

## **Self Employment in Rural China**

*A Paper for “China’s Industrial Structure and Economic Growth: A Historical Perspective” Hitotsubashi University, Center for Economic Institutions*

Scott Rozelle  
Helen Farnsworth Endowed Professorship  
Freeman Spogli Institute for International Studies  
Stanford University

September 2, 2007

## Self Employment in Rural China

Since China initiated its economic reforms in the late 1970s, off-farm employment in rural areas has grown rapidly (de Brauw et al., 2002). The expansion of off-farm employment has increased rural welfare by raising incomes and productivity (Parish, et al., 1996; Rozelle, 1996). For rural China to be transformed successfully from an agricultural economy to an industrial one, however, an economy needs more than an emerging off farm sector; it also must rely on strong and sustained investment and entrepreneurship. One of the key tenets of economic development is the profound restructuring that occurs through those that innovate, bringing capital and new ideas together (Schumpeter, 1936).

Given the importance of the entrepreneurial sector, it is somewhat surprising that relatively little attention has been directed at the rise of the self-employment sector in rural China.<sup>1</sup> In fact, the sector was the fastest growing part of the off-farm employment sector between 1988 and 1995 (Rozelle et al., 1999). The number of self-employed people in rural China increased from 25 to 52 million, representing almost 40 percent of all new off-farm jobs created during that period. After 1995 the self-employment sector continued growing at a high rate, although its growth slowed somewhat relative to migration. In other countries with a much smaller self-employed sector—for example, the United States and Great Britain—there has been much more extensive coverage of self-employment (Evans and Leighton, 1989; Evans and Jovanovic, 1989; Blanchflower and Oswald, 1998).

In another sense, however, the lack of attention might be understandable. In other developing countries self-employment is not always looked upon as a leading sector of the economy. In fact, some researchers believe that self-employment is primarily a refuge for people that are excluded from formal labor markets (Gong et al., 2000; Tokman, 1992). Skeptics frequently raise questions such as how much a person standing at a street corner selling toilet-paper or cigarettes can contribute to economic growth. If most of the self-employment in an economy is of this type, it is easy to see how it could be seen as a sign of a deteriorating economy rather than as a growth pole. Hence, despite the dramatic rise in the number of self-employed, the absence of attention in the China literature may reflect the same ambivalence.

Recent findings, however, provides strong evidence that shows China's self-employment sector is not a refuge of the rejected and laid off, but rather is becoming increasingly sophisticated and entrepreneurial. By decomposing the growth in self-employment by occupation and by factor intensity, Mohapatra (2004) shows that rural China's self-employment sector is becoming more capital intensive and participating in ever more complex economic activities. Indeed, based on this evidence, the work concludes that self-employment in rural China should be considered a source of growth of rural China and should not be considered a sign of economic distress.

Although some of the recent research on self-employment is convincing, there is little in depth work trying to understand how entrepreneurs start their enterprises and operate them. If self-employment is growing so fast and becoming more complex, scholars will want to better understand the sector and policymakers need to understand the dynamics of the sector so they can formulate policies to promote the sector's growth. Hence, both economists and policy makers would like to be able to answer a number of outstanding questions. How do individuals start up their enterprises? How are the operations of the firms organized? What is the nature of the business environment within which they operate? How well do firms perform in terms of the standard measures from their income statements and balance sheets? Answers to these questions, taken together, will help address another more fundamental question: are these firms appearing in the rapidly growing, dynamic regions and sectors of China or in the more backward ones and are they worth supporting? In our review of the literature, there has been little if any effort to systematically answer these questions. The overall goal of our paper is to answer some of these

questions by painting a picture of self-employment in rural China, centering our attention on analyzing a rich set of primary data.

## **Data**

The data set was collected from a randomly selected, almost nationally representative sample of 60 villages in 6 provinces of rural China (henceforth, called the China National Rural Survey or CNRS). To reflect accurately varying income distributions within each province, one county was selected randomly from within each income quintile for the province, as measured by the gross value of industrial output. Two villages were selected randomly within each county. The survey teams used village rosters and their own counts to choose randomly twenty households, including both those with their residency permits (*hukou*) in the village and those without. A total of 1,199 households were surveyed.

The survey form was designed to collect data on all aspects of the income earning activities of rural households as well as the determinants of the income sources. The CNRS project team also gathered detailed information on household demographics, wealth, agricultural production and investment. The form includes a detailed section on labor allocation, which records the number of hours and other information about all of the wage earning and non-wage earning jobs that each individual in the household performed during 2000.

One major block of the survey, consisting of three sub sections, was designed to learn about self-employment in rural China. The first subsection asks the household for detailed information on firm start-up. In particular, this subsection gathers information on what type of business the household was engaged in, the amount of the initial investment, the sources of the initial investment funds, the relationship with the village and its leaders and the formal ownership structure of the self-employed enterprises at the time of the firm starting up.

The second part asks firms about the way they organize their operations. Specifically, this part of the survey form solicits information on who within the family operates the firm and collects information that can be used to describe the firm's utilization of labor, especially its use of family and hired labor. Finally, we also are provided information on the use of capital, its growth rate over time and level of capitalization.

The final part of the self-employment block gathers information about the firm's financial performance. Enumerators recorded information on all of the firm's revenues and expenses. We use a cash accounting basis to calculate net income. The survey form also records detailed information on all assets and liabilities, including capital equipment, investment in buildings and land, inventories, accounts receivable, accounts payable and other debts owed by the firm to banks and private individuals.

## **Getting Started**

One of the most difficult parts of the process facing individuals or groups of individuals that engage in business is the start-up process. During the process, the entrepreneur needs to make many decisions, such as, the type of business to start up, the ownership structure and the level of initial investment. Using our data on the history of 473 firms, this section centers on understanding how firms launch their businesses. To do so, we first describe the occupation diversification in rural China and show the occupations from which the self-employed came. Next, we examine how people start up self-employed enterprises, especially focusing on the ownership structure of the firm, who it was that initially launched the firm and the size and sources of the initial investment. Finally, we examine the role of the collective in the start up of the firm.

### **Occupation Diversification and Transition into Self-Employment**

Before the economic reforms in the late 1970s, almost all of the people in rural China were exclusively engaged in farming, but policies since then have allowed people to shift out of

the sector. A number of policies, especially the household registration system (or *hukou* system) initiated in 1955, tied rural people to rural areas. Even after de-collectivization in the late 1970s, however, almost every household was engaged in farming. Land was distributed to each household and, with poorly developed commodity, credit and insurance markets, almost all households depended heavily on farming. As the economic reforms unfolded in the 1980s and 1990s, however, leaders relaxed the constraints on the movement of rural labor into the off-farm sector in order to provide labor for the emerging manufacturing and service sectors. Leaders also allowed farmers to pursue non-agricultural activities. By the late-1980s and early 1990s, the passive nature of policy became proactive and leaders began actively promoting an economy that encouraged rural individuals to work for a wage off the farm or to start their own businesses.

With relaxation of the restriction on labor movements, the transition into off-farm occupations has steadily made progress. The labor force participating in off-farm occupations grew from about 15 percent of the total rural labor force in 1981 to about 43 percent in 2000 (de Brauw, et. al., 2002). Specifically, the labor force participating in wage earning occupations increased from 11 percent to about 27 percent; off-farm self-employed people increased up to 16 percent.

