

**WHY CHINA GREW:  
UNDERSTANDING THE FINANCIAL STRUCTURE OF  
LATE DEVELOPMENT**

A Dissertation Presented

by

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## **ABSTRACT**

# **WHY CHINA GREW: UNDERSTANDING THE FINANCIAL STRUCTURE OF LATE DEVELOPMENT**

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This dissertation explores how economic institutions governing finance and investment have contributed to growth in reform-era China. Economic and political reforms transformed Chinas prior centrally-planned economy. Although reforms incorporated elements of market institutions and private enterprise, state institutions exercising extensive authority over a wide range of economic affairs critically and fundamentally played a central role in transforming this economy from one of the worlds poorest to the worlds second largest in the span of one generation. I explain the emergence of a unique configuration of institutions supportive of industrial policy implemented by largely autonomous local government officials. In combination with state-directed bank credit, this local government industrial policy finance has played a significant and positive role in development of exports in China. Though private entrepreneurs are often seen as dynamic engines of growth in Chinas reform-era economy, I show the vast majority of entrepreneurs are low-skilled, low-productivity,

and exhibit non-positive rates of capital accumulation. Most entrepreneurs would experience higher earnings were they not segmented into self-employment occupations by adverse socioeconomic conditions. Rather than engines of growth, Chinas entrepreneurs resemble more the vast numbers of informal sector self-employment prevalent in many developing countries.

## CHAPTER 3

# CHINA'S PRIVATE ENTREPRENEURS: CAPITALIST DYNAMOS OR RESERVE ARMY OF THE SELF EMPLOYED

### 3.1 Introduction

Entrepreneurs play a vaunted role in economic theory: their competitive zeal, creativity, and initiative spawn the product and process innovations that form the foundation of economic growth (Baumol 1968). Many observers attribute China's development success to a wave of private, self-employed entrepreneurs unleashed through successive market-liberalizing reforms since 1978. Huang (2008: 55), for example, asserts there was no "China Miracle"—China grew because of its "private sector dynamism." Yueh (2009: 778) cites China's entrepreneurs as "important drivers of growth," and Zhang, et al. (2006) depict the sector as an "engine" of growth. These are just some examples of the view that China's fencing-in of the economic commons, its cultivation of private property rights, and its opening to market price-based resource allocation paved the way for a new economy of unbridled capitalist dynamism. After all, in 2001 the Communist Party even started extending membership to private businessmen. This vision of China's success is one where economic reforms unleashed an army of previously collectivized, disincentivized workers, transforming them into an army of skilled, innovative, motivated, risk-loving entrepreneurial pioneers.

This chapter answers two questions. First, who in China become entrepreneurs and why? Second, how attractive are the potential economic opportunities in entrepreneurship relative to expected rewards of other occupational choices, namely wage employment? Theory suggests that those with particular entrepreneurial verve

or appetite for taking risks will self-select into entrepreneurial occupations. Though it is unclear how economists might measure entrepreneurial ability, it is clear from the data that China's entrepreneurs exhibit lower levels of education than their wage worker counterparts in both urban and rural labor markets. Lower overall educational attainment indicates that the population of entrepreneurs are unlikely candidates to be leading the technological intensification underlying China's economic growth. Theory also suggests that financial structures providing access to investment capital and securing property rights to create appropriate investment incentives are important for entrepreneurial development. Even most moderately-sized projects require financing beyond the means of the individual entrepreneur. The importance of external finance for entrepreneurship implies that underdeveloped financial institutions that ration credit will constrain the supply of entrepreneurship and thereby impede economic development.

Between 1988 and 1995, entrepreneurial self-employment in the rural economy shot up by 30 million, accounting for almost 40 percent of all new off-farm rural employment (Rozelle, et al. 1999). Even though the trend of self-employment in China and the strengthening of property rights in the 1990s appear to coincide with a period of rapid economic growth, China's self-employed entrepreneurs are unlikely heroes in China's economic drama. China's financial institutions are widely regarded as inefficient and biased against the private sector (Lardy 1998; Park and Sehrt 2001; Podpiera 2006), particularly for the difficulties small and medium private sector entities face in obtaining external credit (IFC 2009; Zhang 2001; Liu 2007). At the outset of economic reforms, China ranked as the fourth poorest country in the world, rivaling countries like Burundi and Nepal in level of economic development, including in the quality of institutions.<sup>1</sup> Though China instituted landmark reforms to

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<sup>1</sup>The levels of per capita income were US\$251 in China, US\$203 in Burundi, and US\$265 in Nepal in 1980 measured at IMF purchasing power parity exchange rate.

strengthen property rights, both with implementation of the 15th National Congress guidelines in 1997 (Wu 2005) and in regulatory changes related to China's 2001 accession to the WTO, China's property rights institutions fall far short from the idealized institutions thought to support private entrepreneurial development (La Porta, et al. 1997, 1998). The International Finance Corporation's (IFC 2009) *Doing Business 2010* survey ranked China an unimpressive 89th out of 183 countries in overall business-friendly institutional environments (barely edging out Zambia), 93rd in investor protections, and 151st in ease of starting a new business.<sup>2</sup> The financial access problems for China's private sector have improved little over the course of reforms (Lardy 1998; Park and Sehart 2001; Bonin and Huang 2001; Podpiera 2006). Some have suggested that, though China's formal financial institutions are inefficient, informal financial activities—credit relations beyond the purview of law and exogenously enforceable contracts—are pervasive in China and substitute (relatively) more efficient institutions in place of less efficient formal finance dominated by state banks and large firms (Allen, et al. 2005).

