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The Road from Socialism to Capitalism: Determinants of the Private Sector Development in Chinese Industry*

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Abstract This paper investigates the determinants of capitalistic development in the context of transition economies. It is hypothesized that there are three categories of determinants of development of capitalist economy: (1) autonomy, (2) trade barriers, and (3) contract enforcement. The hypothesis is tested by examining how state control, infrastructure and education, and legal personnel affect development of the private sector in China's industry. Based on a panel data set of 28 regions from 1984 to 1995, I find that the share of private industrial sector expanded faster where and when the state control was weaker, and transportation, communication, education, enforcement and location were better.

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1. Introduction

Capitalism is an economic system based primarily on private property rights and market mechanisms.[1] It is now generally recognized that capitalism is the most effective institution in allocating most resources. After its triumph in the Western industrialized countries, capitalism is now sprawling into transition and developing economies. However, across time and space, development of capitalist economy has had enormous variations such as from the "East Asian miracle" to African stagnation. What are the determinants of development of capitalist economy? What is the role of the state in the process? These controversial issues have been studied for a long time in the context of the rise of the Western world, the fall of ancient China, and the catching up of today's developing countries. A large variety of views have emerged to highlight different factors behind the development of capitalist economy, ranging from religion, values, demographic factors, location, technology, institutions to pure luck. More recently, in search for the determinants of development of capitalist economy, the majority of the learned views tend to converge to and focus on institutional factors with an emphasis on the crucial role of the state (e.g., North 1990, World Bank 1997). However, systematic econometric tests of such theories seem lacking in the literature.

Today more than twenty economies, with about one-third of the world population, are in transition from socialism to capitalism. This event posts unprecedented challenges as well as opportunities for students of political economy to refine and test the institutional theories of capitalistic economic development. In most post-Soviet Union republics and Eastern and Central European economies, massive privatization programs were launched, and subsequently numerous private firms emerged after the early 1990s. However, the privatization process has generally been much slower than expected. Casual observations suggest that private business has developed rapidly only in the sectors where *real* state control was weak and where erecting trade barriers was difficult, such as in retail sales and services (Brada 1996).

Private sector also started to develop in China from scratch after 1978 when the reform was launched. By the late 1990s, the private sector, including individual

[1] Capitalism, according to Webster's Collegiate Dictionary, is "an economic system characterized by private or corporate ownership of capital goods, by investments that are determined by private decision

farming, provided some less than half of the gross domestic product. However, the rise of capitalist economy in China was largely unanticipated. Thus far the Chinese Communist Party has never drafted any explicit blueprint for privatization. Capitalist economy was not specified as an explicit official development target in the Fifteenth Party Congress held in 1997, which was generally regarded as a turning point of the launch of implicit privatization. Another feature is that the development of the private sector in China has varied greatly both across a large number of regions and across time during the last two decades. What can explain this largely unintended rise of the private sector and its great variations across space and time?

Based on existing theories of institutions, particularly the state and market development, this paper aims to formulate a simple hypothesis on the determinants of development of capitalist economy, and to test the hypothesis in the context of private business development in China's industry. In Section 2, I will review the process of private business development with a focus on the private rural industrial sector in China after 1978. A testable hypothesis will be formulated in Section 3. Section 4 presents the econometric test results. Section 5 provides concluding remarks.

2. The development of private sector in China after 1978

In China, private sector was basically prohibited by the communist party-state after the "collectization moment" in 1958 and before the beginning of reform in 1978. From 1978 to 1984, agriculture was essentially privatized under the "household responsibility system." After the mid-1980s, private business started to develop significantly in industrial and serving sectors. Our discussion shall focus on "industry" because the industrial sector provides more than half of the total national output, and because for which there are more complete data sets. Total industrial output includes the output of state-owned enterprises (SOEs), collective enterprises, and private enterprises in the industrial sector. The SOEs are owned by all citizens in principle, but they are controlled by and affiliated to governments at the country-level or above in practice. Collective enterprises include both urban collective enterprises and rural collective enterprises. An urban collective enterprise is typically owned by all workers in the enterprise in principle, but it is typically controlled, to a lesser

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rather than by state control, and by prices, production and the distribution of goods that are determined mainly by competition in a free market." (9th Edition).

degree in comparison with the SOEs, by or affiliated to a government at the county-level or above. Rural collective enterprises include township enterprises and village enterprises, which shall be discussed later. Private enterprises include individual-owned enterprises, partnerships, share-holding companies and share-holding cooperatives where private shares are dominant, and various other forms.[2]

In terms of industrial output, the share of private industrial enterprises increased from almost nothing in the late 1970s to about one-third by the mid-1990s. In terms of number of firms, most newly established firms in the reform era were private firms, especially after the early 1990s. The total number of industrial firms increased from some 5.2 million in 1985 to nearly 8 million in 1996, of which the number of state-owned firms remained almost constant at approximately 100,000, and the number of collective firms decreased from more than 1.7 million to less than 1.6 million. The number of private firms nearly doubled from some 3.3 million to some 6.3 million during the same period (*China Statistical Yearbook* 1991: 391; 1997: 411).

There are three major types of private enterprises: Chinese rural private enterprises, Chinese urban private enterprises, and foreign enterprises in China. The development of these different types of private enterprises was shaped by a number of industrial and institutional factors. Compared with most post-Soviet Union republics and Eastern and Central European economies, China had a relatively large agricultural sector, and its state control remained significant, especially in the urban industrial sector. Foreign direct investments (FDI) began to inflow significantly into China only after 1992.[3] Consequently, before 1992 private business had largely developed in the rural area. Indeed, it is estimated that before 1992 the private rural industrial sector provided more than some 70% of output in the (entire) private industrial sector.[4] Thus

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[2] The Chinese government regards an enterprise with less than eight employees as *individual-owned* (*getihu*), and an enterprise with eight or more employees as *privately-owned* (*siying qiye*).

