial x_i^2 < 0$) should hold at least at the point of approximation.

Quasi-concavity check. The necessary and sufficient condition for a specific curvature consists in the semi-definiteness of its bordered Hessian Matrix as the Jacobian of the derivatives $\partial y/\partial x_i$ with respect to x_i : if $\nabla^2 Y(x)$ is negatively semi-definite, Y is quasi-concave, where ∇^2 denotes the matrix of second order partial derivation. Henningsen (2008) designed a three-step estimation approach to impose theoretical restrictions in stochastic frontier analysis with “micEcon” package of open-source software R. In order to avoid the violation of monotonicity and to obtain restricted coefficients the minimum distance estimation is to be done with the functions in R (Henningsen and Henning, 2008).

Generalization. We firstly use value-added output to estimate the production function. Capital and labor are measured by the fixed asset value and employment in 2007 separately. In order to test the conjecture as we referred in theoretical argument above that the firm-government relation would have no impact on firm efficiency via terms of trade, we secondly generalize the output via terms of trade by considering firm manager’s price estimation

$$Y_i = GV_i/(1 + OUP_i) - PME_i/(1 + INP_i) \tag{16}$$

where Y_i is the firm’s output, GV is gross value of output at current prices, PME is consumption of raw materials and energy at current prices, OUP and INP are the scale of output price and input price estimation respectively, which are self-valued by the manager in our survey. As it is hard to collect price data at firm level, we use categorical price estimation from managers to normalize value-added output.

3.2 Data and variables

In order to examine how the firm-government relationship influences the economic performance in rural area, we collected the data in three different counties in Zhejiang province, which is located at the east costal area of China. With the help of students at economics department at Zhejiang University, we identified totally 131 rural agribusiness firms in 26 townships dispersed in three counties, Yuhang county, Nanxun county and Xihu county. Interviews were then conducted with firm

managers to obtain detailed information about firm-government relations, firm performance as well as basic firm characteristics. Each interview lasted from 2 hours to 5 hours. Interviews with the firm’s managers provided the majority of the data. To maximize accuracy, we also collected the firm’s financial statement if possible, spoke with managers formally and informally, and got information from local industry bureaus, and validated the data against other published sources.

Since the use of political connections may be more widespread in rural villages and townships, and especially, among agricultural-related firms, where more traditional forms of trading may persist (Nee and Opper, 2007), we focus only in the agribusiness industry to avoid sector heterogenous problem. The rural firms in the sample are from five agribusiness sub-sectors, food and snack sector(39), fruit canned processing(14), tea, cereal and wine processing(24), meat manufacturing and processing(28), agro-chemistry(26). Firms are mostly privatized, however, many managers admitted that some local officials have personal shares in the firm.

Table 1: Descriptive Variables (N=131)

| Variable | Description | Mean | Std. Dev. |
|----------------------------------|---|-------|-----------|
| <i>Firm’s basic statistics</i> | | | |
| LGVALUE | Logged value-added output in 2007 | 8.217 | 1.257 |
| LGCAPITAL | Logged price of fixed-asset in 2007 | 9.549 | 1.161 |
| LGLABOR | Logged employment in 2007 | 4.034 | 0.916 |
| <i>Firm-Government relations</i> | | | |
| P-HIGH | Number of ties with high rank officials in local bureaus | 2.962 | 1.931 |
| P-LOW | Number of ties with low rank officials in local bureaus | 4.954 | 2.260 |
| RANGE | The different groups of shareholders | 2.382 | 1.085 |
| CONSTRAINT | The political constraint of firm manager’s ego network | 0.620 | 0.313 |
| LGSHARE | Whether the officials of local government have the shares in the firm | 0.351 | 0.479 |
| <i>Manager’s human capital</i> | | | |
| M-EDU | Education of manager (1=high school, 5=Master degree) | 2.756 | 0.962 |
| M-PARTY | Party member of manager(0=no, 1=yes) | 0.626 | 0.486 |
| M-EXP | Manager’s working experience (1=< 5 years, 5=>20 years) | 2.687 | 0.852 |
| <i>Firm’s characteristics</i> | | | |
| YEAR | Age of the firm(1=0-5years, 5=> 21years) | 2.802 | 1.041 |
| OWNORG | Original ownership status (1=TVE, 0=others) | 0.435 | 0.498 |
| REWARD | Reward issued by local government (1=yes, 0=no) | 0.343 | 0.477 |

Table (1) contains descriptive statistics and definitions for variables included in the analysis. In order to estimate a stochastic frontier function, we chose the dependent variables as the value-added output in real terms (LGVALUE), which is only available in 2007. Other important inputs include capital stock (LGCAPITAL), which is inventory value of fixed assets excluding ground and buildings, and total employment by firm (LGLABOR). Since we specify in agribusiness sector, which is

more or less homogenous, we do not have any sub-sector classification here.

Furthermore, we are interested in how characteristic and firm-government relational variables influence the technical efficiency under the stochastic frontier. First, we use the specific social rank status to conceptualize one dimension of firm-government relations, high rank ties (HIGH-RANK), normally measured by the manager's relation with top officials in local bureaus, and low rank ties (LOW-RANK), which are the ties between sales manager and lower level officials in local bureaus. Second, we consider network range (RANGE). Network range is one of structural property of the individual actor that is proposed to influence performance. Network range is defined as the extent to which an actor's ties link with diverse others (Burt, 1992). In our case, political network range through directors of board describes the variety of institutional groups or individuals who share the control power and decision power of the firm. The firm with a higher network range will therefore have access to more diverse resources. We classify the shareholders network range into seven different categories, in which we distinguish whether the shareholders are state-owned government, local government, foreign firms, large domestic business groups, informal local officials, collective organizations or individuals. Third, we specify political network constraint (CONSTRAINT) as informal network structure indicator.⁵ Political network constraint applied in firm-government network portrays the ego's entrepreneurial opportunities and chances when the political officials are more or less connected with each other. Fourth, we have included whether there exist direct shareholders or indirect holders (relatives) from local governments or local bureaus (LGSHARE), to describe the firm's formal institutional ties with local officials.

The firm's manager's human capital factors include the following variables: the education level of manager (M-EDU), which is illustrated by firm managers through a five-scale measurement; the binary variable which is measure as Communist Party membership of manager (M-PARTY), coded 1 if the manager is a party member, 0 otherwise; working experience of managers (M-EXP) is considered as one of the important human capital variables in our survey as well. To describe the firm's basic characteristics, we include firm's business years from birth (YEAR), firm's original ownership status when it started to run business (OWNORG) and whether firm has

⁵Constraint is measured as $(p_{ij} + \sum_q p_{iq}p_{qj})^2$, $q \neq i, j$, where p_{ij} is the proportional strength of q 's relationship with j , as p_{ij} is the proportional strength defined above of i 's relation with j . The function defines the proportion of i 's network time and energy that directly or indirectly involves j (Burt, 1992).

received any reward from local bureaus (REWARD).