Aside from having a large population, China differed from its less developed peers in one key respect. Unlike these other poor countries, a decades-long industrialization campaign under centralized economic planning had left China with a highly developed—if technologically outmoded—industrial infrastructure at the time that economic reforms commenced in 1978. This industrial infrastructure included numerous state and collective-owned enterprises (SOEs and COEs), including the rural production brigades that would evolve into China's dynamic township and village enterprises (TVEs), as well as the state administrative infrastructure to support it. Later, in the 1990s and beyond, privatization and corporate governance reform of the SOEs, COEs, and TVEs would help private entrepreneurs penetrate the industrial sec-

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<sup>2</sup>The IFC is the World Bank's private sector lending arm.

tor, particularly heavy manufacturing industries, but early entrepreneurs were largely excluded from this industrial sector. It would be remarkable if China's entrepreneurs were so different from self-employed entrepreneurs in Zambia, Burundi, Nepal, or any other country with underdeveloped financial systems and legal institutions.

In other developing countries a different story of entrepreneurship than that suggested for China predominates. Though few self-employed entrepreneurs and entrepreneurial firms achieve growth or high profitability, the sector is expanding rapidly in many regions of the world (Nichter and Goldmark 2009). Entrepreneurs in Tunisia with small wealth endowments were found to achieve no increasing returns, indicating low technological sophistication in their enterprise (Mesnard and Ravallion 2001). In Ghana, small entrepreneurial enterprises exhibited low productive capacity, low growth, and high rates of attrition; the bulk of small Ghanaian entrepreneurs did *not* grow into larger economic entities (Masakure, et al. 2008). In Argentina, not only do the self-employed on average earn less and experience less income growth than wage or salary-employed workers (controlling for skill levels), individuals tend to enter self-employment in economic downturns when economic conditions are most difficult (Mandelam and Montes-Rojas 2009). The story is much the same throughout the developing world where substantial segments of the economically active population are working in self-employment when the expected rewards from working in other occupations are so much better. Many of these individuals are engaged in informal economic activities (ILO 1972), beyond the purview of the legal system and absent social protections, and are concentrated in small-scale, low productivity, unskilled labor-intensive activities (Pratap and Quintin 2006). Could China's entrepreneurs be so different? Could they achieve the dynamism some ascribe to them even amidst underdeveloped financial institutions and an environment of relatively weak private property rights muting incentives for private risk-taking?

Survey data, including the China Household Income Project survey (CHIPS) on which this chapter is based, consistently find that China’s entrepreneurs comprise roughly 4 percent of the national work force; official macroeconomic data show self-employment rising as high as 8.7 percent in 199899, falling back to an average of 6.7 percent in the years thereafter. This entrepreneurial economic sector spans a broad range of activities, from informal petty trading and household “putting-out” production, to large private national and even international (domestically owned) corporations. Although there are of course many examples of private Chinese businesses fitting into the latter group, the vast majority of China’s self-employed entrepreneurs fall closer to the former group in terms of size, technological sophistication, and productivity, concentrated in service sector activities requiring little capital or technical skills: retail and wholesale trade, food service, and so on (Maddison 2007: 84). According to CHIPS data employed in this study, more than 92 percent of urban self-employed entrepreneurs and two-thirds of rural self-employed entrepreneurs are concentrated in traditionally low-productivity, low-skill-intensive service sector activities.

Drawing on the large-scale, nationally representative CHIPS 2002 data, this chapter evaluates the relationship between financial institutions and labor markets as they pertain to the supply and quality of entrepreneurship.<sup>3</sup> To the best of my knowledge, this is the first use of the CHIPS to study entrepreneurship and entrepreneurial finance. Though administered more than twenty years into economic reforms, the 2002 survey captures the effects of important institutional reforms in the late 1990s affecting private entrepreneurship. First, new laws strengthening private property rights and investor protections greatly improved the institutional environment and incentives to enter entrepreneurship. Second, reforms in the 1990s also promoted

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<sup>3</sup>See Gustafsson, et al. (2008) for a description of the CHIPS survey.



widespread privatization of state-owned and collectively-owned enterprises as well as management-labor relation reforms in enterprises remaining state-controlled. While privatization improved the business environment for the private sector, privatization and management reforms also led to mass layoffs and diminished economy-wide demand for labor. In order to better understand the contribution of indigenous entrepreneurs to China's development, I investigate which individuals supply entrepreneurship in China by choosing self-employment, factors affecting the probability of this occupational choice, and the productivity of these workers relative to workers in wage labor occupations.