Despite the shift into off farm work, according to our data, households in China are still heavily involved in farming (Table 1). Although about 79 percent of rural households pursue off-farm occupations, most of them (94 percent) still participate in farming (row 2 ). In particular, of the households that run self-employed businesses, 90 percent are still involved in farming; of the households pursuing wage earning occupations, 96 percent are still involved in farming (column 3).

While the occupational patterns of individuals are less tied to farming than households, most individuals also are still engaged in farming (Table 2). According to our data, 19 percent of individuals in China were working as entrepreneurs in the self-employed sector. However, only a small minority (5 percent) were doing so full time (row 3). In addition, there were some that worked an off farm job and were engaged in self-employment. However, despite the fact that a few focus solely on their self-employed businesses, most are still in farming at the same time. Of all of the individuals that are self-employed, 74 percent are also in farming or are engaged in farming and work for a wage (Figure 1).

The emergence of the self-employed, while beginning during the early 1980s, did not really take off until the late 1980s (Figure 2). Before 1989, the entry rate into the self-employed sector is not systematically higher than the exit rate, indicating that during this period the number in the self-employment sector did not increase much, if at all. After 1989, the entry rate became systematically higher than the exit rate, and self-employment began increasing. .

The diversified set of occupations for households and individuals mostly reflects the fact that the move into the self-employed sector has come relatively recently and that today's entrepreneurs actually started in other sectors (Table 3). For example, about 19 percent of the self-employed in China had worked in off farm labor as a wage earning worker before becoming self-employed (row 2). On average, these workers-turned-entrepreneurs had worked for an average of 8 years before starting their enterprise. About 50 percent of the currently self-employed people had farmed before switching to self-employment (row 1). Only about 31 percent chose self-employment when they initially entered the labor market (row 3).

#### **The Actors and Sources of the Funds**

Despite the diverse occupation background of individuals before they shifted into self-employment, when individuals launch new firms there are well-established patterns of business operation. Most of the self-employed choose to run their own firms by themselves and do not enter into partnerships (Table 4). Indeed, only 7 percent of self-employed enterprises began as partnerships (column 2). Instead, an overwhelming majority (93 percent) of rural self-employed firms are initiated as sole proprietorships.

Those that start up enterprises also share a number of general characteristics, especially when compared with those engaged primarily in wage earning and farming (Table 5). On one hand, the self-employed are more likely to be married and they are older; their marriage status and age is closer to that of farming than wage workers. However, in terms of gender (being male), education level and access to special training, the self-employed are more like wage earners than farmers. The profile of the self-employed, interestingly, is consistent with the finding of Parish, et al (1995) and de Brauw, et., al (2002), two papers that also are trying to characterize the off farm sector using econometric analysis.

Although China's self-employed have a distinct set of characteristics across the nation, they appear to differ fundamentally from the self-employed in other developing countries. For example, in rural Honduras most of the self-employed are young women, in many cases with low levels of education (Ruben, et al., 2001). In Africa the majority of micro-enterprises also are owned and operated by women (Mead et al., 1998). Grosh et al. (1996) find that rural micro-enterprise owners in Botswana typically have low levels of education; almost all of them have only achieved a primary education if at all. China's self-employed also appear to differ from the self-employed in other countries in the amount of experience that they have had prior to starting up their business. In rural Indonesia, around 50 percent of the self-employed in a study of the cotton industry are female and are limited to young mothers, widows, and the elderly, categories of individuals that probably mean they had little experience in the work force before they began to be self-employed (Weijland, 1999; Chernichovski, 1984). Clearly when compared to the self-employed in other developing nations, there appears to be a new class of "Self-Employed with Chinese Characteristics."

Perhaps because of the dominance of the sole proprietorship structure, and given that those in rural China are still relatively poor with poorly developed capital markets, rural firms in China start off as extremely small and relatively undercapitalized firms (Table 6). More than 70 percent of firms have an initial investment of less than 5,000 yuan (about US \$610 dollars at official exchange rates) which amounts to only about 40 percent of the household's annual income (row 2). In contrast, only about 9 percent of the self-employed enterprises invest more than 30,000 yuan (row 4). In fact, such a low level of capitalization is not surprising in an economy with such labor intensive enterprises. For example, the average farm in China only has about 1,274 yuan of equipment (de Brauw, 2002). Clearly, the low level of capitalization in the self-employed sector is consistent with a farming sector (the other self-employed sector) that also depends on few capital assets.

The size of the initial investment also undoubtedly affects the way that most entrepreneurs raise their initial funding (Table 6). Most of the self-employed (64 percent) are completely self-financed, using only their household's own funds (row 1). Even for the 35 percent of the self-employed that rely on borrowed funds, in most cases these funds are supplemental in nature. For the self-employed firms launched in 2000, about 81 percent of the initial start up funds come from the family. Consistent with the underdevelopment of credit markets in rural China (Watson and Cheng, 2003), only a small proportion of the self-employed (26 percent) obtain any funds from banks. For firms launched in 2000 we find only about 7 percent of the start up funds come from banks.

While funding from formal and informal sources of credit is low, given the prevalence of the underdevelopment of credit markets in the developing world, the reliance of self-employed enterprises in other developing countries on bank credit appears to be even lower. For example, in Kenya 78 percent of the firms are financed by personal savings while only 2 percent are from banks (Fafchamps, et al., 1994 and 1995). Similarly, in Zimbabwe 90 percent of the firms are financed by personal savings while only 3 percent are from banks. In Honduras start-up funds for self-employed enterprises also rarely came from formal credit sources (Ruben, et al., 2001).

### **The Role of Collectives**

One of the most interesting findings from this study of China, a communist country with a history of heavy government involvement with economic activities, is the almost complete absence of the local state in the start up of self-employed firms. Independence from the state is a characteristic that makes these firms strikingly different than rural firms that arose in the 1980s and early 1990s. During the 1980s the relationship between rural firms and the local state was one of close, interlinked ties (Whiting, 2001). Most firms, Township and Village Enterprises (TVEs), were owned by the township or village government (Oi, 1999). When private firms did emerge they typically were highly reliant on the collective. Due to the lack of institutionalized property rights and the exclusion of private firms from the state's planned distribution channels, private firms needed the local state's protection and help to access input and output markets. Hence, during the 1980s, most firms were at least somewhat tied to the local state.

Self-employed firms, in contrast, have almost no relationship with the collective when they launch their business (Table 7). In our survey we asked the entrepreneur about a number of different ways that the collective could have provided aid to the firm. Did the village provide land and/or buildings? Were the village leaders co-investors? Does the self-employed firm have a contracting relationship with the local TVE? Despite the long list of questions, 92 percent of self-employed enterprises stated that they were not related to the collective in any way (row 1).

In summary, our data show that there is a standard way that the self-employed initiate their businesses in rural China. Most firms are started by individuals as sole proprietorships and only a small number of the self-employed are engaged in partnerships. Most of the self-employed people are males and married; compared to farming people, they are more highly educated. They initially invest little capital; most of the start-up funds come from the family itself while formal credit markets play only a limited role in financing the start-up. Few have any ties with the local state.

### **Nature of the Organization of Self-Employed Enterprises**

Once businesses have started up, the self-employed pursue a diverse set of businesses (Figure 3). About 25 percent of the firms in our sample are engaged in wholesaling, retailing and trading activities. These trading firms handle a wide variety of commodities, including household goods, food items, construction material and electrical equipment. Some firms are simple—the corner Mom and Pop stores that are run out of the first floor of the owner's home and commodity traders that buy up the output of other farmers in the village and surrounding villages during the harvest season, reselling them in the local seasonal market. Others are complex—such as one household that owned several canal- and river-going barges and bought, sold and delivered bricks and roofing tile all over the Yangtze River Delta. Moreover, perhaps reflecting the fact that China's service sector is underdeveloped in general (World Bank, 2002), 21 percent of self-employed individuals are running businesses that provide a wide variety of services, such as, barber shops, tailor shops and photo finishing. In the beginning most of the service firms operated in the household's own village; increasingly it is observed (and our data concur) that households are moving to the cities to operate their service-oriented firms (de Brauw, 2002). Finally, as might be expected in the rural sector, a significant proportion (14 percent) is engaged in a farming-related business.