4 Empirical Findings

The correlations coefficients for each variables are calculated. The individual correlations between the variables do not suggest obvious problems of pairwise collinearity, which implies the appropriateness the use of all independent variables in a regression model. We find significant correlations between the determinants and the dependent variables as expected.

Moreover, we apply statistical hypothesis tests based on the generalized likelihood-ratio (LR) test to select the functional form and to determine the presence of inefficiencies. The first test reported in Table 2 is the selection of the functional form, where null hypothesis is that the Cobb-Douglas is an adequate representation of the data. The LR test indicates that the Cobb-Douglas is rejected, certifying that the more general form of the translog fits this data set better. The second and third tests are established to test the relevance of inefficiency effects in the model and joint effects of the determinants included in the model. Both null hypotheses are rejected, which reinforce the appropriateness of chosen translog production model.

Table 2: Generalized likelihood-ratio (LR) tests of null hypotheses

| Null Hypothesis (H_0) | Test Statistics($\chi^2_{0.95}$) | Prob> χ^2 |
|--|------------------------------------|----------------|
| $H_0 : \beta_{ij} = 0, ij = 1, \dots, 2$ | 11.01 | 0.0116 |
| $H_0 : \gamma = \delta_k = 0$ | 35.05 | 0.0001 |
| $H_0 : \delta_1, \dots, \delta_k = 0$ | 22.82 | 0.0009 |

In order to evaluate the extent and significance of the firm-government relation variables we start by specifying a translog production function, which is broadly consistent with the exploratory analysis in the previous section. The models and parameter estimates are shown in Table 3. In the case of value-added output, Monotonicity and curvature correctness is posteriori checked for all observations: the translog function is monotonically increasing at 131 out of 131 observations, and the monotonicity condition was fulfilled for both exogenous variables, labor and capital. Besides, this translog production function is quasi-concave at 131 out of 131 observations. In the case of generalized output, the translog function is monotonically increasing at 113 out of 131 observations, and the monotonicity condition is fulfilled 99% for capital and 80.8% for labor. Translog production function is

quasi-concave at 131 out of 131 observations. We use the coefficients obtained by the minimum distance estimation (Henningsen and Henning, 2008) to fulfill the monotonicity condition.

Table 3: Stochastic Frontier Estimation with social network variables

| | Value-added output | | | | Generalized output | | | |
|------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
| LGLABOR | 1.588** (2.04) | 1.732** (2.25) | 1.670** (2.10) | 1.705** (2.05) | 2.232** (2.23) | 2.352** (2.39) | 2.321** (2.35) | 2.562** (2.49) |
| LGCAPITAL | 0.515 (0.72) | 0.727 (1.03) | 0.796 (1.07) | 0.779 (1.04) | -0.550 (-0.56) | -0.220 (-0.23) | -0.176 (-0.18) | -0.271 (-0.28) |
| LGL ² | 0.112 (1.52) | 0.0825 (1.13) | 0.106 (1.33) | 0.106 (1.33) | 0.253*** (2.66) | 0.202** (2.05) | 0.214** (2.12) | 0.213** (2.13) |
| LGC ² | 0.0591 (1.13) | 0.0431 (0.83) | 0.0411 (0.76) | 0.0428 (0.78) | 0.159** (2.24) | 0.132* (1.89) | 0.131* (1.86) | 0.141** (1.98) |
| LGL * C | -0.223** (-2.27) | -0.215** (-2.22) | -0.229** (-2.28) | -0.233** (-2.24) | -0.421*** (-3.29) | -0.395*** (-3.08) | -0.402*** (-3.10) | -0.425*** (-3.23) |
| LGSHARE | -0.186 (-1.47) | -0.270** (-2.06) | -0.352** (-2.40) | -0.355** (-2.40) | -0.114 (-0.71) | -0.215 (-1.29) | -0.272 (-1.43) | -0.275 (-1.47) |
| RANGE | | -0.146** (2.01) | -0.133* (1.75) | -0.133* (1.74) | | -0.187** (2.01) | -0.174* (1.77) | -0.170* (1.74) |
| HIGH_RANK | | | 0.0246 (0.65) | 0.0253 (0.66) | | | 0.0213 (0.45) | 0.0242 (0.52) |
| LOW_RANK | | | 0.0442 (1.33) | 0.0450 (1.34) | | | 0.0220 (0.56) | 0.0255 (0.65) |
| CONSTRAINT | | | | 0.332** (2.15) | | | | 0.215 (1.18) |
| _cons | -0.793 (-0.30) | -2.058 (-0.78) | -2.413 (-0.87) | -2.391 (-0.86) | 2.953 (0.80) | 1.102 (0.30) | 0.870 (0.23) | 0.961 (0.26) |
| Insig2v _cons | -2.128*** (-4.40) | -2.083*** (-4.41) | -1.933*** (-4.18) | -1.932*** (-4.16) | -1.193*** (-3.35) | -1.109*** (-3.27) | -1.052*** (-3.10) | -1.113*** (-3.10) |
| Insig2u _cons | 0.296 (1.35) | 0.236 (1.04) | 0.151 (0.59) | 0.150 (0.59) | 0.329 (1.13) | 0.203 (0.63) | 0.146 (0.42) | 0.192 (0.57) |
| N | 131 | 131 | 131 | 131 | 131 | 131 | 131 | 131 |

t statistics in parentheses
 * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Column (1)-(4) display the results in which dependent variable is value-added output, we name them normal model; column (5)-(8) display the results in which dependent variable is generalized output, we name them generalized model. As we have stated above, in the case of generalized output here we estimate the output via specific terms of trade, and try to investigate whether the firm-government network effect directly influences the firm efficiency or the network indicators affect the efficiency via favorable terms of trade (price effect).

From Table 3 we can read, the inefficiency tends to be smaller for firms with direct or indirect shares from local officials. The negative sign of the estimated parameter means that the local government officials' share in the firm increase the technical

efficiency (lower the inefficiency). In other words, the government officials have positive effect on firm efficiency. The inefficiency parameter of political constraint is positive and significant, which means the informal ego-network of firm with local officials is negatively related with firm efficiency. Consistent with the findings by Burt(1992), the contact constraints the ego's changes of investment and business opportunities, the firm's political constraints with local officials have significantly affected firm's technical efficiency. Range increase firm's efficiency as well, as we have expected. The diversity of firm's shareholders does increase firm's resourceful ability to the market, thus can help to increase firm's technical efficiency.