Specifically, I estimate the effects of wealth and access to formal and informal finance, factors affecting labor market segmentation, and individual characteristics on the occupational choice of entrepreneurial self-employment. Wealth endowments may be endogenous with the choice of entrepreneurship if individuals accumulate wealth in anticipation of entering entrepreneurship (Evans and Jovanovic 1989) or if entrepreneurs accumulate wealth faster than non-entrepreneurs due to their enterprises. These possibilities complicate empirical analysis of wealth observed *ex post* of the occupational selection decision. To mitigate this endogeneity issue, I exploit a natural experiment provided by China's urban housing privatization scheme, which randomly "distributed" wealth endowments to individuals (Li and Zhao 2007), exogenous to any individual propensity toward entrepreneurship. After assessing factors affecting the probability of entering self-employment, I model the determinants of earnings for individuals in wage employment and self-employment occupations, controlling for the endogeneity of earnings and occupational choice, and compare the opportunity costs of occupational choice and the potential gains (losses) from switching occupations.

Instead of dynamic entrepreneurship, I find evidence that China's entrepreneurs largely comprise a reserve army of the self-employed with a constrained opportunity

set of occupational choices in their labor supply decision. In this sense, the vast majority of China's entrepreneurs resemble informal sector self-employment pervasive in many developing countries. China's entrepreneurs fall into one of two broad categories: those with relatively low skills facing social and economic marginalization who would be better off in wage work if such opportunities were available, and those who appear to excel in entrepreneurship owing to political relationships with agents of the Party and the State.

After reviewing the literature on institutions, finance, and entrepreneurship in Section 3.2, I discuss available data on entrepreneurs in China (Section 3.3) and provide an extensive descriptive statistical analysis of entrepreneurs and entrepreneurial enterprises (Section 3.4). Section 3.5 presents results of an estimated probit model of the determinants of occupational selection. Section 3.6 presents estimates of earnings functions for entrepreneurs and wage workers and compares the potential earnings gains (or losses) from switching occupations. Finally, Section 3.7 draws conclusions and discusses remaining questions about the nature of entrepreneurship in China's economic development.

## **3.2 Institutions, Finance, and Entrepreneurship**

With the end of collective agriculture and the opening of space for private ownership and individual businesses, economic reform in China provided individuals with the opportunity to choose from an expanded set of occupations. Why choose to be an entrepreneur? At the simplest level, individuals will choose the occupation for which the expected returns are better than or equal to their next best alternative choice. This suggests that individuals who have the highest expected rewards will be attracted to entrepreneurship. The economics literature identifies two key factors primarily associated with the occupational choice to supply entrepreneurship: individual characteristics and wealth (Evans and Jovanovic 1989; Blanchflower and Oswald

1998;) Individual characteristics indicate a propensity toward self-employment as well as the potential returns to individual abilities in self-employment relative to other occupations. Wealth plays several roles, affecting the individual's preferences, economic opportunities, and the ability to access external finance in order to achieve sufficient scale economies in production. Institutions, in particular the financial structure institutions affecting property rights and credit contracting, play a foundational role in affecting the calculus of expected returns in the labor supply decision. Macroeconomic conditions, too, such as interest rates and the level and stability of growth, also obviously impact expectations formation and the cost-benefit analysis.

Individuals vary in their preferences for risk and abilities beneficial to entrepreneurial self-employment, and thus some people will have predisposed preferences for entrepreneurship. The labor supply choice of self-employment is unobserved by researchers, but it is reasonable to assume that individuals with innate entrepreneurial abilities—an ambiguously defined endowment of initiative and business acumen—and specific technical skills or knowledge will be more likely to choose and succeed in entrepreneurship. These attributes may or may not be known (or estimated) to the individual prior to the labor supply choice, but are inadequately observed by the researcher. An individual's particular concentration of endowed abilities, in addition to affecting the individual's labor supply choice, will also affect another simultaneous choice of economic sector to enter, and the choice of sector is in turn related to expectations of potential returns. Unobserved by the researcher, "ability" is proxied typically by the individual's level of education and work experience, such as in a standard Mincer (1974) earnings model. It has been suggested that some individuals may derive non-monetary benefits from entrepreneurial labor (subjective happiness) from aspects of entrepreneurial activities. This preference for characteristics of entrepreneurship is distinct from individual risk preference. It is possible that, even where an entrepreneurial individual may be indifferent to or worse off than in wage

employment (or other non-entrepreneurial activities), the satisfaction of entrepreneurship could more than offset some deficit in expected monetary rewards.<sup>4</sup>

Wealth affects entrepreneurship through several channels. First, wealthy individuals tend to have higher risk preferences, perhaps because they are better able to withstand the risks of entrepreneurship (Bardhan, et al. 2000). Second, problems of incomplete or unenforceable contracting in credit relations lead to credit rationing through reduced quantity and/or higher cost of capital. The constraints diminish as individual wealth increases, meaning that wealthy individuals will have a larger opportunity set of potential credit relationships. In the trivial case, a wealthy individual may be able to self-finance a project without the need for external funding, although this often is not possible even for modest-sized projects. There is an extensive literature relating information and contracting problems to credit constraints generally in finance (Stiglitz and Weiss 1981) and the implications of these coordination problems for the supply of entrepreneurship (Evans and Jovanovic 1989; Banerjee and Newman 1993; Mead and Liedholm 1998; Aghion, et al. 2007).