In some sense, the participation of rural households in trade and service provision is similar to the rest of the world. Unlike households in most other nations, however, the rural self-employed in China are involved in a number of less traditional sectors. About 15 percent of the self-employed run transport and communication businesses and 14 percent run manufacturing and construction firms. In some villages, there are even some individuals that run businesses that require fairly high levels of professional expertise, for example, health care providers, banking and technological services. For example, there are 12 households in our sample that are engaged

in health care services or have set up clinics in a village. Of these, five households have invested more than 2000 yuan, implying they might have invested in a building and medical equipment.

### **Firm Structure, Family Roles and Hired-Labor**

In the same way that most self-employed firms began their business activity with the effort of a single member of the family, the ownership structure of the self-employed enterprises in our sample demonstrates a pattern of organization that mostly relies on a single individual. Interestingly, this approach is different from the pattern described by Unger (2002). In his book, Unger observed in Xiqiao, a prosperous township in Guangdong province, that almost all of the self-employed had initially formed partnerships with relatives, friends or neighbors in order to amass sufficient capital and diversify their risk. Unger observed, however, that once the enterprise grew to a certain size, the partnerships usually splintered into small individually-run family firms. In contrast, a large majority of the enterprises in our sample chose to begin their firms as sole proprietorships and most continued to operate over the life of the firm without changing ownership structure (Table 4). According to our data, about 92.8 percent of the firms were sole proprietorship when they started up (column 2). By 2000, the percentage being operated as sole proprietorships is almost unchanged (93.5 percent--column 4). It is unclear why the households in our sample differ from those in Unger's study. Given that more than 70 percent of the enterprises had an initial investment less than 5,000 yuan, it seems plausible that most firms in our sample did not face capital constraints as did those in the Unger sample that was drawn from the local Textile Chamber of Commerce and were trying to run larger manufacturing firms.

Although self-employed enterprises, by definition, are family-based there are many possible combinations of roles different family members could take on. There are fairly strong patterns in rural China (Table 8). More than half of China's self-employed firms (53 percent) are operated solely by the male, household head (row 1). In these households, although the other family members do not directly participate, they do so indirectly by shouldering more of the work on the farm. In about 52 percent of the households with husband-only firms, the head's spouse takes over most of the work on the farm with other family members while in only 38 percent of the households with no off-farm occupations, the wife is the primary on-farm worker.

There are other forms than husband-only firms. About 25 percent of the enterprises are operated as intra-family partnerships—mostly jointly run by husband and wife (row 3). Although our data do not include information on the precise roles of husbands and wives in these jointly-run enterprises, Unger (2002) observes that in Xiqiao, wives often oversee production of family firms while their husbands take care of sales. If so, these firms would be similar to those found in Taiwan, where there is a fairly well-defined division of labor with the wife overseeing production and the husband doing sales (Greenhalgh, 1988). Interestingly, for the firms where husbands and wives share responsibilities, the husband, on average, takes on a statistically greater share of the farm work (53 percent) than that for the husband-only firms (46 percent).

Given the small size of the initial investment, it is not surprising that the number of workers in most of the self-employed enterprises (including the proprietor) also is small (Table 9). According to our data, the average number of workers per enterprise in our sample is only 2.3, although there is considerable variation among firms. For example, our data show that about 60 percent of the enterprises are operated by only one person, the proprietor, working on his or her own (row 1). In contrast, there are a few enterprises utilizing a large number of workers; four enterprises in our sample use more than 40 workers.

Since firms generally are small with only limited employment, most of the firm's labor force comes from the family rather than labor markets (Table 10). About 94 percent of workers in all of the sample enterprises are members of the entrepreneur's immediate family (row 1 and column 2). Of the family members, only 1 percent of them were reported to have drawn a wage. In contrast, 6 percent of the workers were non-family members that were all hired for a wage (row 1 and column 4).

Like other characteristics of the sample firms, the scale of the enterprise affects hiring decisions. As the size of the firm increases, so does its use of paid labor. For example, the enterprises with the fixed assets between 60,000 and 70,000 yuan, on average, hire 43 percent of their labor force while 57 percent come from the family (row 9). Only 28 firms of the 393 firms that have below 10,000 yuan of fixed assets hire workers for a wage.

While the average self-employed enterprise is small, in the aggregate they contribute a significant amount to national employment. In 2000 rural China had 499 million people in the rural labor force (China Statistical Yearbook, 2001). Our data show about 15 percent of the rural labor force is self-employed. If our sample is representative and we can use our sample to estimate employment across the nation, we estimate almost 80 million people are involved in self-employed enterprises in 2000. Under these assumptions, given the 712 million people in China's overall labor force (China Statistical Yearbook, 2001), this means about 11 percent of national employment is created by the rural self-employed.

### **Capital Growth and Investment**

Given the shortage of capital in rural China most of self-employed enterprises use only relatively small amounts of capital although there are exceptions (Table 11). On average, China's self-employed enterprises only own about 36,000 yuan of fixed assets, meaning that firms are quite small, and much lower than the fixed assets of the average TVE (Oi, 1999--row 2). The average capitalization of a TVE in 1995 was 607,000 yuan. Moreover, not only is the average level of fixed assets relatively small, their distribution across enterprises is skewed. Of all enterprises in our sample, 50 percent have fixed assets of less than 4,400 yuan; 80 percent have fixed assets of less than 20,000 yuan. Despite this, there are a few enterprises with fixed assets more than 50,000 yuan (11 percent). The largest enterprise in our sample, a manufacturing firm that hires more than 40 people, has assets of more than 1.8 million yuan.

Although self-employed enterprises are small, they have been growing moderately fast in terms of their rate of capital accumulation (Table 12). Our data show that the fixed asset holdings of rural self-employed firms on average increased about 15 percent per year (row 1). If conditioned on the enterprises that made at least one additional investment in their firm's fixed asset base after their initial start-up investment, the annual rate of increase is about 34 percent. Perhaps because of the limited ability of the self-employed firms to raise funds and lack of help from the state in facilitating access to formal financial markets, the growth rate of capital in self-employed firms, although fast, is lower than that of TVEs (which was 27 percent over the period from 1985 to 1995, Oi, 1999).<sup>2</sup>

With lower levels of assets, the accumulation of debt in China's self-employed firms generally is relatively small. In China, in general, firms have built up huge debt relative to their equity. For example, in 1998 the average debt-equity ratios for the state-owned enterprises and the collective enterprises were 320 percent and 199 percent, respectively (Naughton and Yang, 2004). In contrast, debt is not an important part of the way that assets are financed for self-employed firms and most have low liability (Table 14). About 83 percent of enterprises have liability less than 5,000 yuan (row 3 and column 1). Despite this, only 49 percent of enterprises have total assets of less than 5,000 yuan (row 1 and column 4).