By normalizing the intermediate input price as well as output price in the output, the coefficients and the significance changed dramatically on some important parameters, as column (5)-(8) of generalized model show. The coefficients of local officials' share is still negative but insignificant, which means the direct or indirect shares of local officials are insignificant if we consider firm's favorable terms of trade, and this formal institutional connection indeed has no effect on firm efficiency. The good connections to local government mainly imply that firms have good access to scarce inputs or to lucrative output markets, but can not translate into technical efficiency. We find the same effect as the variable of CONSTRAINT. The variable of RANGE has positive and significant effect on firm efficiency either in normal model or in generalized model, which means the diverged characteristics of shareholders have positively related with firm performance. Therefore, as we have expected, the diversity of control power and ambiguous ownership may increase the firm's efficiency. Among all the firm-government network relation variables, the network ranking, which is described as networks of high rank and low rank with local officials, is insignificant, that means, the political network ranking has nothing to do with firm efficiency.

In Table 4 we report the estimation results which include firm's characteristics, human capital characteristics and firm-government relation variables as inefficiency determinants. The variance parameter γ indicates whether the technical inefficiency is stochastic. The value of γ explains the inefficiency by measuring the part of the distance to frontier. In our estimation, the value of γ is all above 0.80, which means the variance of the inefficiency effect is a significant component of the error term variance, and firm's deviations from the optimal behavior are not only caused by random factors. We reinforce here that the use of stochastic frontier analysis more appropriate than the standard OLS estimation. We find that firm manager's human capital, like education and working experience, significantly and positively affect

Table 4: SFA estimation with both firm characteristics and social network variables

| Variables | Normal output | | Generalized output | |
|------------------|----------------|-----------------|--------------------|-----------------|
| | (1) | (2) | (3) | (4) |
| CONSTANT | 0.56(0.22) | 1.30(0.48) | 1.32(0.47) | 1.48(0.44) |
| LGLABOR | 1.22(1.58) | 1.41(1.74)* | 1.89(1.92)* | 2.00(2.33)** |
| LGCAPITAL | 0.40(0.56) | 0.24(0.33) | -0.23(-0.25) | -0.15(-0.17) |
| LGL ² | 0.15(2.27)** | 0.16(2.41)** | 0.28(3.11)*** | 0.22(2.58)** |
| LGC ² | 0.06(1.21)** | 0.07(1.35) | 0.10(1.97)** | 0.12(1.96)** |
| LGLC | -0.22(-2.37)** | -0.23(-2.43)** | -0.41(-3.26)*** | -0.37(-3.14)*** |
| OWNORG | 1.35(3.36)*** | 1.17(2.73)*** | -0.33(-0.56) | -2.85(-1.93)* |
| M-EDU | -0.54(-2.56)** | -0.60(-2.65)*** | -0.30(-1.16) | -0.91(-1.82)* |
| M-PARTY | -0.99(-2.44)** | -1.12(-2.47)** | -1.06(-1.90)* | -2.27(-2.21)** |
| M-EXP | -0.33(-1.62) | -0.37(-1.64) | -0.66 (-2.17)** | -0.41(-1.03) |
| YEAR | -0.22(-1.29) | -0.06(-0.30) | 0.40(1.20) | 1.09(2.11)** |
| REWARD | 1.16(2.92)*** | 1.03(2.66)*** | 0.31(0.74) | -0.11(-0.55) |
| RANGE | | -1.83(-2.10)** | | -1.92(-2.21)** |
| LGSHARE | | -1.45(-1.90)* | | -1.03(-1.33) |
| HIGH-RANK | | 0.08(0.78) | | 0.42(0.67) |
| LOW-RANK | | -0.05(-0.61) | | 1.22(0.22) |
| CONSTRAINT | | 0.13(2.22)** | | 0.35(1.21) |
| σ_v^2 | 0.60(0.094) | 0.39(0.0571) | 0.57(0.087) | 0.38(0.0604) |
| γ | 0.900 | 0.843 | 0.889 | 0.810 |

Note 1. t statistics in parameter parentheses.

2. Standard deviation statistics in parentheses of σ_v^2 .

firm's efficiency, firm manager's political affiliation would affect firm's efficiency as well. The role of party member is significantly associated with firm performance. We find the firm-government relation variables have the same effects as we have discovered above.

This result is an empirical extension to Tian's initial idea (2001), which identified external management ability as an important determinant in firm performance, and the external management ability can help both firm and industry sector to increase the performance. However, he didn't give an empirical methodology to testify the role of firm-government relation, besides, he switched too quickly from micro level to macro level without any convincing supports. We have learned from our estimation results, while network relations to local government correspond to valuable resources at the micro level, these do not necessarily translate into productive resources at the macro level. At the macro level favorable market access does not necessarily correlate with firm's efficiency and hence does not imply higher economic performance.

5 Conclusion

The study of local government's role in local business is a rapidly developing field and has been extended to a diverse set of interpretations. This paper has challenged the result of Tian (2001), who suggested that the external relation with local governments may help to increase the productivity of firms at both macro and micro level. Using the lobby theory and the social network conception, we find that on the contrary to Tian, the productive success at micro level of firm performance could no more hold at the macro level. Furthermore, after deriving a micro foundation of concept of external management ability, we suggest firm-government relation mainly implies the favorable access to input/output markets reflected in firm's specific terms of trade, which however does not increase firm's technical efficiency. In addition, in accompany with the survey in Zhejiang province, we have found the significant role of firm-government relations played in firm's performance. The empirical result support our conjecture that firm-government relation mainly affect firm's performance via specific terms of trade, however, at the macro level favorable market access does not necessarily correlate with firm's efficiency and hence do not imply higher economic performance.

Since we choose agribusiness industry as our sample, it is necessary to focus on the firm-government relation model in this industry sector. In China, "Dragon head" or "leading" companies are specifically defined in the field of agribusiness, those firms are selected established or supported by government authorities in localities to contract with farmers to procure products with specific attributes. This concept emphasizes links between farmers and processing and marketing companies to strengthen farmers relationships with the market, to raise farm incomes and to guarantee the factors input to firms. Under the mutual contract, farmers provide labor, land and important inputs, while the dragon head company provides seed, operating lanes, fertilizer and technical expertise. Within this system, farmers have less control over the marketing process, while the agribusiness firms enjoy both lucrative markets and close relationships with local bureaus. Almost 30% of agribusiness firms in our interview are either county level or even provincial level dragonhead agribusiness companies, while other 70% are either private or have fewer network relations with local governments. The ownership structure of those dragonhead firms is ambiguous, take our sample as an example, although most of the firms have strengthened their private ownership status, many firm managers admit the strong involvement of local government in helping to organize the inputs and

output market chances, to facilitate the investment plan, and to get easier access to finance. The government's role may include ownership, direction, or provision of land, facilities, credit, or subsidies. From our estimation we can conclude that the dragonhead agribusiness model, which is heavily associated with local governments, may not help the industry sector development at macro level.