Wealth endowments constrain the range of feasible contracts in which individuals can engage, influencing not just the choice of entrepreneurship but also the scale and scope of undertaking (Eswaran and Kotwal 1990; Bowels 2002: Ch. 10). Greater wealth endowments that entrepreneurs can commit to a project will relax the external financing constraint, enabling the entrepreneur to choose from a wider range of projects and to achieve better scale economies. In this respect, wealth and credit constraints will affect firm performance. Entrepreneurs facing borrowing constraints will enter with under-capitalized initial investments and thus operate at less-efficient scale.<sup>5</sup> Strong institutions, including property rights, exogenous contract enforce-

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<sup>4</sup>Although there does not appear to be much difference in subjective happiness between wage workers and entrepreneurs in China, as discussed in Section 3.4.1 below.

<sup>5</sup>Evans (1987), however, argues such enterprises may grow faster due to strong incentives to reinvest earnings.

ment, and investor protections, are importantly related to the financial system's ability to attenuate problems in credit relations (La Porta, et al. 1997; 1998). The implication is that underdeveloped financial and legal institutions constrain individuals from entering entrepreneurship, but even in economies where these institutions are highly developed (i.e., not China), contracting problems such as moral hazard and adverse selection still abound and result in credit rationing. Development of financial institutions alone cannot eliminate information and contracting problems in credit relations—which persist even in the most advanced economies—and liberalization may exacerbate problems of entrepreneurial finance (Emran and Stiglitz 2007).

Entrepreneurial supply, in this view, is a function of the expected return from entrepreneurship, given individual abilities, wealth endowment, and risk preference, relative to the returns to wage labor or agricultural production for market or own-account. Institutions enter the equation by shaping who receives access to external finance and the quantity of financing received, and the entrepreneur's ability to appropriate profits from their investments.

But other factors—social, political, and economic—can also restrict the individual's set of occupational choices, resulting in dualistic, segmented labor markets (Fields 1975; Gordon, et al. 1983). That is, the choice of entrepreneurship may not be an individual's strict preference and may be made with a calculus unrelated to individual entrepreneurial abilities. There is some debate, though, as to whether segmentation results from the disadvantages faced by distinct groups or from rigidities in the formal labor market that restrain labor demand (Maloney 2004), and China's formal labor markets indeed exhibit rigidities (Brooks and Tao 2003). But the rigidities are most binding in the SOE sector where the declining employment trend is a construction of explicit policy, not the result of rigidities constraining labor demand. The following section turns to exploring who becomes an entrepreneur in China, why, and how successful are they as entrepreneurs. The descriptive analysis shows that

social segmentation factors, rather than rigidities preventing labor market clearing, are associated with entrepreneurship in China.

### 3.3 Data on China's Entrepreneurs

Although entrepreneurs are thought to be critical for growth, and for China's development experience in particular, systematic empirical research on China's entrepreneurs comprises a relatively small literature. With some important exceptions (Yueh 2009a, 2009b), the research has been focused on idiosyncratic cases—such as the experience of Wenzhou city in southern Zhejiang province, where early and extensive promotion of private sector development occurred (Parris 1993)—or been limited to surveys of small-to-moderate-sized samples (Djankov 2006), or of very large firms. For example, Allen, et al. (2005) survey seventeen large private firms to evaluate the relationship of informal finance to entrepreneurship; the Asian Development Bank (2003), in a study of private sector development, surveyed 719 firms that were *sixteen times larger* than the national average size for private sector firms—a systematically biased sample for evaluating China's private sector as a whole. An investment bank study from CLSA proclaimed China's entrepreneurs were “on the attack!” after surveying a mere 30 ostensibly small and medium-sized enterprises, although these averaged US\$28 million in annual sales (Rothman, et al. 2005).

This study draws on the large-scale, nationally representative 2002 China Household Income Project survey (CHIPS; see Gustafsson, et al. 2008). Though the present wave of self-employment in China began with the onset of economic reforms and there are two earlier iterations of the CHIPS data (for 1988 and 1995), there is an analytical rationale for focusing on the 2002 data. Aside from the practical matter of more relevant questions on entrepreneurship and credit relations, the 2002 survey follows important institutional reforms promoting privatization and strengthening of private property rights. First, new laws strengthening private property rights and

investor protections greatly improved the institutional environment and incentives to enter entrepreneurship. Second, the wave of reforms in the 1990s also promoted widespread privatization of state-owned and collectively-owned enterprises as well as management-labor relation reforms in enterprises remaining under state-control. Privatization also improved the business environment for the private sector, but also privatization along with management reforms led to mass layoffs and diminished aggregate demand for labor. Despite offering the most extensive individual and household economic data on China, to the best of my knowledge, this is the first use of the CHIPS to study entrepreneurship and entrepreneurial finance.<sup>6</sup>