The original form of a "share-holding cooperatives" (*gufen hezuo zhi*) is where the major part of the shares is owned by the local government and/or by workers collectively and the remaining part is owned by individuals, and where there are restrictions on share transfers and withdrawals and dividend payments. But presently the "share-holding cooperatives" can take various forms of ownership, including private share-holding companies with some restrictions on share transfers.

[3] FDI inflow in 1992 alone surpassed the total accumulated stock of FDI inflow from 1978 to 1991.

[4] From 1986 to 1991, within the (entire) private industrial sector, the output share of the rural *individual-owned* enterprises was about 50% or more, and the output share of the urban *individual-owned* enterprises was some 5% or less. The remaining (45% or so) was *private-owned*, of which the output share of foreign enterprises increased from some 25% to about 45%. Thus, within the (entire) private industrial sector, the output share of foreign enterprises increased from some 10% to about 20%, and the output share of Chinese *private-owned* enterprises decreased from some 35% to about 25%. If we assume the output ratio of rural to urban *private-owned* enterprises is similar to that of rural to urban *individual-owned* enterprises, then during this period the output share of the rural *private-*

the following discussion shall focus on the development of the private rural industrial sector after 1978.

After a land reform in the late 1940s and the early 1950s, a collective farming system, known as the *people's commune system*, replaced private farming in rural China by the late 1950s. The people's commune system was based on a three-tier collective ownership structure with people's communes on the top, production brigades in the middle, and production teams as basic accounting units. Under this system, economic and political decisions were integrated and made by the communist party agencies; for most of the time before 1978, individuals were basically not allowed to possess major production means, and communes, brigades and production teams were largely forbidden to conduct business outside of agriculture. Thanks to the lack of both autonomy and incentives, the people's commune system had disastrous economic consequences in rural China for two to three decades.

In 1978, the Third Plenum of the Eleventh Chinese Communist Party Congress decided to boost the development of agriculture and rural industry. In the following year, the State Council issued the "Draft Regulations on the Development of Commune-Brigade Enterprises." Central to these policy shifts was to grant some autonomy to local governments and households. From 1982 to 1984, the people's commune system had been replaced by a *township-village system*, under which economic and political decisions are supposed to be made separately by the government agency and the party agency respectively. During the same period, the "household responsibility system" had spread to all over China, which granted both autonomy for farming and residual claims to rural households. In the first half of the 1980s, individuals were allowed to conduct business in agriculture-related sectors, though basically not outside of agriculture, while communes, brigades and production teams could conduct business in certain sectors outside of agriculture.

These institutional changes have brought an "agricultural revolution" with agricultural output growing at more than 7% annually from 1978 to 1984. During the same period, however, rural industry consisting of commune-brigade enterprises had only some moderate progress. This was because first, in the early stage of the reform, an agricultural sector with labor productivity at subsistence-level could not support

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owned enterprises decreased from some 30% to more than 20%, and the output share of the private rural industry, including both rural *individual-owned* and rural *private-owned,* decreased from some

industrialization, and second, more importantly, the regulations of the central government largely prohibited private business and tightly restricted collective business.

Rural industry took off in the mid 1980s after the Central Communist Party and the State Council jointly issued the "Report on Creating a New Situation in Commune-Brigade Enterprises" in 1984. The report renamed commune-brigade enterprises "township and village enterprises" (TVEs), relaxed the restrictions on collective business, and allowed private business to operate outside of agriculture. These decentralization policies along with the "agricultural revolution" triggered a "rural industrial revolution." The output of TVEs grew at about 25% annually from 1984 to 1995, and by 1995 it became roughly equal to that of (urban) state-owned enterprises.

There are three major types of TVEs: *township enterprises*, *village enterprises* and *private (rural) enterprises* with each producing about one third of their total output by the mid 1990s. The first two types constitute the *collective TVEs*. Township enterprises in a township are owned by all citizens in the township and controlled by the township government. Village enterprises in a village are owned by all citizens in the village and controlled by the village committee. The property rights in township enterprises and village enterprises are far from well defined in the conventional sense.[5] Formally, all the citizens in a township (village) are the owners, which is stipulated by the central government regulations.[6] But an individual citizen becomes a nominal owner by his local citizenship automatically, thus having no rights to choose asset ownership. A nominal owner typically holds no (explicit) shares and cannot transfer, sell or authorize to heritage "his part" of the collective assets.

Despite their vaguely defined property rights, collective TVEs overshadowed private enterprises in the 1980s. This was mainly due to the institutional constraints imposed on the private enterprises and also due to a poor legal system during this period. However, private enterprises have developed much faster, especially after the

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80% to more than 70% in the (entire) private industrial sector. (The raw data are from *China Statistical Yearbook* and *Statistical Yearbook of China's Industry* in various years.)

[5] For the details of this and other features of the TVEs, see Weitzman and Xu 1994, Chun and Wang 1994, Che and Qian 1998, and Li 1998.