Our major results clearly highlight that firm's network relations to local government have a significant and positive effect on firm's economic performance. However, while firm's relations to local government clearly improve access to scarce inputs or to lucrative output markets and hence increase firm's economic performance via favorable individual terms of trades, no significant effect of these relations on firm's technical efficiency has been found. Therefore, in the contrast to existing literature it has been concluded that firm-government relations increase firm's economic performance at the micro level, but not necessarily at the macro level. This negative result follows straightforwardly from our quantitative analyses, indicating that improved market access of individual firms does generally not translate into an increased overall efficiency of a sector.

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Summary

Over the last decades, China's GDP has achieved outstandingly high economic growth rate in the world. Various scholars highlight special institutional framework conditions, particularly the role of local government as a key factor explaining China's economic success. The patterns and effects of relations between politics and business have long been discussed. Different arguments are introduced from macro and micro perspectives to investigate the influences of local governments in local economy. There are generally two mechanisms: market-preserving federalism by Weingast, which implies "hard budget constraint" and denotes that the decentralization can be understood as "commitment device" from the central government to local governments; Tian emphasizes the role of local government as "public manager" from micro perspective, firms are able to get access to limited resources and lucrative output markets via external management ability with local governments. However, there hardly exists a common consistent analysis, which theoretically and empirically explains the role of the local government in firm's market transactions and economic performance. This PhD thesis mainly employs extensive data collected in Zhejiang province of China in interviews with managers of TVEs (Township and village Enterprises), government officials, and academics, to analyze the structure and effects of network relationship between rural firms and rural administrative offices in China.

The dissertation develops a comprehensive theoretical framework which concerns the impact of institutional framework on economic performance at the micro and macro level. After extensively examining the existing literature, the conception of firm-government network relations and strategic alliances as external management resources is operationalized by applying social capital and social network analysis. At the methodological level it integrates quantitative network methodologies with advanced micro-econometric analyses of firm production (stochastic frontier approach) to systematically study the impacts of firm-government network relations on firm's economic performance in China. In particular, by using a unique own survey of agribusiness firms a comprehensive and theoretically founded econometric analysis of the impact of firm-government relations on economy performance at the micro and macro level has been conducted.

Major results of the dissertation clearly highlight that firm's network relations to the local government have a significant and positive effect on firm's economic performance. However, while firm's relations to the local government clearly im-

prove the access to scarce inputs or to lucrative output markets and hence increase firm's economic performance via favorable individual terms of trades, no significant effect of these relations on firm's technical efficiency has been found. Therefore, in contrast to the existing literature it has been concluded that firm-government relations increase firm's economic performance at the micro level, but not necessarily at the macro level. This negative result follows straightforwardly from the analyses, since improved market access of individual firms does generally not translate into an increased overall efficiency of a sector. It can be further concluded that each firm competes for the better access to resources is normally similar to the subvention payment, a Pareto optimal allocation cannot be achieved, and therefore, a social waste in the sector is generated.

Zusammenfassung

In den letzten Jahrzehnten hat China ein beeindruckendes Wirtschaftswachstum erreicht. Zur Erklärung dieser enormen Wirtschaftsleistung eines sozialistischen Systems, das China bis heute ist, werden in der Literatur die speziellen institutionellen Rahmenbedingungen in China, insbesondere die Rolle der lokalen Regierung als Promoter der Wirtschaft, diskutiert. Dabei gibt es verschiedene Makro- bzw. Mikrotheorien, die die Rolle der lokalen Regierungen hinsichtlich der Effizienz der lokalen Wirtschaft zu erklären versuchen. Auf der einen Seite ist hier die Makrotheorie des "Market Preserving Federalism" von Weingast zu nennen, wobei Weingast eine stärkere Dezentralisierung von der nationalen zu den lokalen Regierungen als ein "commitment device" versteht, das unter anderem ein "hard budget constraint" impliziert. Alternativ hebt Tian die Rolle der lokalen Regierung als "Public Manager" auf der Mikroebene hervor, der über externe Management-Qualitäten verfügt, die im sozialistischen System den Zugang zu knappen Ressourcen sowie lukrativen Absatzmärkten ermöglichen. Allerdings gibt es bisher weder eine umfassende theoretische Analyse, die die Rolle der lokalen Regierung hinsichtlich des Marktzugangs und der wirtschaftlichen Leistung der Unternehmen erklärt, noch gibt es entsprechende empirische Analysen, die die Bedeutung der Firm-Government-Relation zwischen lokaler Regierung und Unternehmen quantitativ analysiert.

In diesem Zusammenhang liefert die Dissertation am Beispiel ländlicher Regionen in der Provinz Zhejiang eine umfassende empirische Analyse der Bedeutung von Firm-Government Relations für die wirtschaftliche Leistungsfähigkeit von Agribusinessunternehmen auf der Mikroebene und deren makroökonomische Implikationen. Ausgangspunkt der empirischen Analysen ist eine auf der Grundlage der bestehenden Literatur durchgeführte theoretische Analyse der Bedeutung der Netzwerkbeziehungen zwischen lokaler Regierung und lokalen Unternehmen auf der Mikro- und Makro Ebene. Methodisch wurde die quantitative Netzwerkanalyse mit mikroökonomischen Schätzverfahren der stochastischen Frontier-Analyse verbunden, indem Netzwerkindikatoren, die die individuellen Firm-Government-Beziehungen beschreiben, als Determinante der technischen Effizienz und des Marktzugangs individueller Agribusinessunternehmen verwendet wurden.

