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**LINEAGE NETWORKS, RURAL ENTREPRENEURS, AND MAX WEBER\***

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**Abstract**

Nearly a century ago, Max Weber studied Chinese lineage system and argued that the power of the patriarchal sib impeded the emergence of industrial capitalism in China. Recently Martin Whyte reevaluated Weber's thesis on the basis of development studies and argued that, rather than an obstacle, Chinese family pattern and lineage ties may have facilitated the economic growth in China since the 1980s. This paper attempts to empirically test the competing hypotheses by focusing on the relationship between lineage networks and the development of rural enterprises. Analysis of village-level data show that lineage networks, measured by proportion of most common surnames, have large positive effects on the count of entrepreneurs and total workforce size of private enterprises in rural China.

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## INTRODUCTION

At the beginning of the 20<sup>th</sup> century, in an attempt to support his analyses of the relationship between rationalization and the rise of modern capitalism in the West, Max Weber systematically examined Chinese society because he perceived China together with India as farthest removed from the western civilization. In *The Religion of China* ([1916]1951), Weber identified a number of features in Chinese society as inhibiting factors to the rise of capitalism. These factors include: Confucian ideology that glorified humanistic culturing and office-seeking and belittled commercial pursuit; patrimonial characteristics of the state bureaucracy that limited administrative rationalization;<sup>1</sup> prebendal officialdom and tax-quota system that bred systematic corruption;<sup>2</sup> a highly arbitrary legal system that resembled “khadi” justice;<sup>3</sup> and a strong patriarchal “sib organization” (lineage) that dominated the rural society.

In recent years many of Weber’s original observations have been brought under critical scrutiny. First of all, a number of scholars began to challenge Weber’s negative view of Confucianism either by reflecting on the success of the East Asian tigers (Berger 1980; Rozman 1991) or arguing that the New-Confucianism since the Song era is quite conducive to entrepreneurial spirits (Yu [1985]2004; Metzger 1986). Secondly, the patrimonial authority in imperial China was characterized as a variety of its own and different from the western ideal type (Hamilton 1984, 1990); and patrimonial authority is shown to be adaptable to modern large corporations (Biggart 1997). Thirdly, fiscal decentralization (tax-quota system) was singled out as an important system promoting local economic growth (Oi 1999; Walder 1995). Fourthly, new evidence reveals that the legal system of Qing China was much less arbitrary than Weber assumed (Huang 1996) and, if not fitting the definition of formally rational law based on pure legal reasoning, should be classified as “substantively rational”(Marsh 2000). Last but not least, Martin Whyte (1995, 1996) calls for a re-evaluation of the relationship between economic growth and Chinese family and kinship structures. It is the kinship aspect of Weber’s observations that I will focus on in this paper, using a village level data set on lineage networks and entrepreneurial activities in rural China.

Weber’s understanding and misunderstanding of China have been criticized on both methodological and conceptual grounds. Methodologically, Weber was relying on second-hand materials, often with gross mistakes in translation, and tended to disregard the chronological sequence of events (Van Der Sprenkel 1964). Theoretically, because Weber was using China as a negative case to support his general theses and ideal-types about western societies, his interpretation of Chinese history was “more based upon logical coherence than factual accuracy” and “through the typological filter provided by *Economy and Society*, Weber blocked out the distinctiveness of Chinese civilization” (Hamilton 1984: 401).

Given all the methodological flaws and factual inaccuracies, however, no one suggest that we should brush aside Weber’s work on China as irrelevant. This is because “even Weber’s mistakes are apt to be more stimulating, and open up more fertile lines of inquiry, than most other people’s target-centered truths” (Van Der Sprenkel 1964: 349). Every social scientists interested in China study should read *The Religion of China*, I think, not only because his profound insights and penetrating analysis shine through the passage of time and shed light on our present-day understanding of Chinese history, but more importantly because his arguments about China are closely related to his theory about the

rise of western capitalism and any confirmation or disconfirmation of the former bear on the latter. In this spirit, I will revisit Weber's thesis about sib organization as an obstacle to capitalism in China and place it in the context of his general theory about the role of rationalization in the rise of western capitalism.

Rural industrialization in China provides an ideal platform for examining the relationship between lineage networks, normally found in rural settings, and industrial enterprises, usually located in urban areas. The mushrooming of entrepreneurial activities in Chinese villages since the 1980s has brought the two ill-assorted phenomena in the same locale. Using village-level data collected in 1993-1994, I will first show that lineage networks have played a large role in promoting entrepreneurial activities in rural China and then discuss the implications of this finding for Weber's general theses about the link between rationalism, formalism and capitalism.

### **LINEAGE NETWORKS: OBSTACLE OR ENGINE?**

Rationalization is the central theme, "a master concept," in Weber's theory about the rise of modern capitalism. The patriarchal clan is a traditionalistic and therefore irrational social structure and its elimination is a precondition for the rise of capitalism. According to Weber, the task of eliminating the clan in the West was completed during the Middle Ages. Two rationalizing forces, the Christian church and the bureaucratic state, contributed to the disintegration of the clan and thus cleared the path for the rise of modern capitalism. Religious prophets built up their community of followers that ignored and cut across clan boundaries; the royal power feared the clan and replaced "lineage charisma" with bureaucratic authority (Weber 1927/1981: 44-45).

While being driven to extinction in the west, the clan organization was completely preserved in China and developed to an extent unknown elsewhere in the world (Weber 1951: 86). Even today, lineage still figures prominently in the social and economic life of Chinese peasantry. Weber characterized the state bureaucracy in imperial China, with its free and open official examination system,<sup>4</sup> as highly rational (i.e., favorable to capitalism), but at the same time "unmistakably" patrimonial (i.e., unfavorable to capitalism). The patrimonial bureaucracy was geographically thinned out over the large empire and had never grown strong enough to penetrate below the county (*xian*) level. Consequently the power of the clans remained unbroken and dominated rural society:

The rationalism of the bureaucracy was confronted with a resolute and traditionalistic power which, on the whole and in the long run, was stronger because it operated continuously and was supported by the most intimate personal associations... Economic organizations which went beyond the scope of the individual establishment rested almost wholly upon actual or imitated personal sib relationships... This sib organization [*tsung-tsu*] owned, in addition to the ancestral temple and the school building, sib houses for provisions and implements for the processing of rice, for the preparation of preserves, for weaving, and other domestic industries. Possibly a manager was employed. Apart from that, the *tsung-tsu* supported its members in need through mutual aid and free or cheap credit. (1951: 95-96)

Weber depicted the unbroken power of the clan as “sib fetters” that suffocated capitalist development. Because the clan provided so many of the individual’s social and economic needs, it fostered individual dependence, discouraged individual initiatives, and stifled individual freedom. The clan developed extensive auxiliary industries for self-consumption and thus slowed down the growth of profit-oriented capitalist enterprises. The power of the sib elders implied a steadfast adherence to tradition and rejection of any sort of innovation. Partly due to these "sib fetters," even the primitive form of capitalistic enterprises that matured in the west during the Middle Ages has failed to emerge in China (Weber 1951: 100).