The joint distribution of asset and liability indicates that overall the enterprises are financially healthy. Liabilities are only 12 percent of total assets, which shows the low degree to which enterprise assets are financed through debt. Perhaps this is because the self-employed enterprises are rationed out of the formal credit markets and/or due to the nature of small initial investments required for labor-intensive, self-employed enterprises. It is possible that both forces are at work. This pattern is the case outside of China, and in this way shows China is not unique. Fafchamps et al., (1994 and 1995) show in Kenya and Zimbabwe that a considerable percentage of enterprises are rationed out of credit markets; while at the same time a nontrivial percentage of enterprises say that they do not need a loan from banks.



## **The Business Environment**

If self-employed enterprises significantly contribute to poverty alleviation and economic growth, then it is important to know what part of the business environment is conducive to enterprises. Several attributes of the business environment have been shown to be important to entrepreneurial activities. For example, communication infrastructure can expand the range of knowledge of technology and market information that can help an entrepreneur learn and promote entrepreneurial activities (Schmitz, 1989). The sites of businesses that are close to cities and have access to convenient transportation services are also conducive to business growth because they can lead to lower transaction costs and make it easier for entrepreneurs to gain access to markets (Perkins, 2003). An environment with weak credit markets limits the financing ability and thus constrains people from entrepreneurial activities (Eswaran and Kotwal, 1986).

Our data<sup>3</sup> show that, like other countries, these attributes are important in rural China. Households that are living in villages close to the township seat, are well-off and have good communication facilities are more likely to have more firms in the self-employment sector (Table 15). For example, 40 percent of surveyed households that lived in villages close to the township seat participated in the self-employment sector while it was only 26 percent for other villages (row 1 and 2 and column 1). Moreover, households in the rich villages are more likely to participate in the self-employment sector than those in the poor villages (row 7 and 8 and column 1). If the level of previous income is a good approximation of the degree of financial constraint, it may be that financial constraints are an obstacle to entrepreneurship in rural China. Similar to rural China, financial constraint also impedes entrepreneurship in other countries (Paulson and Townsend, 2001; Holtz-Eakin, Joulfaian and Rosen, 1994; Blanchflower and Oswald, 1998; Dunn and Holtz-Eakin, 2000 and Burke, FitzRoy and Nolan, 2000). Villages with better communication facilities are associated with a higher proportion of self-employed households (Table 15).

## **Performance of Self-Employed Firms**

Understanding the performance of self-employed firms will help establish the nature of the self-employment sector. To do so, we focus on two important aspects of financial performance, profitability of the self-employed and financial risk of the enterprises run by them. We first examine their profitability, assessing the performance of self-employed firms by comparing self-employment earnings with wage earnings. We also compare self-employed return on assets to those of state-owned enterprises (SOEs) and township and village enterprises (TVEs). Finally, we examine the financial risk of the self-employed enterprises, by making comparisons with those of SOEs and TVEs, and the heterogeneity of the financial performance within the self-employment sector.

### **Profitability**

Compared to workers with wage earning jobs, those that are self-employed in rural China earn more on an hourly basis but also assume higher risks (Table 16). The self-employed in rural China on average earn about 7.8 yuan per hour in 2000 while wage earners only earn about 2 yuan per hour (column 1). Despite the higher earnings, however, the standard deviation of the earnings of the self-employed is nine times as high as that of wage earners (column 3).

The relatively high earnings of self-employment could be due to several reasons. Since many self-employment activities are riskier than wage earning occupations, part of the self-employment earnings could be thought of as a risk premium. Alternatively, self-employment often requires the use of capital. We have seen that credit is limited. Hence, it is possible that the capital requirement of starting a firm could be imposing a barrier to entry, preventing people from entering the self-employed sector and keeping self-employment earnings at a level higher than

wages. Finally, it could be that self-employment earnings contain a return to entrepreneurial ability, a scarce input and one that is not required for wage earning occupations.

Although self-employment earnings in rural China are higher than employment earnings, this relationship is not typical of many countries. For example, in Kenya only about one quarter of the self-employed enterprises make above the minimum wage of the modern sector while only 10 percent earn more than the average wage, indicating that in many cases self-employment is not sufficient by itself to move a household out of poverty (Daniels, 1999 and Daniels and Mead, 1998). In the United States wage jobs have both higher initial earnings and growth of earnings is greater than that of the self-employed (Hamilton, 2000).

Self-employment earnings are higher than wage earnings in China and are higher than the wage that the self-employed could have earned if he/she had chosen to be a wage earner (Table 17). To show this we need to first account for the difference between the characteristics of the self-employed and wage earners. A standard way to show this is to use a wage equation estimated from the same sample, and then create a predicted wage for the self-employed, by forecasting the wage, given the characteristics of the self-employed. Based on the selection and wage equations estimated by using our data set (and reported in de Brauw, 2002), we can show that if the self-employed were wage earners, the self-employed on average would have earned 2.7 yuan per hour, which is higher than the earnings of wage earners but substantially lower than the self-employment earnings even after we remove the capital income part<sup>4</sup> from the self-employment earnings (row 1). These findings could indicate two things. First, self-employed are more able in labor markets and earn more. Second, even with the high ability they are more likely to voluntarily choose to be in the sector rather than being forced into the sector.

Not only do the self-employed earn more than the wage earners, the enterprises run by them also have higher return on assets than other types of enterprises such as SOEs and TVEs (Table 18). Return on assets, which is calculated as net profits divided by total assets, is one of the key ratios used to measure the profitability of firms. However, there is one problem with calculating the ratio for the self-employed enterprises. The profit for the enterprises includes a labor component since most of the self-employed also are functioning as unpaid workers in the enterprises. In calculating the return on asset ratio, then, we remove the labor component from the profit by subtracting the predicted wage for the self-employed from the profit. Even after doing this, the ratio of return on assets for self-employed enterprises is 0.98, meaning that given one dollar of an asset the self-employed firm will on average generate 0.98 dollar of profits (row 1 and column 1). The ratio is much higher than those of SOEs and TVEs (0.03 and 0.07, respectively--row 2 and 3 and column 1), indicating that assets of self-employed enterprises have returned well according to this measure.

Compared to SOEs and TVEs, self-employed enterprises also can be said to be financially much less risky.<sup>5</sup> The debt to asset ratio for the self-employed enterprises is 0.21, meaning that, on average, 21 percent of the total assets of the self-employed enterprise is financed through debt (Table 18 row 1 and column 2). However, the debt-to-asset ratios for SOEs and TVEs are three times as high (row 2 and 3 and column 2), because SOEs and TVEs have been heavily reliant on bank loans to fund their investments. Given the low profitability of SOEs and TVEs, it is possible that they may not always be able to repay debts, including interest payments and principal. Hence, from a financial analyst's point of view, SOEs and TVEs are more risky, financially.

### **The Heterogeneity of Financial Performance**

While the average self-employed enterprise is more profitable but less financially risky than SOEs and TVEs, their financial performance varies considerably. For example, according to our data, the highest hourly earnings of the self-employed are about 500 yuan per hour (about 65 dollars per hour) while the lowest earnings are negative (-40.5 yuan). In addition, most of the self-employed enterprises have zero debt while several enterprises have a debt-to-asset ratio higher than 0.80.

Despite the variations, clear patterns of financial performance exist in the self-employment sector. The self-employed with a higher level of total assets have higher hourly earnings (Table 19). For example, the self-employed with asset holdings in the bottom 10 percent of asset distribution only earn 3.9 yuan per hour. In contrast, those in the top 10 percent earn about 32 yuan per hour (column 1). In fact, those in the bottom 50 percent do not earn significantly higher hourly earnings than the corresponding wage earner while the upper 50 percent earn substantially more.