[6] See the "Provisions on Commune and Brigade Enterprises (Draft)," Section 6, 1979; "Report on Commune and Brigade Enterprises Development," Section 8, 1984; "Regulations on Township and Village Collective Enterprises," Article 18, 1990; "Township and Village Enterprise Law," Article 10, 1996-97.

early 1990s. Within the rural non-agricultural sector, private enterprises employed some 15% of workers and produced some 15% of output in 1984, and these two shares had quickly increased to about a half and more than a third respectively by 1995.[7] As state control gradually relaxed and the legal system continued to improve, private enterprises increasingly had a competitive edge over collective enterprises and SOEs. Both SOEs and collective enterprises eventually began to privatize in the early 1990s. A survey estimates that more than 70 percent of small SOEs have been fully or partially privatized in Shandong and a few other provinces (*China Reform Foundation* 1997:35). By 1997, in many regions more than one half of collective TVEs had been privatized in various forms, such as "share-holding cooperatives" or simply "sell-out."[8] The privatization of TVEs has been faster than that of SOEs, and is accelerating, especially in regions where neighboring townships have more private enterprises.

A turning point was in 1993, when the State Administration of Industry and Commerce issued “Some Points on Enhancing the Development of Individual and Private Business.” This document was aimed to implement the policy of establishing a “socialist market economy with diversified ownership structure” put forward in the Fourteenth Communist Party Congress in 1992. The document specified the following important measures to boost the development of private business: First, resigned and retired party and government officials can conduct private business. Second, unless as specified in the state laws and regulations, private business can operate in any sector and in any way. Third, private enterprises can lease or take over state-owned and collective enterprises. These and other related measures have greatly boosted the development of private business after 1993. Since then both privatization of the existing SOEs and collective enterprises, and the establishment of new private enterprises and their expansion, have contributed to the rise of the private sector nationwide.

[7] These numbers are underestimated since unregistered private enterprises and registered private enterprises without accounting systems are not in the official statistics.

[8] In Zibo municipality of Shandong province, private shareholders owned 30% of the share of the TVEs in 1992 and 70% in 1995. By 1996, about one-third to one half of collective TVEs had been privatized in Nanhai of Guangdong. By the first half of 1997, more than 60% of the township enterprises in Shenyang of Liaoning became share-holding companies or share-holding co-operatives; 90% of the township enterprises with assets under 5 million yuan had been privatized in provinces such as Zhejiang and Jiangsu (*South China Morning Post* June 13 and 17, 1997).

However, the development of private business has varied greatly not only across time but also across space in China. For instance, by the mid-1990s private business had become predominant in Zhejiang, but remained negligible in Qinghai. One of the main reasons behind the observed great variations was the highly different degrees of autonomy enjoyed by regions. The central government has granted more autonomy to some regions, particularly the coastal regions, than to others, particularly the inland regions. One of the main measures to grant autonomy was through the designation of "economic reform experimental cities" after 1982.[9] The vast majority of SOEs and collective enterprises were under the direct control of municipal and county governments after the mid-1980s. The central government has granted significantly more autonomy to municipal governments in experimental cities than to those in other cities. An experimental municipality has generally in turn granted more autonomy to the SOEs, collective enterprises and lower-level governments under its jurisdiction. The granted autonomy includes a wide variety of control rights, including the rights to manage and restructure existing enterprises, and to set up new enterprises.

In particular, an experimental municipality has granted more autonomy to its county governments under a system of "municipal administration of counties." This system was adopted after 1982, and by 1990 some 36% of (all) counties were under the administration of municipalities. County-level governments are the lowest-level jurisdictions that can issue licenses to firms. Licenses to individual-owned business and private-owned firms are mostly issued by the *administration for commerce and industry* of the county-level governments. Due to intense cross-county competition, most counties have permitted or encouraged the establishment of new private firms in the reform era, especially after the early 1990s. However, the degree of permission and encouragement of private business varied greatly across regions; counties under the jurisdiction of an experimental municipality were much more likely to permit the establishment of new private enterprises.

[9] Other measures, such as the designation of "economic special zones," "economic and technological zones" and "open cities," also contributed to the variations of regional autonomy. However, these measures are found to be lesser important than the economic reform experimental cities.

3. A hypothesis on the determinants of development of capitalist economy out of socialism

Why did capitalist economy largely develop first in rural areas rather than in large cities in China after 1978? Indeed, this phenomenon is not unique to contemporary China. Historically, during the industrial revolution, capitalist economy first developed in rural areas and new towns rather than in large established traditional cities in England (Bairoch 1988). In Meiji Japan, many of the important entrepreneurs came from rising farming and trading families in rural areas (Olson, 1982). To explain this highly common phenomenon, in the following I will formulate a simple hypothesis on the key determinants of development of capitalist economy, and apply it to analyze transition economies, particularly the Chinese economy.

Given that capitalism is based primarily on private property rights and market mechanisms, I refer to the development of capitalist economy primarily as the development of private sector, including the expansion of the market. The hypothesis is as follows: there are three broad categories of determinants (conditions) for private sector development, including market expansion, and hence for the development of capitalist economy: (1) *Individuals and private agents have autonomy to make their own economic decisions.* (2) *There are no trade barriers across regions.* (3) *Contracts can be enforced.*[10] Autonomy is thus referred to as the freedom to make economic decisions including consumption, production, transfer, trade and investment. Indeed, autonomy forms part of the private property rights; that is, the owner can decide how to use his properties.

When autonomy cannot extend from one region to other regions, there are "institutional trade barriers" across regions, such as local monopoly power (e.g., local protectionism). Specifically, powerful interest groups, such as traditional craft guilds and modern conglomerates, and local governments, may erect institutional barriers to trade. When there are trade barriers, property rights are truncated at the regional level or across space. Clearly, barriers to trade are obstacles to market expansion across space. Besides institutional trade barriers, there are "economic trade barriers," such as inadequate infrastructure, including transportation and communication, and insufficient education. Better infrastructure can lower the costs of mobility of goods, people and information. More education can enhance the commonality of shared

[10] This hypothesis is based the conceptual framework of both "market-preserving federalism" by Qian and Weingast (1995), and "market-preserving authoritarianism" by Li and Lian (1998).

knowledge, skills and languages among people across regions, and hence reduce the costs of human turnover, mobility and communication.