Accurate or not in his description of the Chinese lineage system, Weber’s theoretical logic is clear. The concept of formal rationality is key to his overall theory of capitalism and is defined in the case of economic actions as the degree to which the provision of needs “is capable of being expressed in numerical, calculable terms, and is so expressed” (Weber 1968: 85). Economic rationality achieves its highest form in capital accounting, i.e., systematic and meticulous book-keeping and the striking of a balance. Capitalism is as old as history; capital accounting distinguishes modern industrial capitalism from primitive types. The “maximum formal rationality of capital accounting” depends, however, on a set of presuppositions (p. 161). Four of these presuppositions are relevant to the current analysis and are listed below (see Weber 1927, 1968; Collins 80):

- (1) The appropriation of all physical means of production (land, machines, etc.) by autonomous private enterprises. This implies that productive assets will be used for profit-making purposes.
- (2) Expropriation of all means of production from workers so that the workers are free and compelled to sell his labor under the whip of hunger. This “commodification of labor” (in Marxian term) allows the calculation of labor productivity.
- (3) A market system that is free from irrational limitations.<sup>5</sup>
- (4) Calculable formal laws and rational administration that guarantee property rights and contractual rights and ensure the calculability of the market exchange process.

With its patriarchal authority structure, the lineage system is distinctively traditionalistic and personalistic and hence contradicts these presuppositions of maximum formal rationality. First, corporate ownership of farmland and auxiliary industries may hamper the appropriation of productive assets by private enterprises. Second, kin obligation and personal loyalty may interfere with free selection of workers and its welfare aspects soften work disciplines. Third, the in-group solidarity and cohesion of the lineage pose barriers to free trade because of “ethical dualism,” i.e., double business practices for insiders and outsiders.<sup>6</sup> Fourth, its strong power may impede the full bureaucratization and rationalization of the state administration and thus deprive capitalism of calculable law and rational administration. Thus, a strong lineage would presumably inhibit the rise of capitalism.

Weber’s analysis about rationalization and the rise of capitalism has engendered an intellectual legacy that has shaped sociological discourse for generations and his work on China has made a similar impact on sinological discourse. American sociologists (e.g., Parsons 1937; Bendix 1962) elaborated the Weberian thesis and developed the dichotomy of universalism vis-à-vis particularism as the contrasting organizing principles of modern

vis-à-vis traditional societies. Modernization theorists (e.g., Inkeles 1966; Kerr 1964) embraced this dichotomy and prescribed that the task of modernization for the underdeveloped countries is to adopt (or wholesale import) the legal-rational institutions and value system of the western style.

Sinologists, e.g., Marion Levy (1949) and Albert Feuerwerker (1958) extended Weber's "sib fetters" argument to the study of Chinese familism. In *The Family Revolution in Modern China*, Levy (1949) argued that one prerequisite of modern industry is institutionalized universalism, but the "traditional" Chinese family was a highly particularistic structure. "Wide spread particularism as much as any other factor is a major obstacle to the spread of modern industry" (p. 354). Particularism "enormously complicates" the operation of modern enterprises in two major ways. One is pervasive nepotism in employment decisions where the first consideration was not competence and qualification but closeness in personal connection such as family members, relatives, friends, and localistic ties and so on. As a result the Chinese family firms tend to be staffed with incompetent family members whereas the talented outsiders are driven away. This kind of practices may be good for the family members but apparently bad for efficiency.<sup>7</sup>

The second dysfunctional manifestation of particularism is the difficulty in maintaining business relationship across organizations. Business transactions are not carried out efficiently in rational and impersonal manners, but often have to be smoothed with personal *guanxi*. Cultivating *guanxi* networks takes a large amount of time and energy and brew graft and corruption. Thus, Levy (1949) suggested that China should rely on the national government to invest in and operate large industrial establishments in order to achieve rapid industrialization because "there is a long tradition of universalism in this sphere"(p. 361).

During the past two decades, this negative view of Chinese family and kinship has come under fire, mostly from development studies. The economic success of Asian NICs, particularly, Taiwan, Hong Kong and Singapore, suggests that Chinese family structure, rather than being an obstacle, may actually be an engine of modern industrial development (Berger 1988; Wong 1985, 1988; Greenhalgh 1988). I summarize their arguments into three points.

First, instead of being dysfunction, family loyalty and obligations foster a hard working ethics. Chinese people work hard, live frugally, and exercise self-denial like the English Puritans. They work hard not for salvation or self-enjoyment, but for the welfare of their family, sons and daughters, and future offspring (Harrell 1985). A widespread critique of Chinese family businesses is that their growth is confined within the boundaries of the family core and close kin and that they tend to disintegrate by the second generation. Greenhalgh (1988) observes that family enterprises in Taiwan use family members to staff key decision-making positions and rely heavily on kin and friends for pooling capital, recruiting labor, and collecting information. Successful family enterprises may divisionalize among sons and daughters to form a group of related firms (*qiye jituan*). She describes the Taiwanese family enterprise as "the package of individual incentives and group insurance that promotes the emergence of highly motivated, risk-taking entrepreneurs" (pp. 233-34). Taiwan's economic miracle attests to the effectiveness of this organizational form.

Second, familism provides organizational loyalty and stable authority. In small family-operated enterprises, family members and kinfolk are willing to work long hours

and for low pay. They have natural loyalty to their family firm. They are likely to stay with the firm and help the firm to survive hard times (Niehoff 1987).

Third, reliance on kinship and personal networks is also more advantageous than problematic because it can reduce transaction costs by lowering the likelihood of commercial and legal disputes and providing trustworthy access to opportunities and resources in unstable political and economic environments. Furthermore, imitated kinship relations (*guanxi* networks) can grow beyond the boundaries of kinship groups and operate in ever widening circles. Wong actually played down the importance of kinship networks in Hong Kong's textile industry. "In Chinese economic conduct the crucial distinction is not that of kin and non-kin, but personal and impersonal." "While the kin circle is finite and bound, the personalized economic network used by the Chinese can reach widely...; family ties only serve as the nucleus from which a Chinese can spin a web of ever-widening social circles" (Wong 1988: 136-7).

Thus, Wong (1988) argued that by pinning his hope for modernization on the rationalizing effect of the Chinese state, Levy has totally misread the economic potential of Chinese families and "has bet on the wrong horse" (p.146). The great economic potential of the Chinese family has been constrained by the state preoccupied with "coordination and integration." Once these constraints are removed, the Chinese family could "fuel the engine of development"(p.146).

Comparing the main points of both engine and obstacle arguments, Whyte (1996) proposes that both sides are oversimplified. "Chinese families do not have the immutable qualities that conflict with modern economic activity, or for that matter that can fuel growth under all circumstances" (p. 20). He points out that the Communist Revolution in China has transformed the Chinese family patterns, such as the shift from extended to nuclear family, the phasing out of pre-arranged marriage, the softening of the power of the elders, etc. But the collective farms distributed harvests to peasant families as a whole and allowed the families to keep private plots and engaged in some side line production. As a result, some features of Chinese familism persisted, such as family loyalty and obligations to the larger kinship network, sacrifice by members for the sake of the family, and the power of the kin relationships upon individual behavior. It is these persistent patterns that provide favorable conditions for economic development during the reform era. "The continued strength of family loyalties provided a resource that could be used to mobilize family economic efforts under changed conditions while the softening of the parental authority helped to ensure that these efforts would be innovative and productive direction" (Whyte 1995: 1007). However, this entrepreneurial potential of the new Chinese family patterns had been pent-up by the socialist command economy. Return to family farming and market-oriented liberalization since 1978 unleashed its potential.