While returns are higher for the firms with high levels of assets, so is the risk (Table 19). Enterprises with high levels of assets have high debt-to-asset ratios. For example, the self-employed enterprises in the bottom 10 percent of the asset distribution virtually have no debt while that of the firms in the top 10 percent is 0.24 (column 5). The standard deviation is also higher for firms with higher returns. Perhaps this is because the self-employed with high assets need to find alternative ways to fund their investments besides using their own savings.

## Conclusions

In this paper, we provided a picture of the self-employment sector in rural China, especially focusing on the start-up, operation and financial performance of self-employed enterprises and the business environment within which they operate. Above all, this paper shows that there is a standard way that the self-employed initiate their businesses in rural China and a new class of “Self-Employed with Chinese Characteristics” appears to be emerging. Our paper shows that although the self-employed firms, on average, employ fewer than 3 persons, self-employment in the aggregate contributes a significant share of national employment. They also have been growing fast in terms of their rate of capital accumulation. Finally, we show that the self-employed earn more than wage earners and that the self-employed firms in a number of senses have performed better than SOEs and TVEs. In sum, this paper provides evidence that although the self-employed enterprises are small, they have grown fast, are in complex businesses and perform in a financially healthy way.

One last question about the self-employment sector we have not answered yet is whether the expansion of self-employment is a component of the healthy and dynamic development process of rural China or just a phenomenon occurring in poor areas. We have been observing firms in the aggregate, but it is possible that most of the expansion is in poor areas and that as poor areas develop, the importance of self-employment will diminish. In other words, it is possible that self-employment is just a transient institution.

In order to understand in great depth the nature of the self-employment sector, we also used our data to examine regional differences in self-employment. We find that the self-employment sector has been expanding fast in both the rich and poor regions. In all areas firms that use complex technologies and more capital, are growing over time. In both rich and poor areas, handicraft or custom labor providers are becoming less dominant. In addition, self-employment earnings are higher than wage earnings in both rich and poor regions and the self-employed are relatively better educated and share similar human capital.

Given the regional-based result, we believe that the findings indicate three things. First, the expansion of self-employment in rural China is not unique to poor regions. Second, in both the rich and poor regions, the quality of the self-employment sector has been improving over time. Third, in both regions self-employment activities are pursued by people with relatively high human capital who are attracted to the sector by profitable opportunities. Hence, we believe that the rise of self-employment in rural China is part of the dynamic development process, not a sign of economic failure. In contrast, Daniels (1999) finds that in Kenya the self-employed firms are in fact survival activities that reflect a lack of opportunities in the modern sector.

If self-employment in rural China is considered a source of growth of rural China and not a sign of economic distress, they deserve more attention and may be a source of continued output

and employment growth. Policy makers should overcome their biases against self-employment. Instead, they should formulate supportive policies for the sector. Those policies that help small entrepreneurs access to credits and provide technological support would boost self-employment activities. In the meantime, development economists also need to rethink the role of self-employment in the development process and modify their own intellectual biases about self-employment, at least in the case of China.

## References

- Blanchflower, G. David and Andrew J. Oswald. 1998. "What Makes an Entrepreneur?" *Journal of Labor Economics*. 16(1 January):26-60.
- Burke, E. Andrew, Felix R. FitzRoy and Michael A. Nolan. 2000. "When Less is More: Distinguishing between Entrepreneurial Choice and Performance." *Oxford Bulletin of Economics and Statistics*. 62(5): 565-587.
- Chernichovski, D. and Meesook, O. 1984. "Poverty in Indonesia: a Profile. World Bank Staff WP 761, World Bank, Washington, DC.
- Daniels, Lisa. 1999. "The Role of Small Enterprises in the Household and National Economy in Kenya: a Significant Contribution or a Last Resort" *World Development*. 27(1): 55-65.
- Daniel, Lisa and Donald Mead. 1998. "The Contribution of Small Enterprises to Household and National Income in Kenya" *Economic Development and Cultural Change*. 47(1): 45-71.
- Davies, Stephen, Donald Mead and James L. Seale, Jr. 1992. "Small Manufacturing Enterprises in Egypt" *Economic Development and Cultural Change*. 40(2): 381-412.
- deBrauw, Alan, Jikun Huang, Scott Rozelle, Linxiu Zhang and Yigang Zhang. 2002. "The Evolution of China's Rural Labor Markets during the Reforms," *Journal of Comparative Economics*. 30: 329-353.
- de Brauw, Alan. 2002. Unpublished Ph.D. dissertation. Davis, CA: Department of Agricultural and Resource Economics, University of California.
- Dunn, Thomas and Douglas Holt-Eakin. 2000. "Financial Capital, Human Capital, and the Transition of Self-Employment: Evidence from Intergenerational Links." *Journal of Labor Economics*. 18(2 April):282-305.
- Eswaran, Mukesh and Ashok Kotwal. 1986. "Access to Capital and Agrarian Production Organization." *Economic Journal*. 96(382 June): 482-498.
- Evans S. David and Boyan Jovanovic. 1989. "An Estimated Model of Entrepreneurial Choice under Liquidity Constraints." *Journal of Political Economy*. 97(4 August): 808-827.
- Evans, S. David and Linda S. Leighton. 1989. "Some Empirical Aspects of Entrepreneurship." *American Economic Review*. 79(3 June): 519-535.
- Grosh, Barbara and Gloria Somolekae. 1996. "Mighty Oaks from Little Acorns: Can Microenterprise Serve as the Seedbed of Industrialization?" *World Development*. 24(12): 1879-1890.
- Hamilton, Barton. 2000. "Does Entrepreneurship pay? An Empirical Analysis of the Return to Self-Employment" *Journal of Political Economy*. 108(3): 604-631.
- Holtz-Eakin, Douglas, David Joulfaian and Harvey S. Rosen. 1994."Entrepreneurial Decisions and Liquidity Constraints." *RAND Journal of Economics*. 25(2 Summer): 334-347.