It is worth pausing to consider just what makes an “entrepreneur” amid the myriad of legal ownership forms and property rights in reform-era China. Entrepreneurs are, at their core, people who take investment risks and supply their critical enterprise to the endeavor. China’s private ownership sector encompasses a large and growing share of the economy, but not all “private” firms are entrepreneurial (and indeed, as described in Chapter 1, not all “private” firms are really private). Enterprises may be classified as self-employed or an individual business owner, private, joint-stock corporation, shareholding corporation (market-listed), or domestic or foreign joint ventures, aside from wholly state-owned or collectively-owned enterprises (SOEs or COEs) and quasi state-owned TVEs. The TVEs at the heart of the rural-centered manufacturing and export boom occupy a property rights gray area wherein entrepreneurial local government officials exercised considerable autonomy and authority over even private economic affairs. In population terms, ostensibly private TVEs comprised approximately 90 percent of registered TVEs, though these were mainly small-scale and concentrated in low-productivity service activities (Huang 2008: Ch. 1). Though relatively small in numbers, larger-scale manufacturing and industry TVEs were pre-

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<sup>6</sup>In fact, some research explicitly excludes self-employed, private entrepreneurs from labor market analyses with CHIPS (Yang 2005).

dominantly owned collectively or outright by the local government. Smaller, private TVEs likely played supporting roles in the rural economy as links in the production chains of collective TVEs, benefitting also from agglomeration economies of collective TVE local industry.

When policymakers began privatizing SOEs, they engineered corporate governance structures with diversified bloc shareholding, albeit with blocs distributed to other state-owned enterprises, asset management companies, and government agencies rather than to private ownership (Wu 2005). Now, the Chinese government, at various levels, controls approximately two-thirds of outstanding shares issued on the domestic stock exchanges. Privatization of local government- and collectively-owned TVEs, however, proceeded with a broader menu of property rights institutions options, but ultimately yielded private claimancy and control rights, often to current managers, even though the local government still retained significant shares and influence. It is safe to say that TVE managers, who often assumed residual control of the enterprise following privatization, retained their close connections with government officials and the economic benefits that entrepreneurial government officials focused on delivering growth could bring to bear. These new manager-owners of recently privatized TVEs are certainly entrepreneurs, but the political and social assets they bring distinguish them from other private entrepreneurs, particularly the self-employed and individual business owners. Managers of firms such as those privatized SOEs or those of other private corporate governance structures may be skilled, but the political and social assets they bring distinguish them from other private entrepreneurs, particularly the self-employed and individual business owners.

For the purpose of this study, “entrepreneur” is defined as someone self-identifying as self-employed, the owner of an individually-owned or private business, or the manager of an individually-owned or private business for which the individual owns a majority of the productive capital stock. Although a large segment of the private



economy emerged with diverse property rights that assign residual control to managers and residual claimancy and risk to capital owners, managers of such enterprises do not qualify as entrepreneurs where they are uninvolved with risk-taking. The CHIPS data are divided into rural and urban surveys with separate questionnaires, covering 9,200 and 6,835 households and 37,969 and 20,632 individuals, respectively. In total, I identify 1,085 entrepreneurs (4.5 percent of the economically active population) in the rural survey and 450 (4.3 percent) in the urban survey, a prevalence of entrepreneurship consistent with other data sources (Yueh 2009a; NBS). In the urban survey sample, entrepreneurs are defined as those economically active individuals reporting an occupation of “self-employment” (n=434). Additionally, individuals reporting “owner or manager of private firm” or “other” occupations are defined as entrepreneurs if they also report positive values for owning self-owned productive assets (n=7 and n=9 observations respectively). Similarly in the rural survey, I define those economically active individuals identifying their occupation as “non-farm individual enterprise owners” (n=1,054) or as “owner or manager of enterprise” with positive values of non-agricultural productive assets (n=31). In the rural survey sample, however, I exclude individuals with occupations classified as “other” and with positive non-agricultural productive assets. This group also reports high agricultural time allocation, near the level of subjects identified as agricultural producers.

For a number of entrepreneurial enterprises, multiple household members supply labor to the enterprise. In the analysis that follows, individual characteristics are assessed using the full sample of entrepreneurs while household characteristics are assessed by assuming one individual exercises enterprise control. There is no information on intrahousehold allocation decisions and this is an arbitrary decision to assign control to the head of household or, in cases where the household head is not engaged in the enterprise, to the oldest participating household member. As a robustness

check, econometric analyses were also conducted on the full sample of entrepreneurs, but this did not qualitatively affect the results.

The data present some short-comings for the analysis of entrepreneurship as well. Self-reporting of the self-employment occupational choice is likely to understate the prevalence of entrepreneurship by missing unreported informal sector activities (Storey 1991). But to the extent that the informal sector comprises low-productivity activities, this potential omission would likely bias estimates of entrepreneurial selection and performance toward better-qualified and more successful individuals. It is also possible that a large pool of China's successful entrepreneurs are simply missed in the CHIPS's random sampling process, which was not designed to study entrepreneurship. However, the proportion of entrepreneurs observed in the CHIPS data is in the range of that reported in other distinct survey data specifically designed to study entrepreneurs as well as in national statistics. Thus, repeated sampling seems to converge on a consistent estimate of the size of the entrepreneurial population. Finally, I note that the data exhibit selection bias in not observing failed entrepreneurs, only surviving entrepreneurs. To the extent this selection bias exists, it should tend to bias in favor of observing relatively successful entrepreneurs.