Clanism (*zongzu zhuyi*) is an extreme but logical extension of familism (*jiazu zhuyi*). To the extent both operate on particularistic principles and rely on personal ties, arguments about why Chinese family patterns should foster entrepreneurial capitalism are applicable to kinship structure as well (Whyte 1995). In keeping with Whyte's analysis, I propose that Chinese lineage system has also gone through a transformation and has become conducive to entrepreneurial activities during the reform era, a hypothesis to be developed in the next section.

## **LINEAGE NETWORKS AND RURAL ENTREPRENEURS**

Clan organization in Chinese history has gone through a vicissitude of evolution and changes as well. Contrary to Weber's belief that the lineage system in China has been preserved intact and static from antiquity to the present, the primitive agnatic political organizations that were closely enmeshed with feudal prerogatives survived only to the period of the Warring States some two millennia ago. The Qin emperor, in his process of building an empire and state bureaucracy, did strategically break the powerful clans, especially those of the conquered states. The lineage organizations that sinologists observed today were actually reconstructed by the Song imperial state under the influence of New-Confucianists (Ebrey 1986; Qian 1994; Chang 2000). The New-Confucian mandarin and scholars perceived an affinity between ancestor worship and their central concept of filial piety (*xiao*) and decided to encourage its development among the plebeian. Weber was correct in describing the lineage as the "only corporate actor" in the Chinese countryside, because it did own communal land, which were rented to its members on preferential terms, built ancestral halls, maintained schools, sometimes operated handy-craft industries, extended cheap credit to its members (Freedman 1958; Qian 1994).<sup>8</sup> As the head of the corporate actor, the lineage elder used to wield great power over lineage members, included carrying out death penalties such as the caning or drowning of serious offenders of clan codes. Weber was incorrect, however, in overstating the conflict and tension between the lineage and the state bureaucracy because the lineage normally worked with rather than against the state in mediating conflicts, administering justice, protecting the property and lives of its members, and even collecting taxes for the state (Zhong 2000; Huang 1993; Wang 1991). Historically, the clan power did not confront or counterbalance the power of the state bureaucracy. Rather, the bureaucratic state chose to let the clan power grow due to exhaustion of administrative resources and overstretching of central control.

The lineage system was to face the most serious and unprecedented challenges posed by the Communist Revolution. Since the 1950s the Communist Party waged deliberate assaults on the lineage organizations. It confiscated clan communal land and properties, deprived clan elders of their power, repealed clan codes, and injected the ideology of class consciousness and class struggle to diffuse clan identity (Wang 1991). Consequently, the economic foundation and organizational structure of the lineage system were systematically dismantled and replaced with collective farms and grassroots administration. During the collectivization campaign and the Cultural Revolution, ancestral halls, the shrine where ancestors are consecrated, were turned into offices, schools, or storage rooms, if not destroyed; genealogy books were burned as feudalistic remnants; and of course, the *fengshui* of ancestral burial sites was disturbed. Lineage seemed being reduced to a subterranean cultural phenomenon, a lingering mentality.

In 1978 Deng Xiaoping launched China on a long and arduous march toward capitalism. Collective farms were dismantled and households, again, became the basic units of economic activities. With the more liberal atmosphere following the market reform, ancestral halls were rebuilt, genealogy recompiled, and annual pilgrimage to the ancestral burial sites reactivated, usually with the ardent support of clan members. The ghosts of dead forefathers were revived, not to reinstitute the patriarchal power of the elders, but to create solidarity and identity among off-springs, which can be used for new purposes. Without economic resources, the authority of clan leaders is mostly symbolic and ritualistic, based primarily on personal charisma, seniority, and ability. Their duties include

presiding over marriage ceremonies and burial rituals, mediating conflicts within the clan, organizing collective activities, and occasionally making clan-related decisions (Wang 1991).

Instead of being a hierarchically organized corporate actor, the revived lineage today is a collective actor, i.e., an agnatic community with a common identity. To use Coleman's (1990) distinction, a community is the group of natural persons who may bind themselves together through collective action to pursue their common interests. "But in a corporation a new entity has been created, whose interests and resources are distinct from those who brought it into being" (p. 539). Obviously, lineage in contemporary Chinese villages fits the definition of a community—the locus of collective action and normative control. All its structural features spell social capital benefits. Strong ties provide the bonds and obligations; cultural identity generalizes bilateral bonds and obligations into group loyalty; leadership and density help mobilizing these resources into capacities for collective action and normative control. In other words, lineage becomes a network resource (social capital) that the rational actors (families, individuals or both) decide to use or not use and how to use it. Ironically, the revived strength of lineage is most clearly demonstrated in the village elections that have been instituted all over China in the 1990s. Political scientists and government officials become quite concerned with the swaying of village elections by powerful lineage groups (Xiao 2001; Liu 2005).

The normative control capacities of lineage networks manifest two aspects: bounded solidarity and enforceable trust.<sup>9</sup> Lineage solidarity protects the collective and individual interests of lineage members against perceived or real outside threats. Kin trust promotes trustworthy and cooperative behavior between lineage members. In a parallel paper (Peng 2004), I argue that during the early stage of China's transition from planning to market, lineage solidarity and kin trust promoted rural entrepreneurship by protecting entrepreneur's property and contractual rights when the formal legal framework was ineffective. The following paragraphs recount my argument.

Rural industrialization in China has attracted much academic limelight, because it has been the locomotive of China's economic growth for the past two decades and has played a crucial role in China's successful transition from a planed economy to a market economy (Peng 1999; Oi 1999). It is also a sector with the most vibrant entrepreneurial activities. In official language, rural enterprises are called *xiangzhen qiye*, translated as township-village enterprises or TVEs, which actually include both collective and private enterprises. The ownership configuration of this sector has given rise to heated debates among scholars (Rawski 1999; Woo 1999; Peng 1992, 2001, 2004; Walder 1995; Nee 1992). According to national statistics (Figure 1), from 1984 to the mid-1990s while the number of collective TVEs stagnated between 1.8 to 1.6 millions, the number of registered private entrepreneurs, with or without employees, mushroomed from about 4 millions to over 20 millions. Although the collective sector maintained a healthy growth in terms of employment and output, the private sector was growing at a faster rate and surpassed the collective sector in the mid-1990s. After the mid-1990s, the collective sector started shrinking due to a privatization campaign.