Zentrale Ergebnisse der Analysen sind, dass Netzwerkbeziehungen zu der lokalen Regierung eine bedeutende und positive Auswirkung auf die wirtschaftliche Leistung von Agribusinessunternehmen ausüben. Allerdings führen diese Beziehungen im Wesentlichen zu einer signifikanten Verbesserung des Zugangs zu Input- und

Outputmärkten und erhöhen somit die wirtschaftliche Leistung der Unternehmen aufgrund verbesserter Terms of Trade, während hinsichtlich der technischen Effizienz individueller Unternehmen keine signifikante Wirkung der Netzwerkbeziehungen nachgewiesen werden konnte. Entsprechend konnte im Gegensatz zu der bestehenden Literatur insgesamt geschlussfolgert werden, dass Firm-Government-Relations zwar die ökonomische Performanz individueller Unternehmen auf der Mikroebene erhöhen, aber dies nicht unmittelbar zu einer Effizienzsteigerung des gesamten Sektors auf der Makroebene führt. Dieses zunächst überraschende (kontraintuitive) Ergebnis folgt unmittelbar aus den empirischen Schätzergebnissen, da ein verbesserter Marktzugang einzelner Unternehmen analog zu Subventionszahlungen in der Regel nicht zu einer Pareto-optimalen Allokation knapper Ressourcen, sondern zu einer intrasektoralen Wettbewerbsverzerrung führt.

A List of Sample firms

| County | ID | Firm | Sector |
|--------|-----|--|---------------------------------|
| Yuhang | E01 | Jiamei Touring Nutrition Foods CO.,LTD | Snacks |
| Yuhang | E02 | Shenwang Food Co., LTD | Snacks |
| Yuhang | E03 | Wangwang Food Co., LTD | Food and snacks |
| Yuhang | E04 | Shun Feng Xiang Food Inc. | Food and snacks |
| Yuhang | E05 | Peng Fei food company | Food and snacks |
| Yuhang | E06 | Zhong ren food company | Food and snacks |
| Yuhang | E07 | Chaoshan Fruits firm | Fruit canned processing |
| Yuhang | E08 | Yi Jiangnan Tea Co., LTD | Tea manufacture and processing |
| Yuhang | E09 | Yinquan Tea Co., LTD | Tea manufacture and processing |
| Yuhang | E10 | Jiuyi Food company | Food and snacks |
| Yuhang | E11 | Yuhang Slaughtering Co., LTD | Meat manufacture and processing |
| Yuhang | E12 | Mingbao Food Co., LTD | Tea manufacture and processing |
| Yuhang | E13 | Yaotaitai Food Co., LTD | Food and snacks |
| Yuhang | E14 | Dawang Food Co., LTD | Food and snacks |
| Yuhang | E15 | Huaweiheg Food Co., LTD | Food and snacks |
| Yuhang | E16 | Changle Can Food Co., LTD | Fruit canned processing |
| Yuhang | E17 | Yimin Food Co. LTD | Food and snacks |
| Yuhang | E18 | Wanlong Meat Products Co., LTD | Meat processing |
| Yuhang | E19 | Yiwan Feedstuff Technology Co., LTD | Agro-chemistry |
| Yuhang | E20 | Dalu Tea Company | Tea manufacture and processing |
| Yuhang | E21 | Songtian Food Co., LTD | Meat processing |
| Yuhang | E22 | Lifemate Food Co., LTD | Food and snacks |
| Yuhang | E23 | Mingzhou Food Co., LTD | Meat manufacture and processing |
| Yuhang | E24 | Meiyuan Food Co., LTD | Food and snacks |
| Yuhang | E25 | Xingting Tea Co., LTD | Tea manufacture and processing |
| Yuhang | E26 | Guoda Food Co., LTD | Food and snacks |
| Yuhang | E27 | Cangqian Jiahe Cereals & oils processing Factory | Cereals processing |
| Yuhang | E28 | Yajia Food Co., LTD | Food and snacks |
| Yuhang | E29 | Meihua Food Co., LTD | Food and snacks |
| Yuhang | E30 | Henghua Food Co., LTD | Agro-chemistry |
| Yuhang | E31 | Kehuang Feedstuff Co., LTD | Agro-chemistry |
| Yuhang | E32 | Lingxin Food Co., LTD | Food and snacks |
| Yuhang | E33 | Jingu Wine Co., LTD | Cereal processing |
| Yuhang | E34 | Dayunhe Aquatic Feedstuffs Co., LTD | Agro-chemistry |
| Yuhang | E35 | Maidier Food Co., LTD | Food and snacks |
| Yuhang | E36 | Mingzhu Animal Health Care Products Co., LTD | Agro-chemistry |
| Yuhang | E37 | Baxian poultry husbandry Enterprise | Meat manufacture and processing |
| Yuhang | E38 | Huaying Sheep Farming Enterprise | Meat manufacture and processing |
| Yuhang | E39 | Shenwang Food Co., LTD | Snacks |
| Yuhang | E40 | Wangwang Food Co., LTD | Food and snacks |
| Yuhang | E41 | Shun Feng Xiang Food Inc. | Meat manufacture and processing |
| Yuhang | E42 | Peng Fei food company | Food and snacks |
| Yuhang | E43 | Zhong ren food company | Food and snacks |
| Yuhang | E44 | Chaoshan Fruits firm | Fruit canned processing |
| Yuhang | E45 | Yi Jiangnan Tea Co., LTD | Tee processing |
| Yuhang | E46 | Yinquan Tea Co., LTD | Tee manufacture and processing |