## **3.4 Characteristics of China's Entrepreneurs and Entrepreneurial Enterprises**

### **3.4.1 Characteristics of Entrepreneurs**

Several stylized facts about China's entrepreneurs emerge from this literature, most of which are confirmed by analysis of the CHIPS data. The research indicates only a small share of the population is engaged in entrepreneurship. Yueh (2009a) finds, in a survey of 4,500 urban households, roughly four percent of the sample engaged in entrepreneurship. Djankov, et al. (2006) find that China's (urban) entrepreneurs tend to be wealthier, have higher risk preference, and have other family

members engaged in entrepreneurship. Some evidence suggests that entrepreneurs tend to be happier on average than non-entrepreneurs, however this is not the case in the analysis discussed below. In contrast to findings in other developing countries, China's entrepreneurs are more likely to be male and heads of household. China's entrepreneurs have lower educational attainment than those in wage employment occupations and are more likely to have been laid off from their previous job and to face other forms of social and economic marginalization. Entrepreneurial households appear to differ little from other households in their ability to access external credit, although those with political connections appear to access credit on better terms. The vast majority of China's entrepreneurs are of very small scale, are concentrated in low-productivity service sector activities, and exhibit low-to-negative capital accumulation rates.

#### **3.4.1.1 The geography of entrepreneurship**

The geographical dimension of unequal development between China's coastal and interior provinces is often attributed to the earlier and more extensive experimentation with liberalization and private sector development. A corollary hypothesis is that private entrepreneurship developed most in the coastal provinces, and particularly the southeastern provinces, where market reforms were earliest and furthest advanced and where proximity to the Hong Kong, Macao, and Taiwan economies provided channels to supply investment capital, to transfer managerial and technological know-how, and to provide entrepot trade linkages to export markets. However, geographical distribution of China's entrepreneurs shown in Figure 3.1 does not conform with this explanation for why coastal development raced ahead of the rest of the country. In fact, while self-employment is prevalent in some of the dynamic coastal province economies, it is equally prevalent in a number of the non-coastal provinces not often thought of as leading China's economic growth. Certainly coastal provinces

such as Guangdong, Zhejiang, and Jiangsu rank near the top of provinces with the highest shares of entrepreneurs. Guangdong and Liaoning provinces had almost 12 percent of urban entrepreneurs in the CHIPS sample and Jiangsu had over 8 percent; however, in Zhejiang and Shandong no urban entrepreneurs are observed in the data. Zhejiang did have the highest concentration of rural entrepreneurs. But many provinces far from the liberal and open coast had similar or even higher proportions of China's entrepreneurs. Henan province, in China's southern interior, had the highest share of urban entrepreneurs and tied with Zhejiang for the highest share of rural entrepreneurs. Sichuan, in the west, had more urban entrepreneurs than any of the coastal provinces, and Yunnan, Anhui, and Gansu all had shares of urban entrepreneurs comparable to Jiangsu's level. Thus, the distribution of China's entrepreneurs (as observed in the CHIPS data) does not correlate well with coastal geography where the provinces are more prosperous with more capital available from formal and informal sources for investment; more liberalized; and have institutions more conducive to private development. Geographically speaking, the distribution of entrepreneurship across China's provinces appears uncorrelated with the "quality" of institutions thought critical for private development.