The changing ownership configuration reflected the changing legal environment regarding private entrepreneurs. Generally speaking, the evolution of formal government policies is a process in which the central state yielded, step by step, to the preferences of economic actors for private ownership while abandoning gradually its adherence to the

socialist orthodox of collective ownership. Before the 1980s, private entrepreneurial activities were strictly forbidden. Throughout the 1980s and up until the mid-1990s, the central government insisted on the “dominant role” of public ownership. Enforcement of the constitutional rights of private entrepreneurs was ineffective at best. Specific legal codes to protect private property rights are still being incubated today. On the one hand, new constitutions carved out a general platform for private entrepreneurial initiatives. On the other, the vague wording of the constitution, ambivalent attitudes of the center, and the vacillating political ideology gave local actors much leeway to interpret and improvise. After 30 years of socialist indoctrination, the idea of respecting the property and contractual rights of private entrepreneurs took time to sink in. With some exceptions, local cadres tended to suppress, harass, and prey on private entrepreneurs, sometimes out of ideological bias, and more often out of more rational reasons: their bonuses and benefits were pegged to these “extra-budgetary” revenues. Private entrepreneurs faced discrimination in dealing with the state sector (such as banks and SOEs) and had to endure harassment and extortion by local officials, tax collectors, and a myriad of other government agencies at different levels. Prior to the mid-1990s, cadre predation and political discrimination were probably the biggest obstacle to the development of private entrepreneurship. When their rights were violated, private entrepreneurs did not have any specific legal codes to turn to for help. They had to seek shelter in informal norms and social networks.

A lineage group may help its entrepreneurs via three possible mechanisms. Firstly, lineage solidarity may help protecting private property rights in the absence of effective formal property rights law. Historically lineage organizations functioned to protect the lives and property of kin members, as well as to mediate conflicts and administer informal justice. The protection of property was particularly relevant for private entrepreneurs during the reform era because they needed the shelter from predatory cadres. The intrinsic solidarity of the lineage group may provide such protection. If the village cadre is non-kin, then he would not want to take on the power of the whole clan. If the cadre is kin, then he is bound by kinship obligations to protect and support fellow kin. If the cadre does not honor his obligation to support his kin and preys on them instead, he may face collective sanction such as ostracism. This is not to say that predatory behavior never occurs among kinsmen, but that it may occur less frequently and less blatantly than among non-kin. Chinese peasants may not have the concept of universal rights, but they do have a deep-rooted sense of kin obligations.

Secondly, kin trust may facilitate economic transaction and cooperation such as inter-personal loans and pooling of funds. Because the official financial institutions discriminated against private entrepreneurs, informal rotary credit associations (*biaohui*) that rely on kinship and social networks have played an important role providing start-up capital and emergency cash to private entrepreneurs (Tsai 2000).

Thirdly, lineage network may provide useful bridging ties (see Burt 1992 for definition). During partial reform, *guanxi* ties were very important for both obtaining plan-allocated goods and for channeling market information, especially for private entrepreneurs who were excluded from plan allocation (Nee 1992; Wank 1999; Xin and Pearce 1996). But I doubt this is very important mechanism because kin ties are mostly non-bridging ties, which are not useful for startup entrepreneurs (Renzulli, Aldrich and Moody 2004).

## DATA, MEASUREMENT AND METHOD

The administrative village is my unit of analysis. I use two sample data sets collected by sociologists at the Chinese Academy of Social Sciences in 1993 and 1994. The 1993 sample consists of 259 villages from 15 counties and the 1994 sample consists of 119 villages from 7 counties.<sup>10</sup> The 22 counties were selected by “experts” with an eye to representativeness, and the villages in each county were randomly sampled on a proportional basis (for a description of the survey, see Shen, Chen, and Gao 2000). After deleting 12 villages from the two samples with missing or outlying values on key variables, 366 valid cases were retained.<sup>11</sup>

To give an idea of an administrative village, there are on average 439 households in the sample villages, with a mean population of less than two thousand. The largest village in the sample has a population close to 10,000, and the smallest village 194 people.

### Measurement

Nearly identical questionnaires were used in both surveys, and they included questions regarding the number of rural enterprises in the village and the number of households belonging to each lineage group. The key variables are defined in the following, and basic statistics are reported in Table 1.

Private enterprises refer to the count of rural enterprises in a village owned by single households or multiple households in partnership.<sup>12</sup> This measure does not include small-scale family operations, that is, self-employed individuals. Only 29% of the sample villages reported any private enterprises. On average there are three and a half private enterprises in the sample.<sup>13</sup>

The rural enterprise employment is the total labor force working in rural enterprises, including both employees and employers. Because the growth of rural enterprises in China is primarily through size expansion, employment data should serve as a good alternative measure of rural industrial development.<sup>14</sup> Private enterprise employment includes employers and employees in all private enterprises (*siying qiye*) in an administrative village. Private sector employment includes private enterprise employment and all self-employed individuals (*getihu*) and their employees, often family members, in an administrative village.

Lineage networks are measured by the proportion of households that belong to the top three lineage groups in the whole village. In the current sample of 366 administrative villages, on the one extreme five villages uniformly share the same surname (i.e., the whole village descends from the same ancestors) and another 10 have over 90% of the households belonging to the same lineage group; on the other extreme about a quarter of the sample villages (95 cases) do not have any lineage groups and therefore report zero on this variable. On average, 22% of the households belong to the largest lineage group and 40% belong to the top three groups.<sup>15</sup> As lineage system is patrilineal and patriarchal, it excludes marital ties of wives and daughters, which are another important source of social capital in rural China.

The following defines control variables that are relevant for rural industrialization but not key for the current analysis.

Total rural labor force is the number of all able-bodied laborers who are registered residents in the administrative villages.

Human capital stock is measured as the proportion of people with at least junior high school or equivalent education in the village labor force. On average, 22% of the village labor force had completed junior high school. Nee (1992) argues that the market transition should enhance the return to human capital in rural China. In the research based on county level data, Peng (1999) finds that human capital stock has a much stronger impact on rural industrial growth than on agricultural growth, which suggests that enhanced return to education was probably due to rural industrialization through which a large proportion of the rural population shifted off farm.

Urban distance is measured by the log distance between the village and the nearest city. Naughton (1995) observes that during the early stage of economic reform, rural reform was more successful than urban reform, resulting in the expansionary force of urban industries spilled over into the surrounding countryside. Peng (1999) finds that proximity to cities is an important explanatory factor of rural nonagricultural growth. Therefore, log distance should have a negative effect on rural entrepreneurship.

Land-labor ratio is the total amount of farmland divided by the total rural labor force. This is the inverse measure of a village's surplus labor. Entrepreneurship provides an alternative livelihood for idle farmers short on farmland. Alleviating unemployment pressure is one of the motives and effects of rural industrialization. Land-labor ratios vary greatly from village to village. In an average village, each peasant has slightly more than half an acre of farmland (one acre = six *mu*), with a minimum of one-twentieth of an acre per peasant and a maximum of nearly three acres per peasant. This variable should have a negative coefficient on rural entrepreneurial development.

Initial collective accumulation is measured as the village collective savings in 1976. As log income data approximate normality, I reassigned normal random numbers below the mean to 22 cases reporting zeros on this variable. Another 112 missing values were replaced with the sample mean. This variable should have a positive coefficient in the regression.

Southern Provinces include Guangdong, Yunnan, Fujian, Jianxi, Zhejiang, Jiangsu, Hunan, Hubei. Northern provinces include Anhui, Jilin, Liaoning, Heilongjiang, Shaaxi, Ningxia, and Xinjiang. Lineage culture is strong in south China and relatively weak in north China, due to more frequent large-scale migrations in history.