When contracts cannot be enforced, property rights are truncated across time or space. The extent of the market is limited by the effectiveness of contract enforcement. Better enforcement of contracts helps to reduce uncertainties and costs of transactions, and hence to increase the incentives to trade and invest efficiently. Therefore, better enforcement of contracts can contribute to the expansion of various markets across time and space.

Although the hypothesis is simple, it is difficult for a political-economic system to fulfil all the three conditions simultaneously. To meet Condition (1), state control should be limited. On the other hand, to meet Conditions (2) and (3), state control is needed to implement anti-trust and anti-local protectionism regulations, to develop transportation, communication and education to facilitate mobility of goods, people and information, and to enforce property rights and contracts. Thus, the state needs to be strong enough to eliminate trade barriers, to provide public goods and to enforce contracts, but limited enough to preserve the autonomy of individuals and private agents. It is difficult to maintain such a balance. And a deviation from the balancing point may result in either a lack of individual autonomy or rampant trade barriers and contract violations.

In socialist economies, individuals have little autonomy due to the overwhelming state control. In transition economies, state control may or may not remain dominant for a long time depending on the adopted transition programs. But there is generally no independent legal system to effectively enforce property rights and contracts in a transition economy. There are tradeoffs between different transition programs. A big bang (wholesale) privatization program may bring autonomy quickly to individuals, but it may not enable the state to effectively limit trade barriers, and, more importantly, to enforce property rights and contracts, at least not in the short run. On the other hand, a gradualist (piecewise) transition program can only bring individual autonomy slowly, but, if properly structured, it may enable the state to limit both trade barriers and contract violations, and to provide other public goods.

China has adopted a gradualist (piecewise) approach for transition after 1978. After some fifteen years of reform, the state sector remained dominant in the urban area by the early 1990s. It is not surprising that individual autonomy has expanded only gradually. Nevertheless, individuals in both rural and urban areas were

increasingly allowed to trade, invest, and migrate freely, and more importantly, to set up private enterprises. The business of private enterprises has spread rapidly from crafts, food processing, and retailing to textiles, electronics, and raw materials, especially after the early 1990s. Besides the gradual but steady expansion of individual autonomy, one of the main reasons behind the rise of the private sector was that China was able to limit both interregional trade barriers and contract violations.

Local protectionism emerged first but diminished subsequently. In the early stage of decentralization, many local governments tried to protect their own enterprises from competition from other regions by erecting trade barriers. However, as the size of each local economy becomes smaller and the number of local economies becomes larger at a lower government level, erecting trade barriers by a local government becomes more costly, and hence competition becomes more intense. China is partitioned into some 30 provinces.[11] On average each province is partitioned into about 70 counties, and each county is further partitioned into about 25 townships. Currently, there are more than 50,000 townships each with a population of about 20,000 on average.

Protection may work for a short time. But anti-protection forces are also powerful. The more efficient firms and regions always try to break the barriers of other regions. More generally, protectionism often failed because efficiency gains from exchange significantly exceeded the net benefits of erecting trading barriers as both informal and formal arrangements emerged to capture the gains. In the late 1980s, local governments began to make treaties pledging to protect each other's enterprises as their own. For instance, it is reported that Shanghai had signed agreements on "the protection of the legitimate rights and interests of enterprises" with nine provinces.[12] In 1991, sixty four courts in eight prefectures and municipalities along the Yangtse river in Hunan and Hubei provinces signed agreements on the judiciary co-operation of cross-regional economic disputes settlement. It was the two high courts of the two provinces who initiated the

[11] More precisely, there were 22 provinces, 5 autonomous regions and 3 province-level municipalities in China in the time after Hainan became a province in 1988 and before Chongqing became a province-level municipality in 1997.

[12] See Yang Jisheng, "East-West Dialogue in China," *Liaowang zhoukan* (*Outlook Weekly*), overseas edition, February 27, 1989, no. 9, pp. 5-7. See also Clarke, Donald C., "The Creation of a Legal Structure for Market Institutions in China," in McMillan, John, and Barry Naughton (eds.), *Reforming Asian Socialism: The Growth of Market Institutions.* Ann Arbor: The University of Michigan Press, 1996, pp. 51 & 56.

agreements to mitigate local protectionism in lower level courts.[13] Eventually, in 1993, the central government enacted the Law of Anti-improper Competition, of which Article 7 prohibits local governments from using administrative means to erect trade barriers.

It should be noticed that local monopoly power and protectionism are much weaker and, thus, cross-regional competition is exceptionally stronger at the township level or below than that at the county level or above. First, governments at the county level or above are able to erect trade barriers through administrative and judicial apparatus, while township governments are not. Historically, township governance was not part of the state bureaucracy. In the 1950s, township governance became the lowest-level state bureaucracy. After being replaced by the people's commune system from 1958 to 1982, the township-village system was restored in 1982. Unlike the county government, the township government has no judicial or administrative apparatus to regulate and to control licenses, prices, taxes, banking, foreign trade, land, telecommunications and so on. There are courts, administration for industry and commerce, price bureaus, tax bureaus and land bureaus at the county level, but not at the township level. The banking industry is largely monopolized by state banks. State banks have branches down to the county level and the quotas of credit control are allocated down to the branches. Typically, there may be some business offices of state bank branches at the township level that usually lack loan decision-making rights.[14] Given this fact and the fact that SOEs are generally affiliated with governments at the county level and above while rural enterprises are generally affiliated with township governments or village committees, rural enterprises have less local protection and thus faced more interregional competition than the SOEs.