| County | ID | Firm | Sector |
|--------|-----|--|--|
| Yuhang | E47 | Jiuyi Food company | Food and snacks |
| Yuhang | E48 | Yuhang Slaughtering Co., LTD | Meat manufacture and processing |
| Yuhang | E49 | Mingbao Food Co., LTD | Tea manufacture and processing |
| Yuhang | E50 | Yaotaitai Food Co., LTD | Food and snacks |
| Yuhang | E51 | Dawang Food Co., LTD | Food and snacks |
| Yuhang | E52 | Huaweihe Food Co., LTD | Fruit canned processing |
| Yuhang | E53 | Changle Can Food Co., LTD | Fruit canned processing |
| Yuhang | E54 | Yimin Food Co. LTD | Fruit canned processing |
| Yuhang | E55 | Wanlong Meat Products Co., LTD | Meat manufacture and processing |
| Yuhang | E56 | Yiwan Feedstuff Technology Co., LTD | Agro-chemistry |
| Yuhang | E57 | Dalu Tea Company | Tea manufacture and processing |
| Nanxun | H01 | Lin fu fei Chemical material Co., LTD | Agro-chemistry |
| Nanxun | H02 | De taishun Meat Processing Co., LTD | Meat manufacture and processing |
| Nanxun | H03 | Yaji Agribusiness Processing Co., LTD | Meat manufacture and processing |
| Nanxun | H04 | Mayao Yongfeng Meat Processing Co., LTD | Meat manufacture and processing |
| Nanxun | H05 | Fangyuan Meat Processing Co., LTD | Meat manufacture and processing |
| Nanxun | H06 | Greatwall Meat Processing Co., LTD | Meat manufacture and processing |
| Nanxun | H07 | Zhongwei Chemical material Co., LTD | Agro-chemistry |
| Nanxun | H08 | Kang falai dried vegetables | Fruit and vegetables canned processing |
| Nanxun | H09 | Jinniu Nongzhuang Co., LTD | Meat manufacture |
| Nanxun | H10 | Feixiang Cereal processing enterprise | Cereal processing |
| Nanxun | H11 | Zhongcheng Co., LTD | Cereal processing |
| Nanxun | H12 | Lianshi Wine enterprise | Wine manufacture |
| Nanxun | H13 | Sanling Feestuff Co.,LTD | Agro-chemistry |
| Nanxun | H14 | Tianhu Aquatic feedstuff Co.,LTD | Agro-chemistry |
| Nanxun | H15 | Make Shipai Meat Manufacturing Enterprise | Meat manufacture |
| Nanxun | H16 | Chengxiang Group | Meat processing |
| Nanxun | H17 | Shenhao Agri processing Co.,LTD | Meat processing |
| Nanxun | H18 | Dongfang Food Co.,LTD | Food and snacks |
| Nanxun | H19 | Xintianzi Conditioner Co.,LTD | Agro-chemistry |
| Nanxun | H20 | Maoye Food Co.,LTD | Food and snacks |
| Nanxun | H21 | Tianhu Aquatic feedstuff Co., LTD | Agro-chemistry |
| Nanxun | H22 | Tianwang Group | Food and snacks |
| Nanxun | H23 | Huajin Kang Co., LTD | Meat manufacture and processing |
| Nanxun | H24 | Zhenlu bio-chemistry Co.,LTD | Agro-chemistry |
| Nanxun | H25 | Jinsheng Feedstuff Co., LTD | Agro-chemistry |
| Nanxun | H26 | Huanghu Tee manufacture Co.,LTD | Tea manufacture and processing |
| Nanxun | H27 | Xinliang Cereals & oils processing Factory | Cereals processing |
| Nanxun | H28 | Tainian Agro-chemistry Co., LTD | Agro-chemistry |
| Nanxun | H29 | Changxing Feedstuff Co., LTD | Agro-chemistry |
| Nanxun | H30 | Yuansheng Agribusiness and trade Co., LTD | Food and snacks |
| Nanxun | H31 | Wushun Food Co., LTD | Food and snacks |
| Nanxun | H32 | Qinya Food Co., LTD | Food and snacks |
| Nanxun | H33 | Caishi Food Co., LTD | Food and snacks |
| Nanxun | H34 | Yixin Food Co.,LTD | Food and snacks |
| Nanxun | H35 | Zhongtian Agro-chemistry Co., LTD | Agro-chemistry |
| Nanxun | H36 | Yuhua Food Co., LTD | Meat manufacture |
| Nanxun | H37 | Runchang Food Co., LTD | Meat processing |
| Nanxun | H38 | Huayu Meat processing factor | Meat processing |

| County | ID | Firm | Sector |
|--------|-----|--|---------------------------------|
| Nanxun | H39 | Huacheng Agribusiness and trade Co., LTD | Food and snacks |
| Nanxun | H40 | Guoda Food Co., LTD | Fruit canned processing |
| Nanxun | H41 | Nanfeng Food Co., LTD | Fruit canned processing |
| Nanxun | H42 | Linghu Food Co., LTD | Fruit canned processing |
| Nanxun | H43 | Yangshi Food Co.,LTD | Fruit canned processing |
| Nanxun | H44 | Huajing Fruit processing Co., LTD | Fruit canned processing |
| Nanxun | H45 | Dongxing Food Co., LTD | Fruit canned processing |
| Nanxun | H46 | Changsheng Food Co., LTD | Fruit canned processing |
| Nanxun | H47 | Rongshun Meat processing factor | Meat processing |
| Xihu | X01 | Shuntian Feedstuff Technology Co., LTD | Agro-chemistry |
| Xihu | X02 | Baizhuang Tea Company | Tea manufacture and processing |
| Xihu | X03 | Baoli Bio-chemistry Co.,LTD | Agro-chemistry |
| Xihu | X04 | Hongda Food Co., LTD | Food and snacks |
| Xihu | X05 | Gushi Tea Company | Tea manufacture and processing |
| Xihu | X06 | Yufeng Tea Co.,LTD | Tea manufacture and processing |
| Xihu | X07 | Aifa Garten Feedstuff Technology Co., LTD | Agro-chemistry |
| Xihu | X08 | Shengsheng Tea Company | Tea manufacture and processing |
| Xihu | X09 | Falai Bio-chemistry Co.,LTD | Agro-chemistry |
| Xihu | X10 | Fucheng Meat processing Co.,LTD | Meat manufacture and processing |
| Xihu | X11 | Tianyi Meat processing Co.,LTD | Meat manufacture and processing |
| Xihu | X12 | Huijia fengmu Bio-chemistry Co.,LTD | Agro-chemistry |
| Xihu | X13 | Jiangxue Aquatic Feedstuff Technology Co., LTD | Agro-chemistry |
| Xihu | X14 | Jinwu Tea Co.,LTD | Tea manufacture and processing |
| Xihu | X15 | Yaou Group | Meat manufacture |
| Xihu | X16 | Shengyi Feedstuff Technology Co., LTD | Agro-chemistry |
| Xihu | X17 | Jinjiang Tea Co.,LTD | Tea manufacture and processing |
| Xihu | X18 | Changming Bio-chemistry Co.,LTD | Agro-chemistry |
| Xihu | X19 | Huanke processing Co.,LTD | Meat manufacture and processing |
| Xihu | X20 | Linshan Fruit processing Co.,LTD | Fruit canned processing |
| Xihu | X21 | Dibang Aquatic Feedstuff Technology Co., LTD | Agro-chemistry |
| Xihu | X22 | Anxi Tea Co.,LTD | Tea manufacture and processing |
| Xihu | X23 | Weili Meat slaughtering and processing Co.,LTD | Meat manufacture and processing |
| Xihu | X24 | Ruyuan Food Co., LTD | Food and snacks |
| Xihu | X25 | Zhengzhu Food Co.,LTD | Food and snacks |
| Xihu | X26 | Wensheng Food Co.,LTD | Food and snacks |
| Xihu | X27 | Longwu Tea Co.,LTD | Tea manufacture and processing |

B Questionnaire

Note 1. The following questionnaire was designed in 2008, and was conducted by the collaboration work between Zhejiang University and Kiel University.