Coastal region refers to villages in coastal provinces (Guangdong, Fujian, Zhejiang, Jiangsu, Shandong, and Liaoning). Coastal provinces had an early start in economic reform and lead the country in economic growth.

### **Statistical Model**

Two indicators of rural entrepreneurial development will be analyzed: the numerical counts and employment sizes of rural enterprises. Count data are usually estimated with either a Poisson model or a negative binomial model. Poisson distribution is more restrictive than negative binomial distribution because it assumes that the variance equals the mean. As the count of rural enterprises and their total employment size in Chinese villages are highly skewed (with many zeros) and therefore may be overdispersed, I assume negative binomial distribution. Because the villages are sampled from 21 counties, standard errors are adjusted for possible clustering within counties. The negative binomial regression model is specified as

$$\ln \hat{Y} = \alpha + \beta K + \gamma X,$$

in which  $\hat{Y}$  stands for predicted counts or employment size of rural enterprises; and  $K$  for the proportion of households belonging to the largest lineage group in the village,  $X$  is a vector of controlled variables including log collective savings in 1976, log number of villagers with at least junior high schooling, log distance from the nearest city, log farmland per laborer, log current labor force size, and dummy variables for southern provinces, coastal provinces and 1993 sample. Negative binomial models are estimated in STATA 8 (both data and the Stata program codes will be available upon request).

### RESULTS

The results of regression analyses are presented in Table 2. Regressions of both enterprise counts and enterprise employment yield quite consistent results. Briefly, lineage networks in Chinese villages have large positive effects on the development of private enterprises. The following examines the findings in more detail.

Lineage networks exert very strong and consistent effects both on the count of private enterprises and on their employment sizes. Equations (1) and (3) in table 2 show that a 10% increase in the proportion of households belonging to the top three lineage groups is expected to increase the count of private entrepreneurs (not including self-employed individuals) in the village by 20% ( $\approx e^{.185} - 1$ ) and to increase their workforce size by 22% ( $\approx e^{.201} - 1$ ). To put the effects of lineage networks in perspective: the average proportion of households belonging to the top three lineage groups in the sample villages roughly doubles [ $\approx e^{0.185 \times 4} - 1$ ] the number of private entrepreneurs and increases their workforce by 220%, *ceteris paribus*. That is to say, without kinship networks, the total number of private enterprises in Chinese villages in the early 1990s would have been sliced by half.

If we take self-employed individuals into the picture (equation [2] in Table 2), the corresponding effect is smaller but still significant: a 10% increase in the proportion of households belonging to the largest lineage group is expected to increase the total employment in the private sector by 7%. Apparently, kin support is more important for owners of private enterprises (*siying qiye*) than for self-employed individuals (*getihu*). This may suggest that kin networks not only helped private entrepreneurs to start up as self-employed but also helped them greatly to grow into an “enterprise,” albeit still small in scale. Private entrepreneurs needed kin support even more as they grew beyond the scale of family operations, testing more political restrictions and attracting more cadre predation.

All control variables have correct signs even though some are insignificant. For instance, the number of people with at least a junior high school education has a large and significant effect on the count of private enterprises, in line with the common wisdom that schooling brews entrepreneurial skills. Collective enterprises do not need many people with entrepreneurial talents and therefore their success does not seem to be significantly related to the education level of villagers. Distance from cities has consistently negative coefficients for all regressions, even though not always significant.

### CONCLUSION

The above results show unequivocally that lineage networks have promoted rural entrepreneurship in Chinese villages. This evidence should conclude the long debate

between the Weberian “sib fetters” line of argument and Whyte’s engine argument regarding the relationship between kinship networks and entrepreneurial development. Lineage networks may have facilitated private entrepreneurship via three possible mechanisms: the informal enforcement of property rights (solidarity), the pooling of funds (enforceable trust), and “network resources” via external bridging ties. I proposed a normative control argument emphasizing that it is the lineage solidarity and kin trust that produced the large effects on entrepreneurship whereas the benefit of external bridging ties is probably limited, if any. During the process of partial reform, China’s property rights and market institutions are vaguely formulated and ineffectively enforced. Governmental support for private entrepreneurs was tinted with ambivalences and inconsistencies. In such historical contexts, lineage solidarity functioned to enforce informal property rights by protecting private entrepreneurs within each lineage group. Kin trust and bridging ties functioned to substitute ineffective contract laws and sluggish market mechanisms. When formal institutions are ineffective, informal substitution can be effective to a large degree.

Where had Weber erred about Chinese lineage? First of all, we should note that we are not here dealing with exactly the same question that Weber was asking. Weber was primarily concerned with the genesis of capitalism and asked: why did capitalism emerge in the Occident and did not in the Orient? The theoretical relevance of the current analysis probably should be reposed as: Can the traditional culture and social structures of China, such as Confucianism and lineage system, adapt to capitalist development? Weber himself seemed to hint an affirmative prediction to the latter question:

The Chinese in all probability would be quite capable, probably more capable than the Japanese, of assimilating capitalism which has technically and economically been fully developed in the modern culture area. It is obviously not a question of deeming the Chinese “naturally ungifted” for the demands of capitalism (1951: 248).

It would be absurd to blame Weber for having failed to ask the question of assimilation and adaptability and to reveal to the future generations what factors would deter or encourage the assimilation of capitalism. Present-day researchers (e.g., Peter Berger, Martin Whyte, and Gary Hamilton) are dialoguing with the ghost of Weber and deduce what he would say if he were alive. Weber’s analyses of the rise of capitalism are broad and have logical ramifications for questions of compatibility and adaptability. He complicated the picture by mixing functional analysis and causal argument. The factors that Weber emphasized, such as private ownership of productive assets, free labor, free market, are logical “presuppositions” of capitalism as much as its causal antecedents. Pre-existing social structures that are congruent with these logical presuppositions (or functional imperatives) should be conducive to the rise or assimilation of capitalism and those incongruent structures may pose obstacles.

Indeed, after the Industrial Revolution first happened in England, by chance or by fate, all other countries were assimilating and adapting to industrial capitalism voluntarily or involuntarily. Native cultural settings may speed up or deter the process of assimilation. Cultural ideas are inert to the extent that vested interests will try to resist change. Upon the impact of western gunship in the mid 19th century, the Qing officials and literati did tenaciously hold onto the Confucian orthodoxy that they embodied and steadfastly resisted assimilation and change—until they were swept away by the Kuomintang Nationalist Revolution in 1911. Lineage elders probably resisted changes, too, and the Socialist

Revolution deprived them of their power and prerogatives. Cultural ideas are malleable to the extent that there is affinity between the old and the new. Confucian rationalism can be reconstructed into economic rationalism and family obligations into hardworking ethics, just as Calvinist asceticism were used by the ascending bourgeois to justify the pursuit of money. Whereas Protestants seek salvation, Chinese seek glorification of their ancestors. Calvinist Puritans work hard, live frugally, and accumulate wealth in order to prove their virtues before God, lineage members were enjoined to glorify their ancestors through education and becoming an official. Now, they are encouraged to glorify their ancestor through multiplication to perpetuate the patrilineal blood line and accumulation of wealth to ensue the future prosperity of off-springs.