At the same time, the development of other public goods also helped to reduce trade barriers. Education, transportation and communication have improved significantly since 1978. Students returned to classrooms from their long-time training programs in farms, factories and army camps. Some new railways and the vast majority of new highways were built under the initiatives of local governments at various levels. The number of telephones had more than doubled from the early 1980s to the early 1990s.

[13] *Fazhi ribao* (*Legal System Daily*), July 24, 1991, p. 1.
[14] These county-level bank branches will be abolished in the financial system restructuring from 1998 to 2001.

In the reform era, contracts or agreements between private enterprises were either enforced formally by the courts or informally through personal relations, business associations, and local governments. In terms of state enforcement, the development of Chinese commercial law started in the 1980s and accelerated in the 1990s in the orbit of the civil law-Germanic family. Among others, the Economic Contract Law was passed in 1982 and amended in 1993. This law and two other contract laws involved in technology and foreign interests were eventually consolidated into the Contract Law in 1999. The General Principles of Civil Law (enacted in 1986) set forth guidelines for protection of property rights. At the same time, the supporting services related to measurement and verification of contracts have developed rapidly. In particular, the "Provisional Regulations of Lawyers" was passed in 1980, and it eventually evolved into the Law of Lawyers in 1996. The number of lawyers, including both full-time and part-time lawyers, had increased to some 100,000 by the mid-1990s from nonexistence in the early 1980s.

As for informal enforcement, a large part of private agreements perhaps relied on personal relations. Various business associations also mediated or arbitrated commercial disputes. Last but not the least, local governments, particularly township governments and village committees, served as enforcement mechanisms. This works in two ways. First, some private enterprises are registered as collective enterprises. Such disguised collective enterprises are generally affiliated with either a township government or a village committee, and thus called "collective-affiliated enterprises" (*guakao jiti qiye*). They pay a "management fee" to their affiliated governments, which help them to get things such as loans, land and business deals with other regions. That is, governments explicitly or implicitly guarantee credits and other contracts. It works since village committees, and especially township governments are "immobile," "immortal," and possess assets, and hence are qualified as "hostages" or "mortgages." Second, local governments can mediate the disputes between private enterprises in their jurisdiction.

4. An econometric test

The test is based on a panel data set that covers the period from 1984 to 1995 and 28 regions at the province-level excluding Tibet, Hainan and Chongqing. Tibet is omitted because its data are not complete in this period. Hainan became a separate

province from Guangdong in 1988. For a consistent comparison, I treat Hainan as part of Guangdong after 1988. Chongqing became a province-level municipality only after 1997. I shall pay special attention to the period 1984-1993 because many "collective-affiliated enterprises" have reregistered as private enterprises after 1993. I use four sets of independent variables to account for the development of private industrial sector: a set of variables related to autonomy or state control, a set of variables related to trade barriers, a set of variables related to contract enforcement, and finally, a set of variables related to natural conditions.

The development of private sector in industry This is measured by the share of private industrial sector in total industrial output (P) in a region at a given year. Recall that within the private industrial sector, the private urban sector and foreign business were insignificant before the early 1990s. Thus, to search for determinants of the development of private sector in industry from 1984 to 1993, we need to pay special attention to those factors that are closely related to the private rural industrial sector. These include the autonomy of township governments (and village committees) to which private rural enterprises are generally affiliated, rural communication facilities, and sown land areas defined below.

State control This is measured by three variables: the share of state-owned enterprises' employment in the (total) labor force (S), the number of cities selected for economic reform experiments (Z), and the percentage of peoples' communes which first followed the central government's instruction to transform themselves into townships (T) in a region. State-owned enterprises are controlled by governments at the county level and above. Governmental control of SOEs involves allocations of credits, goods and personnel. A larger share of the state sector in a region implies that governments at the country level and above have more control rights in financial, product and labor markets, and hence township governments and village committees and private agents have less autonomy in these markets in the region.

As indicated earlier, the central government has granted significantly more autonomy to the municipal governments in experimental cities than to those in other cities. An experimental municipality generally has in turn granted more autonomy to lower-level governments, particularly county governments, under its jurisdiction in the system of "municipal administration of counties."[15] The granted autonomy

[15] It is possible that the effect from the experimental cities may include the "city effect" on the development of capitalist economy. However, the "city effect," if any, is very limited. First, the number

includes a wide variety of control rights, including the rights to manage and restructure existing enterprises, and to set up new enterprises. Thus, a region with more cities selected for economic reform experiments enjoys larger autonomy.

The third variable (T) measures the autonomy of township governments somewhat more directly. In the 1982 revised constitution, the central government instructed all people's communes to transform themselves into townships. At that time, the economic reform just started, and most commune officials resisted to giving up their control rights and were against such a change. Thus, those communes, which first followed the central government's instruction to transform themselves into townships in 1983, were generally controlled more tightly by governments at higher-levels and, thus, had less autonomy than other communes which followed later. Therefore, a higher-percentage of peoples' communes that first followed the instruction to transform themselves into townships in a region implies a lower degree of autonomy enjoyed by the region.

We thus expect that the state employment share and the percentage of peoples' communes which first followed the instruction of transformation into townships have negative effects, while the number of experimental cities has positive effects on the development of private sector in industry.