2. Since most of the firms did not report any information on firm-firm relations (C10-C12), we had very few information on this proposed question. We did not get any empirical facts regarding the firm-firm relationship.

NO.

Basic characteristics of Rural firms in China (Questionnaire)

| |
|------------------------------|
| Firm: |
| Name of interviewer Partner: |
| Village/ Township/ Province: |
| Address: |
| Tel/ Fax |

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All information will be kept confidential and anonymous, and the result is only used for academic research.

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Part A: General Questions**A1.** What the property rights does the business currently have/ and when it was registered?

| Registered | Now | Ownership |
|--------------------------|--------------------------|---|
| <input type="checkbox"/> | <input type="checkbox"/> | Private (individual) |
| <input type="checkbox"/> | <input type="checkbox"/> | State-owned |
| <input type="checkbox"/> | <input type="checkbox"/> | Township and Village Enterprise (TVE) |
| <input type="checkbox"/> | <input type="checkbox"/> | Foreign-invested * If foreign: What proportion of your organisation's capital do they own? |
| <input type="checkbox"/> | <input type="checkbox"/> | Limited partnership |
| <input type="checkbox"/> | <input type="checkbox"/> | Limited Joint-stock Company |
| <input type="checkbox"/> | <input type="checkbox"/> | Limited liability Company |

A2. Please specify your enterprise's leading products or services

| | |
|------------------------------|----------------|
| Leading products or services | Other products |
|------------------------------|----------------|

A3. Please indicate the how long (years) your firm has originally operated.

| 0-5 | 6-10 | 11-15 | 16-20 | >21 |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| <input type="checkbox"/> |

A4. Please indicate the workforce situation of your business in 2007.

| | Number | % local residents | % seasonal workers | Average monthly wage |
|----------------|--------|-------------------|--------------------|----------------------|
| Employee | | | | |
| - managers | | | | |
| - white collar | | | | |
| - blue collar | | | | |

Manager's Profile

A5. Please indicate which age group you are in:

| 18-24 | 25-29 | 30-39 | 40-49 | 50-60 |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| <input type="checkbox"/> |

A6. Please indicate the stage at which you completed your formal education.

| Junior school or below | Senior school/ technical school | College Degree | Bachelor Degree | Master Degree | PhD or higher |
|--------------------------|---------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

A7. What is your position in the firm? (Check all apply)

| Owner | CEO | Vice-manager | Sales manager | Others |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| <input type="checkbox"/> |

| | Yes | No |
|---|--------------------------|--------------------------|
| A8. Are you a party member? | <input type="checkbox"/> | <input type="checkbox"/> |
| Are you a member of People's Congress? *specify the level | <input type="checkbox"/> | <input type="checkbox"/> |
| Are you the member of the industry association? | <input type="checkbox"/> | <input type="checkbox"/> |

A9. Please indicate years of work experience in your current profession.

| 0-5 | 6-12 | 13-20 | 21-30 | >31 |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| <input type="checkbox"/> |

Part B: Economic and Accountancy Data Description

B1. Input and Output price Estimation.

| | 10-20% lower | 10 – 5% lower | < 5% lower | Average | >5% higher | 5-10% higher | 10-20% higher |
|---|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| The price level of main product your firm achieves compared to the average market price level is | <input type="checkbox"/> |
| The price level of input product your firm achieves compared to the average market price level is | <input type="checkbox"/> |

B2. Could you estimate the scale of input/ output price fluctuation last year?

| | Very little | Little | Moderate | Large | Very large |
|---------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| <u>Input price fluctuation</u> | <input type="checkbox"/> |
| <u>Output price fluctuation</u> | <input type="checkbox"/> |

B3. Could you compare your firms' current performance with those of close competitors in your region on a five-point scale?

| | Lowest 20% | Lowest 10% | Average | Highest 10% | Highest 20% |
|---------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| Total asset growth | <input type="checkbox"/> |
| After-tax return on total sales | <input type="checkbox"/> |
| Labor productivity | <input type="checkbox"/> |
| Market share | <input type="checkbox"/> |

B4. Describe how easy it is for you to access to the following factor resources?

| | Very difficult | Difficult | Medium | Easy | Very Easy |
|---------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| Inputs | <input type="checkbox"/> |
| Outputs(Sales) | <input type="checkbox"/> |
| Financial access (Credit) | <input type="checkbox"/> |

B5. Could you estimate the total production costs that are generated from the main business (Yuan)?

| Category | 2007 |
|---------------------------------|------|
| Total costs | |
| Among which: Raw material costs | |
| Energy and transportation costs | |
| Costs for social activities | |

B6. Could you estimate the following value generated from the main business (Yuan)?

| Category | 2007 |
|---------------------------|------|
| Net value of fixed assets | |
| Value-added Output | |
| Value of Bank loans | |

B7. Could you describe the sales in 2007?

| Product | Sales Revenue (Yuan) | Demographic percentage of sales | | | |
|---------|----------------------|---------------------------------|------------|----------|---------------|
| | | Local | Provincial | National | International |
| | | | | | |

Part C. Network Questions

Firm-Government Relationship

C1. Could you estimate your firm's strategy for dealing with the local government.

| No contact | A few administrative contacts | Some resource dependency contacts | Some investment contacts | Business partner |
|--------------------------|-------------------------------|-----------------------------------|--------------------------|--------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

C2. Check the arguments below.

| | Strongly disagree | Disagree | Partly agree | Agree | Strongly agree |
|--|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| a. Relation with both officials and business partners is the most essential factor for success in business. | <input type="checkbox"/> |
| b. Failing to cultivate those relations with officials has a significant effect on enterprise performance. | <input type="checkbox"/> |
| c. Local government still controls the resource of business activities. | <input type="checkbox"/> |
| d. Governments still have control power over input or output price. | <input type="checkbox"/> |
| e. I have complete faith in the integrity of the government department. | <input type="checkbox"/> |
| f. The local government would try to gain advantages over my business. | <input type="checkbox"/> |
| g. Compared to the beginning of the reform era, it is now more difficult to gain favorable treatment through personal relation with officials. | <input type="checkbox"/> |
| h. I would support the development of the local economy in any case. | <input type="checkbox"/> |
| i. I have thought to move to other regions to expand the business. | <input type="checkbox"/> |
| j. It is easier to get credit or loans from financial institute through personal relationship with government. | <input type="checkbox"/> |

C3. Can you tell the supporting/regulation program you have received from local government?

| | Tax reduction | Rent reduction | Employment support | Administrative support | Product Reward |
|--------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| Supporting program | <input type="checkbox"/> |
| | License | labor | Environment | Trade | Tax |
| Regulation program | <input type="checkbox"/> |

C4. In the following, please tell the over the last six months, administration-related contacts from whom you regularly keep in touch with for business (maximum 10)?