Secondly, the lineage networks studied here are not the same “corporate actor” that Weber observed. The Communist Revolution transformed lineage from a well-organized hierarchical social, economic and political organization into, at best, a closely knit network group with high level of solidarity and personal trust. The lineage no longer owns much economic resources (such as land or factory) to provide welfare to its member. The new lineage head, with much weakened authority and less traditionalistic orientation, is probably quite open to entrepreneurial ventures and business investment. Kin obligations are quite limited now and may at most attenuate but not stifle entrepreneurial incentives. Lineage is best described as a form of group-level social capital that useful for collective actions and normative control.

Corporate actor or collective actor, however, lineage would definitely not be on Weber’s list of cultural items favorable or adaptable to capitalism. Lineage epitomizes the cultural accent of personal (blood) ties rather than impersonal rules and formal procedures. What he perceived as favorable to capitalism in Chinese society were probably the “sober” and rational elements in Confucianism and the bureaucratic elements in the imperial state. He was obviously counting on the latter to grow strong enough to shake off patrimonial prebendalism and break the patriarchal power of the clan. Ironically, when the Communist state bureaucracy penetrated deep down into the rural society, broke the power of the clan, and achieved a high degree of fiscal centralization, it also wiped out all capitalist entrepreneurial activities. It was the revived lineage solidarity, the receding state penetration, and fiscal decentralization (tax farming) during the reform era that fostered capitalist entrepreneurship in Chinese villages. Weber was betting on the wrong horse, too. He was wrong in the sense that formalism is not as essential as he had us to believe. Centralized bureaucratic administration is not necessarily conducive to capitalism; informal and personal organizations such as the lineage are not always inimical to capitalist entrepreneurs.

What does Weber’s misinterpretation of the China case imply for his general theory of capitalism? When Weber chose China as a negative case in his comparative scheme, he was probably expecting to find high level of irrationalism, in congruence with his general thesis about the relationship between rationalization and capitalism. What he did find in Confucian ideology and the bureaucratic organization of the imperial state, however, was not so much an absence of rationalism as was a lack of formalism. This may have led him to an excessive and exclusive emphasis on formal rationality at the expense of informal norms and interpersonal relationship.

For Weber, formalism is no less important than rationalism per se because it underwrites rational calculation and calculability. Capital accounting is too sensitive to

uncertainties and unpredictability associated with personal whims and caprices. Throughout the pages of *Economy and Society*, *The Religion of China*, and *General Economic History* Weber repeatedly used the expression of “calculable law” and rational administration that “work like machine.”

Calculability is a key concept in modern economic theory as well. The question is if formal procedure and formal law are the only means to achieve “the maximum formal rationality of capital accounting.” Weber’s discussion of the appropriation of material means of production by private owners would accord well with present-day property rights theory (e.g., Demsetz 1967). As Williamson (1985) points out, human rationality is bounded due to limited cognitive ability, imperfect information, and opportunistic behaviors of self-interested individuals. Institutions function to economize on bounded rationality. Institutions refer to all man-made rules and norms, both formal and informal, that regulate human behaviors and human interactions. Institutions are important for economic performance because they structure incentives, transform uncertainties into calculable risks, and reduce transaction costs.

But contemporary institutional theorists recognize the importance of both formal institutions and informal norms. Formal institutions, such as property rights laws and contract laws, are purposively constructed and enforced by the state or formal organizations and are impersonal and universalistic. Informal institutions refer to cultural norms and customs that are supported by social networks and interpersonal ties. Coleman (1993) depicted the modernization process as a transformation from primordial social organizations based on blood and personal ties to purposively constructed organizations. But informal norms and social networks have important roles to play as well. Economists (North 1994), legal scholars (Macaulay 1963; Erikson 1991; Posner 2000), and of course sociologists are paying more and more attention to the functions and evolution of informal norms and social networks (e.g., Hechter and Opp 2001) and the interaction between the formal and informal (e.g., Nee and Ingram 1998). The advantages of formal institutions are that they can effectively handle high-volume and high-stake economic transactions and social exchanges. The downside is its high costs. Informal institutions, such as customs and norms, are supported by social networks and are therefore personal and particularistic. The advantage of informal institutions is its low costs because its enforcement is absorbed into daily lives and everyday interaction. The downside lies in its limited scope and volume, and low “calculability” (Guseva and Rona-Tas 2001). Informal networks and informal norms should be healthy to economic growth to the extent they are compatible with rationally constructed formal institutions. They are dysfunctional to the extent they conflict with and interrupt the normal operation of the rationally constructed formal institutions.

In their critique of the methodological individualism of economists, Hamilton and Biggart (1988) pointed out that social networks play an important role in the social and economic life of Asian countries. Actually social networks are important for both western and Asian economic life, as suggested by Granovetter (1985). Granovetter uses the image of social embeddedness to launch a critique on the atomistic and individualistic assumption of neoclassical economics. From Granovetter’s idea of social embeddedness to economists’ institutional environment, the consensus is that even in the western “self-regulated” market system, social relations between the rational and self-interested individuals are important and inevitable. For instance, formal organizations always are enmeshed in or countered by informal networks and cliques (Homans 1950; Dalton 1959);

a mix of arm's-length and embedded personal ties with banks and contractors enables a firm to obtain bank loan at a lower interest rate and increases its chances for survival (Uzzi 1999,1996); even competing firms brew and benefit from personal friendship ties among managers (Ingram 2001). Amidst the surging academic interests in "social capital," we hear voices hailing the coming of a network society (Castells 1996).

If we recast Weber's rationalization thesis in institutional theory, it is obvious that he focused exclusively on the rationally constructed formal institutions. He apparently posed a false dichotomy between the formal and informal, the rational and affective, just as Parsons did with the dichotomy between universalism and particularism. He had obviously overstated both upside of the formal and rational and the downside of the informal and personal. He was too optimistic about the capability of the legal-rational institutions, no matter how ingeniously designed, to reduce uncertainty and achieve calculability. Future contingencies are impossible to predict and human opportunistic behaviors hard to calculate. Furthermore, formal law and rational administration are quite costly to operate even if they are in place and effective.

Weber's pessimism about the informal, personal, and emotional is understandable because when Weber wrote *Economy and Society* and did his comparative study of non-western religions, capitalism and bourgeois were faced with old cultural legacies that were hostile to or incompatible with the newly constructed capitalist institutions. But informal norms and informal social structures (such as personal networks) evolve and adapt, even though their transformation may not always be purposively engineered. Weber's doomed vision of the inevitable entrapment of human race in the "iron cage" of formal rationality has not come true even in the western world. Bureaucratization and formalization have not crowded out the informal, personal and emotional. While our public and private lives are increasingly shaped by rationally constructed institutions (Coleman 1993), a large part of our social life remains informal and personal. As Elster (1999) and Lawler (2001) point out, in today's postindustrial age emotionality remains an important aspect of our social life, if not more so, and constitute a crucial ingredient in our rational choice of actions. So long as emotionality is a fact of life, personal relations and informal networks will stay and have a role to play.

Historically Chinese people were never used to impersonal administration and formal procedures and are much more comfortable with the personal and informal. Therefore, they may fare well with an institutional mix that tips toward the personal and informal, especially when formal institutions do not work very well yet, or are interfered and emasculated by the personal *guanxi* networks anyway.