- Fafchamps, Marcel, Srivastava, Tyler Biggs and Jonathan Conning. 1994 “*Enterprise Finance in Kenya*” World Bank.
- Fafchamps, Marcel, John Pender and Elizabeth Robinson. 1995. “*Enterprises Finance in Zimbabwe*” World Bank.
- Greenhalgh, Susan. 1988. “Families and Networks in Taiwan’s Economic Development.” in Edwin A. Winckler and Susan Greenhalgh (eds.), *Contending Approaches to the political Economy of Taiwan*. Armonk: M.E. Sharpe.
- Mead, Donald and Carl Liedholm. 1998. “The Dynamics of Micro and Small Enterprises in Developing Countries.” *World Development*. 26(1): 61-74.
- Mohapatra, Sandeep. 2004. “The Rise of Self-Employment in Rural China: Distress or Development?” Unpublished PhD dissertation. Davis, CA: Department of Agricultural and Resource Economics, University of California.
- Naughton, Barry and Dali Yang. “*Holding China Together: Diversity and National Integration in the Post-Deng Area*”. New York: Cambridge University Press, forthcoming, 2004.
- Oi, Jean. 1999. *Rural China Takes Off*. Berkeley: University of California Press.
- Parish, L. William, Xiaoye Zhe and Fang Li. 1995. “Nonfarm Work and Marketization of the Chinese Countryside.” *China Quarterly*. 0(143, September): 697-730.
- Parson, Talcott. 1956. “Suggestions for a Sociological Approach to the Theory of Organizations. I” *Administrative Science Quarterly*. 1(1): 63-85.
- Paulson, L. Anna and Robert Townsend. 2001. “Entrepreneurship and Financial Constraints in Thailand.” Working Paper. University of Chicago.
- Perkins, Tamara. 2003. “Entrepreneurial Fiends and Honest Farmers: Explaining Intravillage Inequality in a Rural Chinese Township” *Economic Development and Cultural Change*.
- Rozelle, Scott. 1996. “Stagnation without Equity: patterns of Growth and Inequality in China’s Rural Economy.” *China Journal*. 35: 63-96.
- Rozelle, Scott, Guo Li, Mingao Shen, Amelia Hughart and John Giles. 1999. “Leaving China’s Farms: Survey Results of New Paths and Remaining Hurdles to Rural Migration.” *China Quarterly*. 0(158): 367-393.
- Ruben, Ruerd and Marrit Van Den Berg. 2001. “Nonfarm Employment and Poverty Alleviation of Rural Farm Households in Hoduras.” *World Development*. 29(3): 549-560.
- Schmit, James A., Jr. 1989. “Imitation, Entrepreneurship and Long-Run Growth” *Journal of Political Economy*. 97(3): 721-739.
- Schumpeter, Joseph A. 1936. *The theory of Economic Development: an Inquiry into Profits, Capital, Credit, Interest, and the Business Cycle*. Cambridge Mass.: Harvard Univ. Press.
- Tokman, V. (Ed.), 1992. *Beyond Regulation: The Informal Economy In Latin America*, Lynne Rignner, Boulder
- Unger, Jonathan. 2002. *The Transformation of Rural China*. M.E. Sharpe, Inc.
- Weijland, Hermine. 1999. “Microenterprise Clusters in Rural Indonesia: Industrial Seedbed and Policy Target.” *World Development*. 27(9): 1515-1530.
- Whiting, Susan. 2001. *Power and Wealth in Rural China*. Cambridge University Press.
- World Bank. 2002. *Understanding Services and Measuring the Size of China’s Services Sector*. Beijing

Yamada, Gustavo. 1996. "Urban Informal Employment and Self-Employment in Developing Countries: Theories and Evidence" *Economic Development and Cultural Change*. 44(2): 289-314.

ZGTJNJ (*Zhongguo Tongji Nianjian-China Statistical Yearbook*). 2001. Beijing: China Statistical Press.

ZGNCTJNJ (*Zhongguo Nongcun Tongji Nianjian- China Rural Statistical Yearbook*). 1999. Beijing: China Statistical Press.

**Table 1 Diversification of Occupational Choice by Households  
(N=1184)**

Occupation	Freq.	Percent	Percent of Households also Farming	Percent of Households also wage earning	Percent of households also Self-employed
Farming only	250	21.1	100	0	0
Off-farm Jobs	934	78.9	93.5	63.8	42.5
Wage Earning	704	59.5	95.7	100	24.7
Self-employment	404	34.1	90.0	43.1	100



**Table 2 Diversification of Occupational Choice by Individuals**

Occupation	Freq.	Percent	Cum.
Farming only	1593	49.98	49.98
Wage Earning only	481	15.09	65.08
Self-employment Only	147	4.61	69.69
Farming+Wage Earning	525	16.47	86.16
Farming+self-employment	397	12.46	98.62
Wage Earning + self	8	0.25	98.87
Farming +wage +self	36	1.13	100.00
Total	3187	100	100

**Table 3 Transition into Self-Employment in Rural China**

Occupation right before Self- Employment	Number	Percent
Farming	182	50.00
Wage earning	70	19.23
Self-employment	11	30.77
Total	364	100.00

**Table 4 Initial Ownership Structure and Change of Self-Employed Firms**

	Initial Ownership		Current Ownership	
	Number	Percentage	Number	Percentage
Sole Proprietorship	427	92.8	430	93.5
Partnership	33	7.2	30	6.5
Total	460	100	460	100

**Table 5 Occupational Choice: Averages and Standard Deviations of Individual Characteristics for the Three Occupations in Year 2000**

	Sample Average	Sub Sample		
	Overall	Self-employment	Farming	Wage Earning
Sex (male)	54% (0.5)	70% (0.5)	44% (0.5)	65% (0.5)
Age	38.0 (13.7)	37.4 (11.0)	42.3 (13.3)	29.7 (11.7)
Marriage (married)	78% (0.4)	86% (0.3)	88% (0.3)	52% (0.5)
Education	6.0 (3.5)	6.7 (3.0)	5.0 (3.5)	7.8 (3.0)
Whether Receiving Training before	20% (0.4)	40% (0.5)	10% (0.3)	30% (0.5)
Sample Probability		15%		29%
Observations	3187	486	1792	909

Standard deviations of the averages in parentheses

**Table 6 Size and Sources of Initial Investment**

Initial Investment	Number of firms	Sources of Initial Investment						
		Own only	Banks only	Others*	Own+Banks	Banks+others	Own+Others	Own+Banks+Others
Total	473	64%	4%	8%	4%	15%	2%	3%
0-5,000	335	77%	3%	7%	1%	11%	0.4%	0.6%
5,000-30,000	98	37%	6%	9%	10%	23%	5%	9%
Above 30,000	40	30%	5%	10%	15%	23%	8%	10%

\* Others include friends, relatives and other people that lent fund to the self-employed.

**Table 7 Relationship between Enterprises and Collectives**

<b>Relationship with Collectives</b>	<b>Percentage of Firms</b>
No relationship	92.4
Buy from collective	0.9
Contract from collective	4.0
Rent land from collective	0.6
Rent building from collective	0.4
Cooperate with collective	1.1
Others	0.6

**Table 8 Composition of Family Members Pursuing Rural Enterprises**

Type	Obs.	Percentage	Cum.
Husband	252	53.3	53.3
Wife	50	10.1	63.4
Husband +wife	120	25.4	88.8
Kid only	30	6.3	95.1
Other	23	4.9	100
Total	473	100	

**Table 9 Employment Distribution of Self-Employed Enterprises**

Number of labor	Number of Enterprises	Percentage	Cum.
1	283	59.83	59.83
2	126	26.64	86.47
3	31	6.55	93.02
4	11	2.33	95.35
5	6	1.27	96.62
8 and above 8	4	3.38	100
Total	473	100	



**Table 10 Employment Composition of Rural Enterprises**

<b>Fixed Asset</b>	<b>Number of Enterprises</b>	<b>Percentage of Firms hiring labor from Labor markets</b>	<b>Percentage of labor from labor market</b>	<b>Percentage of labor from family</b>
Overall	473	9.30	6.0	94.0
0-5,000	335	6.57	4.1	95.9
5,000-10,000	58	10.34	6.8	93.2
10,000-20,000	29	10.34	5.9	94.1
20,000-30,000	11	9.09	6.1	93.9
30,000-40,000	7	42.86	31.9	68.1
40,000-50,000	9	22.22	11.1	88.9
50,000-60,000	4	0.00	0	100
60,000-70,000	3	66.67	43.1	56.9
70,000-80,000	1	0.00	0	100
Above 80,000	16	31.25	24.4	75.6

**Table 11 Structure of Total Assets of Rural Enterprises in Year 2000**

	<b>Obs</b>	<b>Mean</b>	<b>Median</b>	<b>Std. Dev.</b>	<b>Min</b>	<b>Max</b>
Total Asset	343	45454.46	6661.65	195753.2	0	2464997
Fixed Asset	353	35820.3	4441.96	175201	0	2164997
Account Receivable + Credit Liability	353	9634.16	400	33117.08	0	300000
Net Equity	353	38599.71	5316.67	185356.2	- 138242.8	330000 2314997