For the managers, please fill in the right column of "Manager's Assessment", for others, please fill in the left column of "other assessment". STR is defined as close friends or family members with whom you have close relation and frequent social contact, WEK is defined as acquaintances or administrative partners with whom you have some social activities, like applying for the licenses, tax issues or other presences at conference held by specific organizations.

List of political bureaus in local area

| List of government bureaus | Manager's Assessment | | Other Assessment | |
|---|--------------------------|--------------------------|--------------------------|--------------------------|
| | STR | WEK | STR | WEK |
| C1 County government | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| C2 County Economic and development Bureau | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| C3 County development and reform Bureau | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| C4 County Land and resources Bureau | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| C5 County Environment protection Bureau | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| C6 County Technology Bureau | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| C7 County Industry and Commerce Bureau | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| C8 County Bureau of Quality and Technical Supervision | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| C9 County Construction Bureau | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| C10 County Economic development Area Association | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| C11 County Agriculture promoted Bureau | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| C12 County Food and Drug Administration Bureau | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| C13 County Tax Bureau | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| C14 County Economic and Trade Bureau | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| C15 County personal and labor Bureau | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| T1 Township Government | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| T2 Township Bureaus | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| B1 Commercial banks, local branch | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| B2 Private financial institutes | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| B3 Rural credit cooperatives | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

C5. Please recall the last informal dinner, at which the local officers or assistance from local bureaus took part in as well. Could you estimate when did it take place?

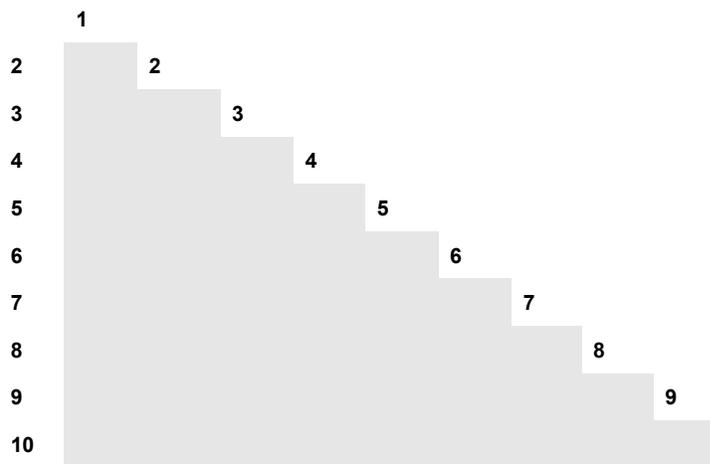
| In 3 days | In a week | In 2-3 weeks | In a month | More than a month |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| <input type="checkbox"/> |

C6. Could you write down the initial names of the officers at table? Please indicate in which level of government the officers or assistance work for.

| List of officers | Level of Government | Strong/weak |
|------------------|---------------------|-------------|
| 1 | | |
| 2 | | |
| 3 | | |
| 4 | | |
| 5 | | |
| 6 | | |
| 7 | | |
| 8 | | |
| 9 | | |

| | | |
|-----------|--|--|
| 10 | | |
|-----------|--|--|

C7 Could you estimate the links between the officers or assistances based on your own experiences? Just indicate 1 if they are very familiar with each other, indicate 0 if they do not have ties or you do not know the relationship among them.



| | |
|--|---|
| | Yes No |
| C8-1. Do local government officials have direct shares in your firm? | <input type="checkbox"/> <input type="checkbox"/> |
| C8-2. Do the relatives of local government officials have shares in your firm? | <input type="checkbox"/> <input type="checkbox"/> |
| C9. Describe shortly about the diversity of shareholders (For example, their industry). | |

Firm-Firm Relationship

C10 Trustworthy on suppliers and customers.

| | | | | |
|------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| | Very trustworthy | ←—————→ | | Not at all |
| Do you trust your suppliers? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Do you trust your customers? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

| | |
|--|---|
| | Yes No |
| C11. Are you belong to a business group or do you control some other firms as a business group? | <input type="checkbox"/> <input type="checkbox"/> |

C12. Over the last six months, are there any business-related contacts with whom you regularly did business and kept negotiation relations? Write down the name of each firm. Start with the one you have to keep highest frequency relation. Write down the attributes of the named firms. In the cell of "Characteristics", please answer whether the firm is supplier, customer, competitor or others; in the cell of "location", please write down the general region/county the partner is in; in the cell of "year of partnership", please indicate the total years you and your partners keep in touch with each other.

| List of firm partners | Characteristics | Location | Year of Partnership |
|------------------------------|------------------------|-----------------|----------------------------|
| 1 | | | |

| | | | |
|----|--|--|--|
| 2 | | | |
| 3 | | | |
| 4 | | | |
| 5 | | | |
| 6 | | | |
| 7 | | | |
| 8 | | | |
| 9 | | | |
| 10 | | | |

Please describe the relations between the firms you have named above, and the code are stand for:
D: Distant relation. Firms or persons are total strangers or never trade.
C: Close relationship.
E: Especially close relationship.

| | | | | | | | | | |
|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 1 | | | | | | | | | |
| 2 | DCE | 2 | | | | | | | |
| 3 | DCE | DCE | 3 | | | | | | |
| 4 | DCE | DCE | DCE | 4 | | | | | |
| 5 | DCE | DCE | DCE | DCE | 5 | | | | |
| 6 | DCE | DCE | DCE | DCE | DCE | 6 | | | |
| 7 | DCE | DCE | DCE | DCE | DCE | DCE | 7 | | |
| 8 | DCE | 8 | |
| 9 | DCE | 9 |
| 10 | DCE |

Thanks again for you cooperation!

LEBENS LAUF

JIANGPING HAN, GEBOREN AM 5. OKTOBER 1981 IN HANGZHOU, CHINA

Schule

1989-1994 Grundschule Zijinguanxiang
1994-2000 Hangzhou Nr.4, Gymnasium

Universität

2000-2004 BSc. Economics, Fachrichtung International Handel und Business,
Zhejiang Universität, China
2004-2006 MSc. Agrarwissenschaften, Fachrichtung Agrarökonomie und
Agribusiness, Christian-Albrechts-Universität zu Kiel
2007-heute Wissenschaftliche Mitarbeiterin am Institut für Agrarökonomie,
Christian-Albrechts-Universität zu