As an ending remark, I do not intend to paint too rosy a picture of lineage networks. Cultural norms and social networks, because they are informal and personal, are more susceptible to sinister manipulation than rational designing. Old and powerful people tend to have accumulated more social capital and are more likely to support *status quo*. Thus, social networks tend to serve vested interests and *status quo*. As Coleman put it

"[Normative systems] operate more via constraints and coercion than via incentives and rewards. They are inegalitarian, giving those with most power in the community freedoms that are denied others. They discriminate, particularly against the young, enforcing norms that are in the interests of elders; they inhibit innovation and creativity; they bring a greyness to life that dampens hope and aspiration." (1993:10)

## NOTES

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<sup>1</sup> Patriarchy refers to the authority structure of the extended household or agnatic group in which the founding father wields great personal power over its members. Patriarchal domination is based “not on obedience to abstract norms, but on a strict personal loyalty” and the master’s power is only limited by tradition (Weber 1968: 1006). Patrimonialism can be understood as the extension of patriarchal authority in state affairs. The similarity is best illustrated by the analogy that a patrimonial king can execute his officials at will, just as a patriarchal father can murder his son with immunity.

<sup>2</sup> It seemed that Weber (1968) distinguished three types of state structure: feudal estates, prebendal officialdom, and legal-rational bureaucracy. Both feudalism and prebendal officialdom are patrimonial in nature, but feudal fiefs are hereditary whereas prebendal benefices are not. Weber used the term “patrimonial bureaucracy” for prebendal officialdom because it signifies a half-way house between feudalism and legal-rational bureaucracy. Patrimonial bureaucracy falls short of full bureaucratization in that the private and official spheres are not separated. On the one hand, a prebendal official receives a “salary” that is supposed to cover both his personal and official expenditures (including staff salary) but not nearly enough. On the other hand, he pays a fixed-quota tax to his emperor or superior and derives most of his private income from taxation in his jurisdiction. Obviously, prebendalism leads to what we today call “institutionalized corruption.” Chinese history evolved from feudalism of the Zhou Dynasty to patrimonial bureaucracy of the Qin Empire during the third century B.C.

<sup>3</sup> The khadi is a judge in the Moslem *sharia* court who gave out judgments in a purely arbitrary and capricious fashion. Khadi justice symbolizes Weber’s ideal type of “substantively irrational” legal system (see Marsh 2000).

<sup>4</sup> The official examination system in imperial China was a merit-based system to select officials from the most talented. In the sense that it was open to all, regardless of family class background, this is quite universalistic. Unfortunately, the content of the examination was mainly Confucian ideology and literature. Therefore, the imperial bureaucratic office was staffed by a scholar who, “but not in the least degree trained for administration; he knows no jurisprudence but is a fine writer, can make verses, knows the age-old literature of the Chinese and can interpret it” (Weber 1927: 338). Justin Lin (1995) proposed an interesting hypothesis regarding the official examination: Had its contents been on scientific subjects, such as mathematics, rather than humanistic literature, China might have been the first to industrialize.”

<sup>5</sup> Weber, too, believed that the security of property and contractual rights is crucial for capitalism. He described its ambiguity: “In China it may happen that a man who has sold a house to another may later come to him and ask to be taken in because in the meantime he has been impoverished. If the purchaser refuses to heed the ancient Chinese command to help a brother, the spirits will be disturbed; hence the impoverished seller comes into the house as a renter who pays no rent. Capitalism cannot operate on the basis of a law so constituted. What it requires is law which can be counted upon, like a machine; ritualistic-religious and magical consideration must be excluded” (Weber 1981: 342-343).

<sup>6</sup> Collins (1980) interprets “ethical dualism” in the following paragraph: “In virtually all premodern societies there are two sharply divergent sets of ethical beliefs and practices. Within a social group, economic transactions are strictly controlled by rules of fairness,

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status, and tradition. . . . The prohibition on usury reflected this internal ethic, requiring an ethic of charity and the avoidance of calculation of gain from loans within the community. . . . In regard to outsiders, however, economic ethics were at the opposite extreme: cheating, price gouging, and loans at exorbitant interest were the rule. Both forms of ethic were obstacle to rational, large-scale capitalism: the internal ethic because it prevented the commercialization of economic life, the external ethic because it made trading relations too episodic and distrustful. The lifting of this barrier and the overcoming of this ethical dualism were crucial for the development of any extensive capitalism” (p. 931).

<sup>7</sup> This argument is actually not that old and echoed in a recent book titled *Trust* by Fukuyama (1995), which portrays China as a low-trust society. In a low-trust society, transaction costs are very high in such societies because trust and loyalty are limited to a small circle of family members, relatives, and friends and impersonal and “generalized trust” could not develop.

<sup>8</sup> Freedman (1958) argued that because the clan tended to rent its communal land its members on preferential terms, clan members tended to stay in the village rather than trying their luck elsewhere.

<sup>9</sup> The concepts of bounded solidarity and enforceable trust are borrowed from studies of immigrant ethnic entrepreneurship (Portes and Zhou 1992). Lineage groups share certain similarities with immigrant ethnic groups. Both are normative communities.

<sup>10</sup> The 22 counties are Zhangwu, Haicheng (Liaoning); Huichun (Jilin); Anda (Heilongjiang); Zhangjiagang (Jiangsu); Tianchang (Anhui); Tongxiang (Zhejiang); Xingguo, Gaoan, Xunwu (Jiangxi); Sangzhi, Yizhang (Hunan); Yichang (Hubei); Xinhui, Xingnin, Meixian (Guangdong); Xichang (Sichuan); Lunan (Yunnan); Tongguan (Shaanxi); Wuzhong, Guyuan (Ningxia); and Huocheng (Xinjiang).

<sup>11</sup> I excluded the 1991 sample of the same survey because it did not distinguish the ownership types of rural enterprises.

<sup>12</sup> Four villages reported one or two firms that were wholly or partially funded by overseas investment (*sanzi qiye*). I did not count these firms as rural enterprises.

<sup>13</sup> There are two cases in which the number of private enterprises is larger than 100, and 10 cases in which the number of private enterprise managers is larger than 200. As these outliers do not overlap, I recalibrated them according to regressions of each variable on the other. As a result, the largest count of private enterprises is now 96, which is credible.

<sup>14</sup> These measures are taken from questions regarding the occupational classification of the village labor force and are separate from questions about the number of private entrepreneurs in the village. Thus, there are some minor discrepancies in measurement. For instance, the workforce of collective enterprises may include some commuters who work in township-owned enterprises. Such discrepancies serve as a good robustness check of the regression results against measurement errors.

<sup>15</sup> It is rare for a single lineage group to dominate a whole administrative village. During a field trip to Jiangxi, I found that administrative villages often consist of 2, 3, 4 lineage groups, each dominating one or two natural villages. Freedman (1958) reported the same observation.