**Table 12 Fixed Asset Growth and Investment**

Initial investment	Average Annul Compound Growth Rate
Overall	15.2
0-5000	20.4
5000-10000	9.8
10000-15000	5.9
15000-20000	2.4
20000-25000	8.1
25000-30000	0
Above 30000	10.5

**Table 13 Investment Pattern after Start-up**

Initial investment	Overall Average Investment	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
0-5000	5476.9	3316.5 (10.1%)	6262.7 (6.3%)	7292.3 (5.8%)	2691.4 (4.3%)	4532.5 (3.8%)	3811.3 (4.8%)	4372.0 (2.4%)	6400 (1.0%)	20945.5 (1.4%)
5000-10000	7022.9	6976.5 (8.2%)	0 (0)	1700 (2.0%)	3800 (4.1%)	10570.2 (2.0%)	0 (0)	18717.8 (2.0%)	6925.7 (4.1%)	0 (0)
10000-15000	8710.5	6059.1 (12.5%)	9100 (4.2%)	0 (0)	0 (0)	6403.5 (4.2%)	6976.5 (8.3%)	0 (0)	0 (0)	0 (0)
15000-20000	10307.7	5000 (11.1%)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
20000-25000	9248.8	0 (0)	1951.0 (11.1%)	0 (0)	0 (0)	2000 (11.1%)	0 (0)	0 (0)	0 (0)	0 (0)
25000-30000	0	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)

In parentheses are the percentages of firms that invest.

**Table 14 Joint Distribution of Total Asset and Liability**

		Liability		Total	
		=<5,000	>5,000	Percentage	Obs.
	=<5,000	47.1%	1.4%	48.5%	207
Total Asset	>5,000	36.1%	15.5%	51.6%	220
Total	Percentage	83.2%	16.9%	100%	
	Obs.	355	72		427

**Table 15 Business Environment and Self-Employment**

Business Environment in 1990		Percentage of Households in Self- employment in 2000 (%)	Growth between 1990 and 2000 (%)
Distance from the Township	Near	40	4.8
	Far	26	4.5
Distance between nearest paved roads and villages	Near	35	4.8
	Far	33	5.2
Number of households having phones	Few	32	5.4
	Many	43	3.3
Level of Income	Low	30	5.3
	High	38	4.3
Gross Industrial Output Value	Low	39	7.0
	High	37	2.4

**Table 16 Hourly Earning for Self-Employment and Wage Jobs**

	<b>Mean</b>	<b>Medain</b>	<b>Std. Dev.</b>	<b>Min</b>	<b>Max</b>
Wage Earning	2.0	1.4	3.9	0	109.7
Self-Employment	7.8	2.4	36.8	-40.5	500

**Table 17 Predicted Wage Earnings and Capital Interest Income for the Self Employed by Asset Size**

	Mean	Wage	Capital Income per Hour	Difference
Overall	7.8	2.7	0.77	4.33
Bottom 10%	3.9	2.6	0.005	1.3
Low Middle	2.4	2.8	0.04	-0.44
High Middle	8.8	2.7	0.28	5.8
Top 10%	31.7	3.0	1.32	27.4

The interest rate used for calculating the capital interest income is the annual interest rate (2.25%) of deposit from China Statistical Yearbook (2001).



**Table 18 Debt to Asset Ratio by Different Types of Enterprises**

	<b>Return on Asset</b>	<b>Debt to Asset Ratio</b>
<b>Self-Employed Enterprises</b>	0.98	0.21
<b>State-owned enterprises*</b>	0.03	0.60
<b>Township and Village Enterprises*</b>	0.07	0.60

\* China Statistical Yearbook, 2001.

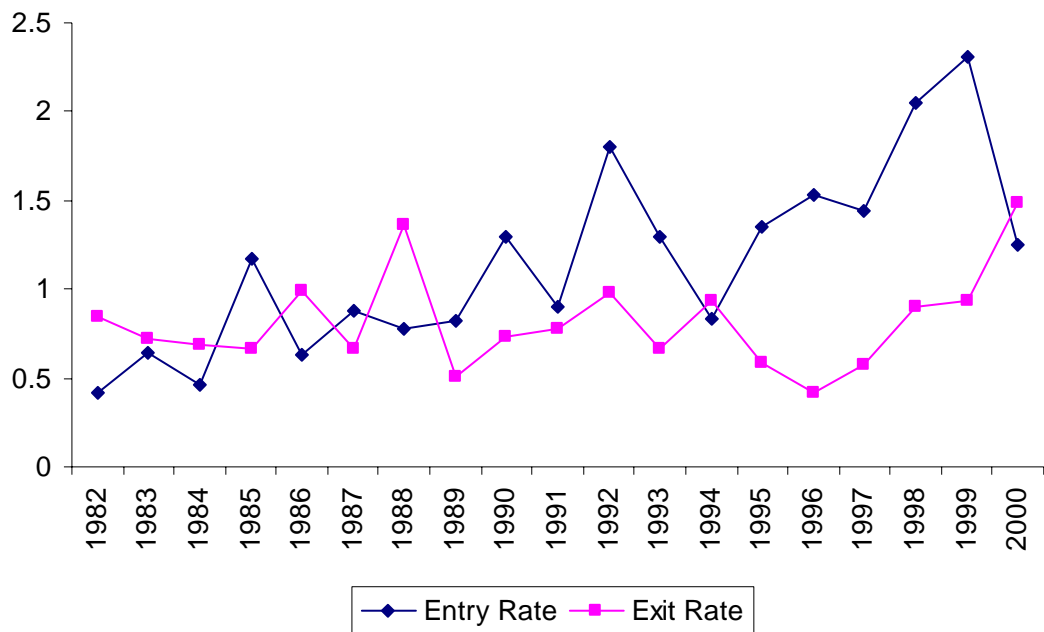
\*\* China Rural Statistical Yearbook, 1999.