Figure 3.1: Provincial Distribution of Self-Employment, 2002

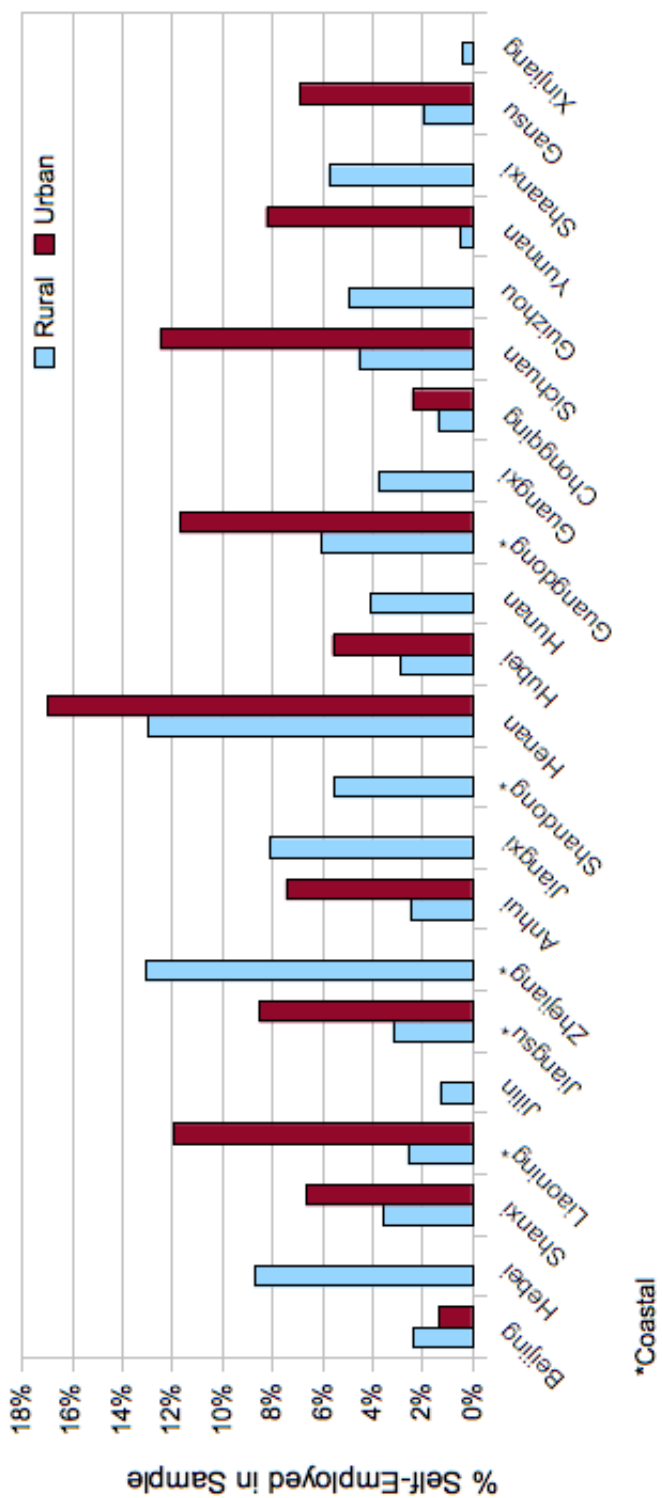


Table 3.1: Demographics of Economically Active Population, By Occupation Group

	Urban		
	Wage Worker	Entrepreneur	
N	9,287	450	
Male	55%	64%	
Married	88%	93%	
Household Head	47%	55%	
Avg Age	40.5	40.3	
Avg Years School	11.5	9.3	
Avg Experience	20.3	17.3	
Happy	57%	42%	
Party Member	34%	8%	
<i>Hukou</i>	98%	91%	
Laid Off	1%	4%	
	Rural		
	Wage Worker	Entrepreneur	Agric. Producer
N	9,234	1,085	13,046
Male	72%	68%	40%
Married	73%	88%	82%
Household Head	48%	52%	27%
Avg Age	36.1	39.1	40.5
Avg Years School	7.8	7.7	6.5
Avg Experience	22.2	25.3	27.6
Happy	63%	71%	59%
Party Member	12%	9%	5%

Source: Author's calculation of CHIPS (2002) data.

### 3.4.1.2 Gender and Household Characteristics of Entrepreneurs

Table 3.1 presents summary statistics comparing groups of workers in urban and rural labor markets. China's entrepreneurs are predominantly male and married, with a majority assuming "head of household" status. In contrast to many other developing countries where women comprise the majority of self-employed entrepreneurs (Pratap and Quintin 2006), in China entrepreneurship is predominantly a male activity. In the urban economy, 56 percent of entrepreneurs were male, while in the rural economy 68 percent were male. The higher share of males in rural entrepreneurship is due perhaps to the fact that women are often relegated to agricultural production—only 40 percent of rural agricultural producers were male, and only 27 percent were "heads of households." Whereas women tend to dominate self-employment in other developing countries, in China the preponderance of males indicates that gender issues are not a factor in segmenting labor markets into entrepreneurship. The data provide little insight into intrahousehold bargaining over labor and asset allocations, but the male predominance in entrepreneurship may belie an important role played by women. Ethnographic and survey research suggests that women play a leading role managing credit relations in the informal financial sector (Tsai 2002).

Large shares of the economically active population were married in both the urban and rural samples, but entrepreneurs were even more likely to be married than wage workers or, in the rural sample, agricultural producers. Marriage may be related to entrepreneurship in several ways. Marriage is associated with larger household sizes, making available a larger supply of unremunerated labor to the entrepreneurial enterprise (similarly, marriage rates are higher for agricultural producers than for wage workers). Marriage and larger households also allow for the household to have more diversified sources of income, thereby reducing the risk of entering entrepreneurship. Finally, marriage may expand the pool of potential resources available for entrepreneurship through informal, intrafamilial credit. As discussed in Section 3.4.3

below, intrafamilial lending is the primary source of credit for both entrepreneurs and non-entrepreneurs alike. In the urban sample, 93 percent of entrepreneurs were married compared to 88 percent of wage workers. In the rural sample, 88 percent of entrepreneurs were married, compared to 73 percent of wage workers and 82 percent of agricultural producers. Entrepreneurs were also somewhat more likely than wage workers or agricultural producers to be designated as “head of household.” The preponderance of household heads in both urban and rural entrepreneurship suggests that entrepreneurship is the household’s primary economic activity, earning the highest expected returns.