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Table 1: Descriptive Statistics of Chinese Villages (1993/1994; N=366 villages)

	minimum	1st quartile	median	Mean	3 <sup>rd</sup> quartile	Maximum
Population	194	1098	1587	1844	2405	9663
Number of households	53	254	388	439	565	1650
Number of private enterprises	0	0	0	3.4	1	96
Workforce of private enterprises	0	5	16	45	48	1178
% the largest lineage group	0	0	14.9	21.8	29.3	100
% top three lineage groups	0	0	37.2	39.9	64.4	100
% finished junior high school	2.2	13.3	20.4	22.2	28.3	86.6
Farmland per laborer (mu)	0.3	1.5	2.2	3.5	4.1	19.3
Collective savings 1976 (yuan)	0	4915	6003	24550	19540	686900

Table 2\_Negative binomial regression of enterprise count and employment in Chinese villages (1993/1994, N=366 villages)

	Count of entrepreneurs (1)	Workforce in private sector (including <i>getihu</i> ) (2)	Workforce in private enterprises (3)
(Intercept)	-13.33*** (7.09) <sup>†</sup>	-4.485*** (4.04)	-11.16*** (5.39)
% top three lineage group (×10)	0.185** (3.69)	0.068** (2.84)	0.201*** (4.41)
Log % junior high or above schooling	0.815* (2.34)	0.395*** (3.49)	1.085*** (3.91)
Log distance from city	-0.115 (0.94)	-0.095 (1.10)	-0.105 (0.85)
Log collective savings 1976	0.399** (3.15)	0.044 (0.62)	0.121 (0.84)
Log land-labor ratio	-0.204 (0.86)	-0.191 (1.39)	-0.159 (0.68)
Log total village labor force	0.903*** (4.80)	0.993*** (8.76)	1.334*** (5.69)
Southern provinces	0.678 (1.55)	-0.572** (3.17)	-1.001*** (3.61)
Coastal provinces	0.003 (0.01)	0.706** (3.34)	0.565 (1.13)
1993 Sample	1.027** (2.51)	-0.195 (1.15)	-0.423 (1.21)
Wald log pseudo-likelihood ratio $\chi^2$	118.31	150.76	176.25
Degrees of freedom	9	9	9

Notes: <sup>†</sup> figures in parentheses are the absolute values of z-ratios; \*, \*\*, and \*\*\* indicate significance at p<0.05, 0.01, and 0.001, two-tailed.

Figure 1\_\_ Growth of Rural Enterprises by Ownership between 1984-2000.\*

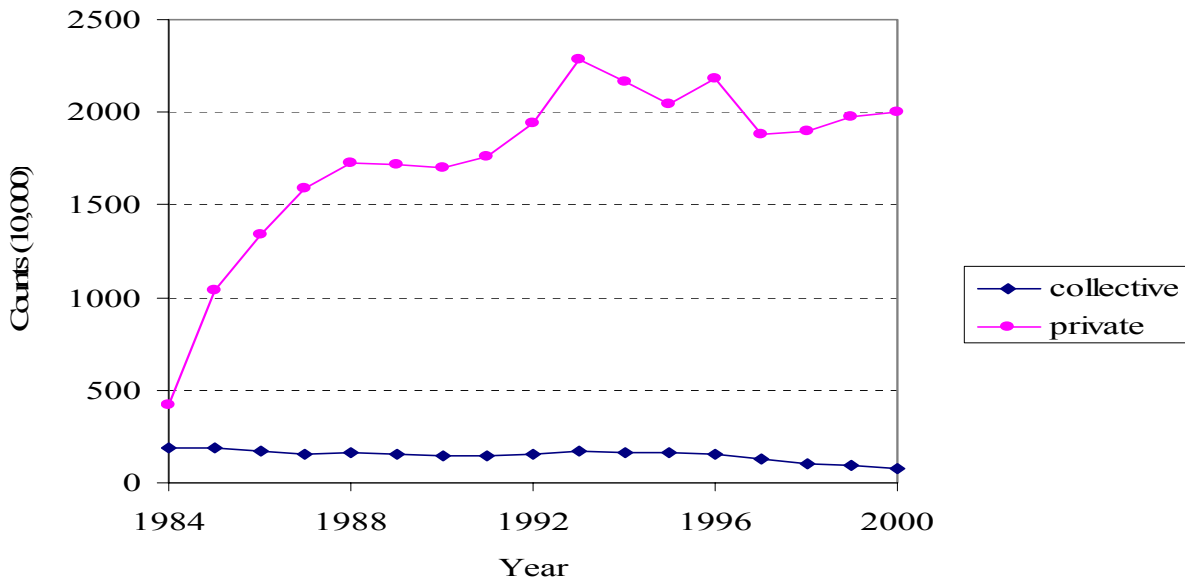


Fig. a\_Count of rural enterprises by ownership

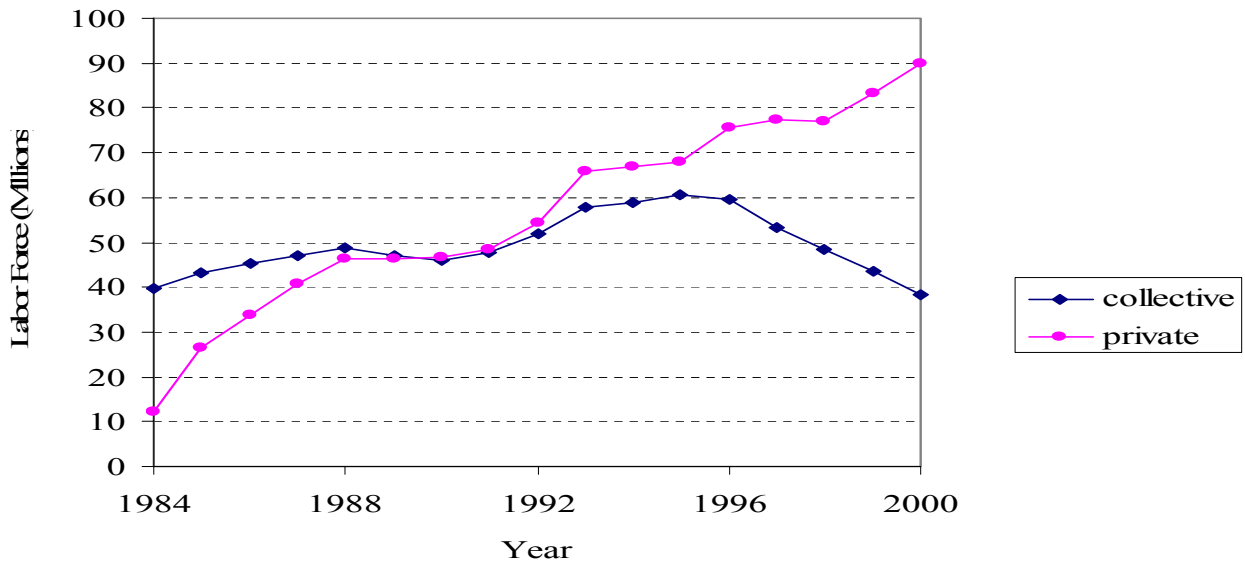


Fig. b\_Rural enterprise employment by ownership

\* Data from various years of *The Statistical Yearbook of Township and Village Enterprises* (China Ministry of Agriculture 1997— 2001). Note that the 1994 count and employment data for private enterprises are the averages of 1993 and 1995 data because the original data are obviously wrong.