**Table 19 Financial Performance of Self-Employed Enterprises by Size**

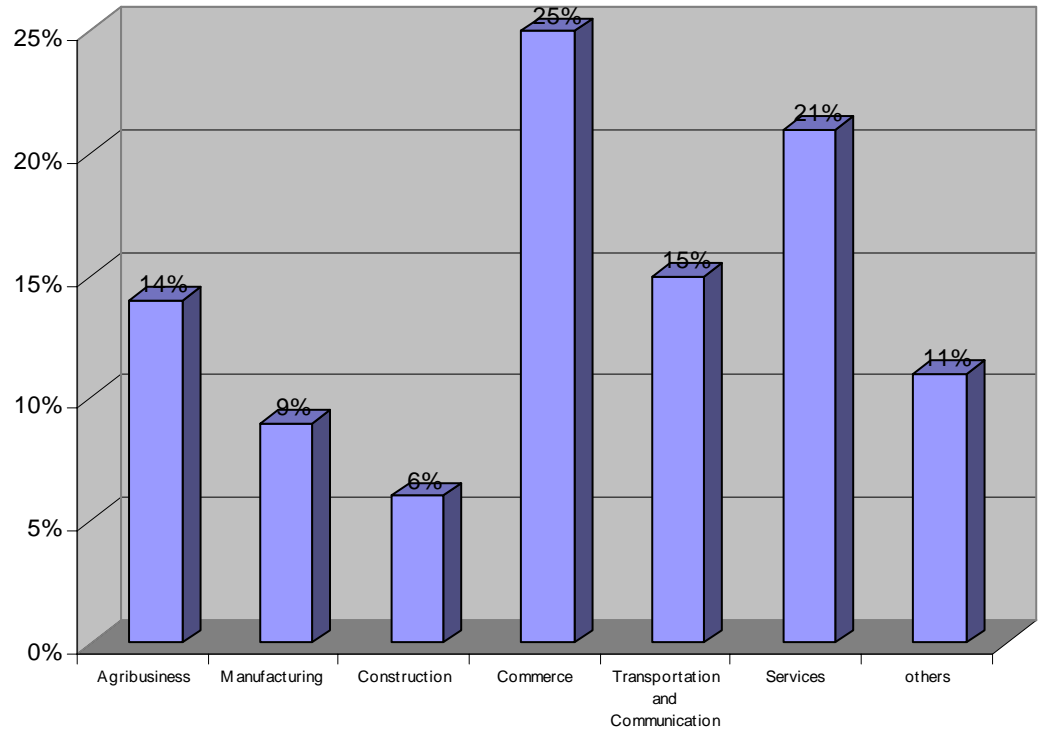
	Hourly Earnings		Return on Asset		Debt to Asset Ratio	
	Mean	Std. Dev.	Mean	Std. Dev	Mean	Std. Dev.
Bottom 10%	3.9	8.1	10.8	40.8	0	0
Low Middle	2.4	5.8	-0.03	3.1	0.13	0.4
High Middle	8.8	38.1	0.19	0.62	0.23	0.4
Top 10%	31.7	87.8	0.26	0.26	0.24	0.5



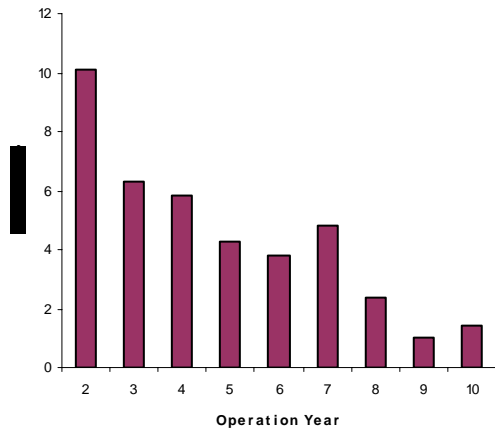
**Figure 1 Occupation Diversification conditional on Self Employment**



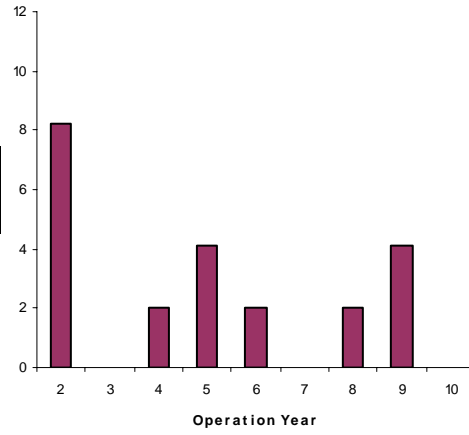
**Figure 2 Self Employment Entry and Exit, 1981-2000**



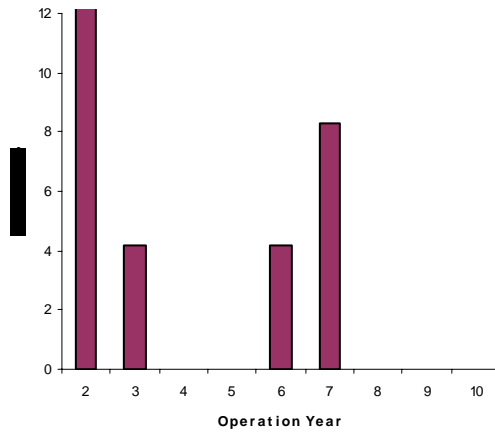
**Figure 3 Distribution of Self Employment across industries**



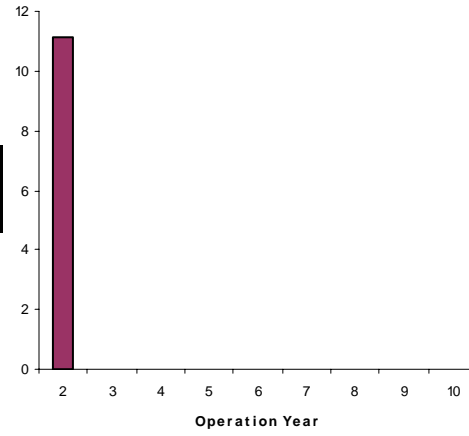
**Initial Investment less than 5000 yuan**



**Initial Investment between 5000 and 10000**



**Initial Investment between 10000 and 15000**



**Initial Investment between 15000 and 20000**

**Figure 4 Frequency of Investment over Operation Horizon**

## Endnotes

---

<sup>1</sup> In this paper, self-employment refers to those individuals who are engaged in running non-agricultural enterprises. Although farmers and small scale livestock operators are also self-employed, we break them out as the agricultural sector.

<sup>2</sup> Despite the relatively modest growth rates, it is still of interest to understand the distribution of growth across firms. Somewhat unexpectedly, the overall growth of the self-employed firms is mainly driven by the small firms. Firms with initial investments of less than 5000 yuan actually grew at a rate that was higher than the overall growth rate of the larger self-employed firms (20 percent—Table 12, row 2). In fact, the growth rate of these small firms is double or even higher than that of the rest firms. Moreover, consistent with the different growth rates across firm size, there are quite different investment patterns between the small firms and the large ones. After the start-up, the small firms make more frequent investments than the larger firms (Table 13 and Figure 4). Perhaps because they are more flexible and change technologies or lines of business more rapidly, for the firms with initial investments of less than 5,000 yuan, the owners make investments in nearly every subsequent year (Figure 4, top and left panel). In contrast, in the firms with the initial investment between 10,000 and 15,000, investments only occurred in 4 years out of the first ten years (bottom and left panel). However, it should be noted that although the subsequent investments by small firms are more frequent, those by the larger firms on average are larger (Table 13). For example, conditional on the fact that a firm invested, the average investment for the firms with the initial investments between 20,000 and 25,000 is about 9,300 yuan (row 5). The average investment size for firms with the initial investment less than 5,000 is only about 5,500 yuan (row 1).

<sup>3</sup> To understand the business environment in which the firms are operating, the survey team also executed a community level survey. The survey instrument collects information on the location of the village, the availability of electricity, telephones, radios and televisions and the number of roads and buses going through the village. Respondents also asked leaders about the general characteristics of the community, its income level, the importance of agriculture and the extent of the non agricultural industrial development. With the information, we can create a profile of the infrastructure that exists in each village that can support or constrain self-employment. The data are available for two years, 1990 and 2000.

<sup>4</sup> The capital income part is calculated as the interest income that the self-employed would have earned if they put funds in banks, instead of investing in self-employed firms. The interest rate used for calculating the interest income is the annual interest rate (2.25%) of deposit from China Statistical Yearbook (2001).

<sup>5</sup> We evaluate the financial risk of the self-employed enterprise in the sense that how much of the assets are financed through debt. If the enterprise is sufficiently levered, interest expenses may be so high that under adverse economic conditions the enterprise may not be capable of paying back. That means financial risk is directly proportional to leverage. We use the total debt to total assets ratio, which is one of the important leverage ratios and is often used by financial analysts, to access the financial risk of the self-employed enterprises.