Infrastructure and education Infrastructure here includes transportation and communication. These are measured by the ratio of railway length to land area (R),[16] and the ratio of the number of rural telephones to rural population (H) respectively. Education is measured by the ratio of secondary education enrolment to population (E) in a region,[17] where secondary education includes general secondary schools (both senior and junior) and specialized secondary schools. As discussed in Section 3, better transportation, communication and education can lower the costs of mobility and turnover of goods, people and information, and, thus, reduce trade barriers.[18] Thus, all these three variables are expected to have positive effects on the development of private sector in industry.

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of experimental cities is not proportional to the number of cities or the proportion of urban population in a region. Second, when incorporated into the regression, the proportion of urban population is found to have insignificant effect on the development of the private sector in industry.

[16] Highways and river channels are omitted since they are found to have negligible effects.

[17] Primary and tertiary are omitted since they are found to have insignificant effects.

[18] In addition, private business may be able to utilize transportation, communication and education, perhaps especially secondary education, more efficiently than the state and collective business.

Enforcement This is measured by the ratio of the number of lawyers to labor force. Given the fact that the Chinese legal system just started to develop from scratch after 1978, more lawyers should help to better verify and enforce property rights and contracts. Thus, we expect this variable to have positive effects on the development of private sector in industry.

Natural conditions These include location and land resources. They are measured by two variables respectively: the ratio of coastal line length to land area (*C*), and the ratio of sown land area to population (*A*) in a region. These two variables are expected to have positive effects on the development of private sector in industry because coastal regions are mostly adjacent to foreign capitalist economies and better location can reduce cross-country trade barriers, and because favorable sown land resources can facilitate rural development.[19]

I study how the independent variables in a given year affect the dependent variable some years later. To assure the robustness of the test, I test three different specifications with two different time lags:

$$(I):\ P_{it+3}-P_{it}=\alpha_0+\alpha_1 S_{it}+\alpha_2 Z_{it}+\alpha_3 T_{it}+\alpha_4 R_{it}+\alpha_5 H_{it}+\alpha_6 E_{it}$$
$$+\alpha_7 L_{it}+\alpha_8 C_{it}+\alpha_9 A_{it}+\sum_{s=88}^{93}\delta_s D_{s,t+3}+e_{it+3},$$

$$(II):\ P_{it+3}=\beta_0+\beta_1 S_{it}+\beta_2 Z_{it}+\beta_3 T_{it}+\beta_4 R_{it}+\beta_5 H_{it}+\beta_6 E_{it}$$
$$+\beta_7 L_7+\beta_8 C_{it}+\beta_9 A_{it}+\beta_{10} P_{it}+\sum_{s=88}^{93}\delta_s D_{s,t+3}+e_{it+3},$$

$$(III):\ P_{it+5}=\gamma_0+\gamma_1 S_{it}+\gamma_2 Z_{it}+\gamma_3 T_{it}+\gamma_4 R_{it}+\gamma_5 H_5+\gamma_6 E_{it}$$
$$+\gamma_7 L_{it}+\gamma_8 C_{it}+\gamma_9 A_{it}+\gamma_{10} P_{it}+\sum_{s=90}^{95}\delta_s D_{s,t+5}+e_{it+5},$$

$$for\ i=1,2,\cdots,28,\ and\ t=84,85,\cdots,90,$$

where subscript *i* indicates region *i*, *t* indicates year *t*, e_{it} is the error term, and D_{st} is the dummy variable for year *s*, such as 1988 (88). The year dummies can capture the time-specific effects including policy shifts.

[19] An alternative measure is the ratio of cultivated land area to population. However, the available data on cultivated area are not reliable.

In specification (I), the dependent variable is the change of the share of the private industrial sector in total industrial output, and the independent variables are the four sets of variables discussed above. In specifications (II) and (III), the dependent variable is the "future" share of the private industrial sector, and the independent variables include the four sets of variables discussed above and the initial share of the private industrial sector. In (I) and (II), the time lag is three years, and the period is 1984-1993. In (III), the time lag is five years, and the period is 1984-1995. The first consideration for choosing three-to-five year time lag is to assure to have enough number of observations and degree of freedom. The second consideration is that it takes four to six years to finish secondary education.

Due to data availability and the nature of some events, there are some exceptional cases for the timing of some data. First, we only have complete data of the number of experimental cities in 1987, and we thus use the same data for the years 1984 through 1990. Second, transformation from people's communes to townships began in 1983 and ended by and large in 1984, thus we use the data in 1983 for the years 1984 through 1990. Third, we have complete data of coastal lines in 1989. However, the same data can apply to the years 1984 through 1990 since there were no changes of coastal lines of provinces during this period. (Recall that we treat Hainan as part of Guangdong after 1988.) As a result, these three (time-invariant) variables can capture some of the region-specific effects.

The regression results are reported in Table 1. The three specifications generate similar results and all are statistically significant. All coefficients have the expected signs. All the three variables related to autonomy or state control affect the development of private sector significantly. The regression results suggest that a 1% lower state employment share can trigger 0.2% to 0.4% higher private industrial share three to five years later. Note that these results still hold when the initial share of the private industrial sector holds constant as it is in (II) and (III).

[Insert Table 1]

Among the three variables related to trade barriers, railway has the most, and secondary education has the least significant effect on the development of private industrial sector, with telephone being in between. Secondary education generates much larger and much more significant effect in five years than in three years.

(Compare III with I and II.) The variable related to enforcement--lawyers--has highly significant effect. Among natural conditions, coastline has highly significant effect, while sown land dose not.[20]

The coefficients of the year dummies are negative for the years before 1993, and positive for the years in or after 1993. This reflects three major policy and legal shifts during 1992 and 1993 toward the three conditions for the development of capitalist economy. First, as discussed in Section 2, autonomy of individuals has expanded significantly after the Fourteenth Communist Party Congress in 1992 and the State Council's document on enhancing the development of private business in 1993. This policy shift had two consequences: private business has developed more rapidly, and more "collective-affiliated enterprises" have reregistered as private enterprises since then. Both of these two changes have contributed to an increase of the private sector share. Second, as indicated in Section 3, in 1993 the central government enacted the Law of Anti-improper Competition, of which Article 7 prohibits local governments from using administrative means to erect trade barriers. Third, the Patent Law was revised in 1992, and the Economic Contract Law and the Accounting Law were revised in 1993. These legal changes have helped to reduce trade barriers and to better enforce contracts, thus contributing to the development of private sector.

In summary, I find that the share of private industrial sector in China expanded faster where and when the state control was weaker, and transportation, communication, education, enforcement and location were better. Our results suggest that the development of private sector or capitalist economy is shaped primarily by institutional factors, including autonomy and enforcement, and also by infrastructure and location factors.

5. Conclusion

The results of this paper confirm that autonomy, trade barriers and contract enforcement matter for the development of capitalist economy. This suggests that transition or decentralization programs, which grant autonomy to individuals, can

[20] This finding is consistent with the general observation that most newly industrializing economies have long coastlines but few land resources.

facilitate the development of capitalist economy. So do public policies, which enhance infrastructure, and regulations and laws, which help to reduce trade barriers and to enforce contracts. Indeed, the rise of capitalist economy in China was largely unintended. The Chinese Communist Party had never drafted any explicit blueprint for privatization; yet the policies, regulations and laws adopted after 1978 have fostered autonomy, transportation, communication, education and law enforcement, thus contributing to the rise of capitalist economy.

Our results are consistent with the recent empirical findings on the relations between law, finance and economic growth. It is generally found that a better legal system can support deeper and larger financial markets and a higher economic growth (La Porta, et al. 1998, Levine 1998). Some deeper questions are: how do state control, law, regulations and policies change or evolve? Will they evolve in the direction toward facilitating capitalistic development? To address these questions, we need to consider how the development of private sector feeds back to affect infrastructure, regulations and, more importantly, the legal system. These issues deserve further studies in the future.

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Appendix Descriptions and Sources of Data

Variable	Name of Variable	Measurement of Variable	Sources
P 1984-95	Share of the private industrial sector in total industrial output	Output of private industrial sector (i.e., other than state-owned and collective-owned) divided by total industrial output	**Data of industrial output (1984-1989):** ***Quan guo ge sheng, zi zhi qu, zhi xia shi li shi tong ji zi liao hui bian, 1949-1989***, Beijing: Zhong-guo tong ji chubanshe, 1990. **Data of industrial output (1990-1995):** ***China Statistical Yearbook***, Beijing: China Statistical Publishing House, 1991-1996. **Data of industrial output for Liaoning (1985-1989); Anhui (1994); Fujian (1994); Jiangxi (1985-1995); Shangdong (1990-1995):** ***China Regional Economy: A Profile of 17 Years of Reform and Opening-up***, Beijing: China Statistical Publishing House, 1996
S 1984-90	Share of state-employment in total employment	Staff & workers of state-owned units divided by total employed laborforce of society	**Data (1984-1989):** Hsueh Tien-tung, Li Qiang and Liu Shucheng, ***China's Provincial Statistics, 1949-1989***, Boulder: Westview Press, 1993. **Data (1990):** ***Yearbook of Labour of China (1990-1991),*** Beijing: China Labour Publishing House, 1992.
Z 1987	Number of comprehensive economic reform experimental cities	Number of comprehensive economic reform experimental cities	***China Economic Systems Reform Yearbook***, Beijing: Reform Publishing House, 1989.
T 1983	Percentage of communes adopting township system	The percentage of communes which became townships in 1983	***China Agriculture Yearbook 1984*****,** Beijing: China Agricultural Publishing House, 1984.
R 1984-90	Railway-land area ratio	Railway length divided by land area (km/km^2)	**Data of land area*****: Zhongguo fen sheng gaikuang shouce*****,** Beijing: Beijing chubanshe, 1984. **Data of railway:** ***China Statistical Yearbook*****,** Beijing: China Statistical Publishing House, 1985-1991.
H 1984-90	Rural telephone-rural population ratio	Total number of rural phones divided by rural population (number of phones per 10 thousand persons)	**Data of rural population:** ***China's Statistical Yearbook***, China's Statistical Publishing House, 1985-1991. **Data of rural telephones:** ***China Regional Economy: A Profile of 17 Years of Reform and Opening-up***, Beijing: China Statistical Publishing House, 1996; ***Rural Statistical Yearbook of China***, Beijing: China Statistical Publishing House, 1988-1990; ***Statistical Yearbook of Shanghai***, Beijing: China Statistical Publishing House, 1988-1990.
E 1984-90	Enrolment ratio of students in secondary education	Total number of students enrolled in all secondary schools* divided by population (number of students per 100 persons) *All secondary schools include general secondary schools (senior & junior), specialized secondary schools (secondary technical schools & secondary teacher training schools) and agricultural & vocational schools.	**Data of student enrolment:** ***Achievement of Education in China: Statistics 1986-1990*****,** The People's Republic of China: Department of Planning, State Education Commission, 1991. **Data of population:** ***China Statistical Yearbook***, Beijing: China Statistical Publishing House, 1985-1991.

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Variable	Name of Variable	Measurement of the Variable	Sources
L **1984-90**	Lawyers-laborforce ratio	Total number of lawyers* divided by total employed laborforce (number of lawyers per 10 thousand persons) *Lawyers refer to those persons who have obtained lawyer's qualification. Due to data availability, figures of 1984 to 1987 use 1985 data, and figures of 1988 to 1990 use 1988 data.	**Data of number of lawyers:** ***Zhongguo Shehui Tongji Ziliao***, Beijing: China Statistical Publishing House, 1987, 1990. **Data of total employed laborforce 1984-1989:** Hsueh Tien-tung, Li Qiang and Liu Shucheng, ***China's Provincial Statistics, 1949-1989***, Boulder: Westview Press, 1993. **Data of total employed laborforce 1990:** ***Yearbook of Labour of China (1990-1991),*** Beijing: China Labour Publishing House, 1992.
C **1984**	Coastline-land area ratio	Length of coastline at 1989 divided by land area at 1984 (m/km^2)	**Data of land area: Zhongguo fen sheng gaikuang shouce,** Beijing: Beijing chubanshe, 1984. **Data of length of coastline:** ***Atlas of the People's Republic of China***, Beijing: Foreign Language Press and China Cartographic Publishing House, 1989.
A **1984-90**	Sown area-agricultural population ratio	Sown area of agricultural crops[a] divided by agricultural population[b] (*mu* per person) a. Sown area of agricultural crop refers to area of land sown and trans-sown agricultural crops regardless of being in farmland or non-farmland. Area of land resown due to natural disasters is also included. b. Agricultural population refers to all population whose living rely on agricultural production (including forestry, farming and fishery), including the people who work in the agricultural sector and their dependants.	**Data of sown area:** ***China Agriculture Yearbook*****,** Beijing: Agricultural Publishing House, 1985-1991. **Data of agricultural population:** ***China Agriculture Yearbook*****,** Beijing: Agricultural Publishing House, 1985-1991.

Note: Figures of Guangdong include Hainan.

Summary Statistics of Variables

	Variable	Mean	Minimum	Maximum	Standard Deviation
P	**Share of the private industrial sector in industrial output**	11.42	0.00	51.24	10.27
S	**Share of state-employment in total employment**	23.81	10.15	57.53	13.08
Z	**Number of comprehensive economic reform experimental cities**	2.68	1.00	6.00	1.42
T	**Percentage of communes adopting township system**	36.08	0.00	100.00	33.03
R	**Railway-land area ratio**	1.73	0.08	9.50	1.87
H	**Rural telephone-rural population ratio**	23.81	5.28	153.86	22.30
E	**Enrolment ratio of students in secondary education**	5.10	3.01	8.00	1.04
L	**Lawyers-laborforce ratio**	0.51	0.09	2.56	0.47
C	**Coastline-land area ratio**	4.83	0.00	27.50	8.11
A	**Sown area-agricultural population ratio**	2.80	1.55	6.52	1.04

Table 1. Regression Results of Determinants of Share of the Private Industrial Sector* in Total Industrial Output

	Variable	I	II	III
	Constant	1.108 (0.437)	1.523 (0.284)	0.275 (0.899)
1.	**Share of state-employment in total employment**	-0.176 (0.000)	-0.203 (0.000)	-0.368 (0.000)
2.	**Number of comprehensive economic reform experimental cities**	0.521 (0.004)	0.560 (0.002)	1.128 (0.000)
3.	**Percentage of communes adopting township system**	-0.024 (0.001)	-0.027 (0.000)	-0.052 (0.000)
4.	**Railway-land area ratio**	0.624 (0.005)	0.683 (0.002)	1.574 (0.000)
5.	**Rural telephone-rural population ratio**	0.025 (0.072)	0.024 (0.078)	0.064 (0.002)
6.	**Enrolment ratio of students in secondary education**	0.313 (0.366)	0.303 (0.377)	0.922 (0.077)
7.	**Lawyers-laborforce ratio**	4.245 (0.0000)	4.693 (0.000	6.816 (0.000)
8.	**Coastline-land area ratio**	0.185 (0.000)	0.225 (0.000)	0.332 (0.000)
9.	**Sown area-agricultural population ratio**	0.251 (0.519)	0.311 (0.421)	0.329 (0.575)
10.	**Initial share of the private industrial sector in industrial output**	-	0.897 (0.000)	0.873 (0.000)
11.	**Year Dummy for 1988 (I, II), 1990 (III)**	-0.409 (0.580)	-0.263 (0.720)	-1.782 (0.111)
	Year Dummy for 1989 (I, II), 1991 (III)	-0.512 (0.497)	-0.242 (0.748)	-1.680 (0.143)
	Year Dummy for 1990 (I, II), 1992 (III)	-2.027 (0.008)	-1.607 (0.037)	-1.068 (0.360)
	Year Dummy for 1991 (I, II), 1993 (III)	-3.126 (0.000)	-2.693 (0.001)	0.712 (0.544)
	Year Dummy for 1992 (I, II), 1994 (III)	-2.164 (0.005)	-1.633 (0.038)	5.595 (0.000)
	Year Dummy for 1993 (I, II), 1995 (III)	2.357 (0.002)	2.876 (0.000)	9.510 (0.000)
	R^2	0.540	0.893	0.876
	Adjusted R^2	0.502	0.884	0.864
	F-stat	14.102 (0.000)	93.430 (0.000)	78.697 (0.000)
	No. of Observations	196	196	196

*Private industrial sector covers all industrial enterprises which are not state-owned nor collective-owned.

(P-value for two-tailed significance levels in parentheses)