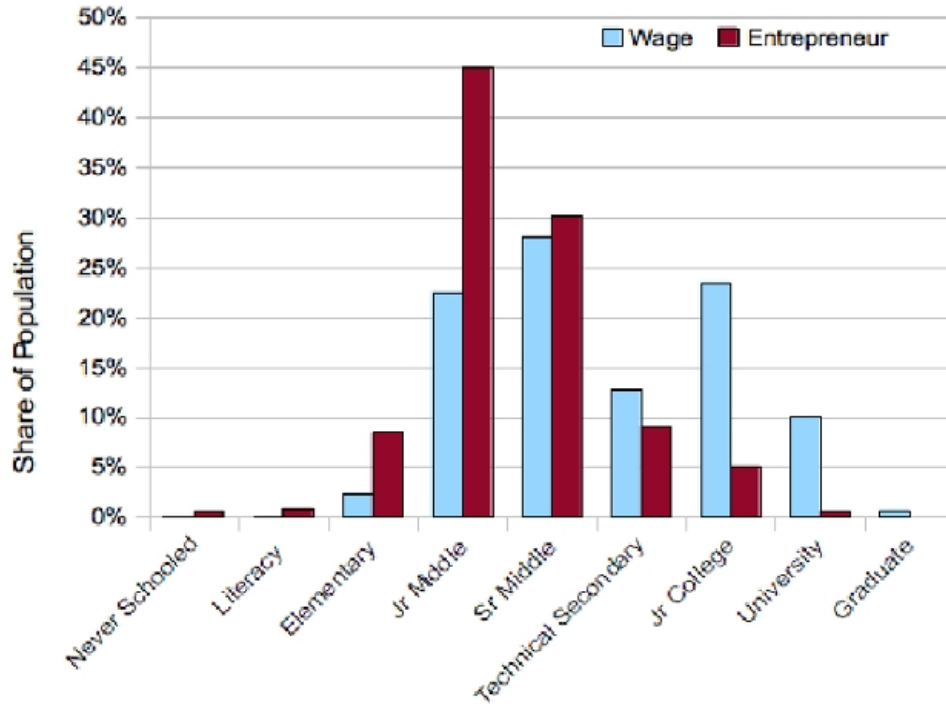
### **3.4.1.3 Human Capital and Entrepreneurial Ability**

Table 3.1 also compares human capital attributes thought related to entrepreneurial ability. Individual attributes reflecting entrepreneurial abilities are not well understood or measured within literature on entrepreneurship. The set of beneficial individual characteristics such as managerial skill and business prowess are difficult to operationally define or to quantify. Typically, empirical research that employs some kind of Mincer-style (1974) human capital measures of education and experience can in part capture entrepreneurial abilities; returns to abilities unobserved by the researcher are assumed explained empirically by disturbances from predicted earnings estimates. Clearly educational attainment cannot distinguish precisely between entrepreneurial endowments and other dimensions of human capital—being educated does not necessarily make one a good entrepreneur, nor is education a necessary condition for entrepreneurial success. Examining educational attainment of entrepreneurs, however, is suggestive of the technological sophistication of entrepreneurs and entrepreneurial enterprises. If entrepreneurs are driving innovation and technological deepening of China’s economic structure, it is reasonable to expect entrepreneurs’ technical capacities to be reflected in higher educational attainment.



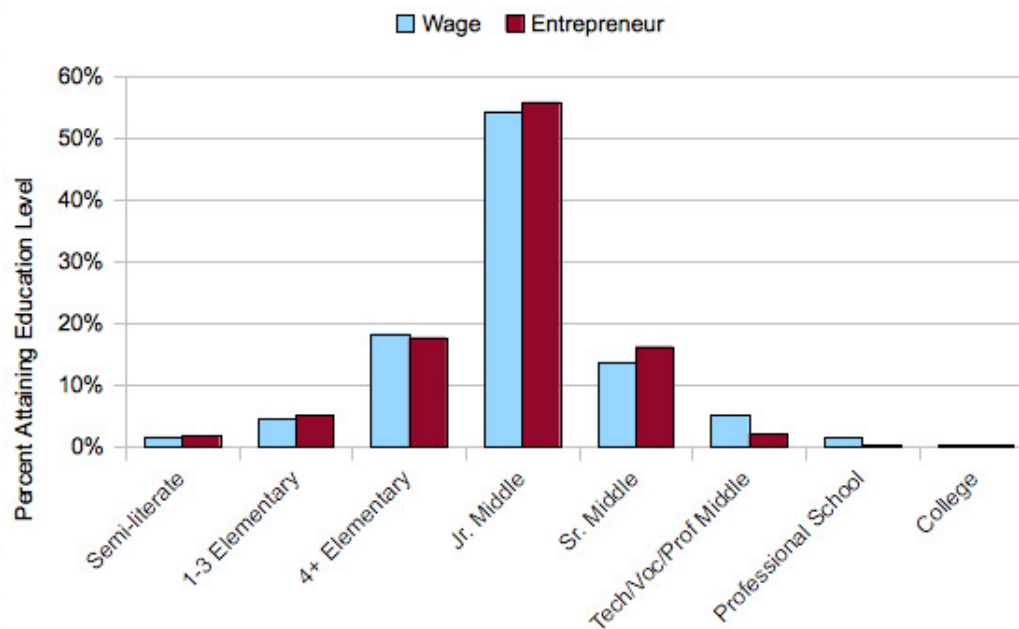
Figure 3.2: Comparison of Educational Attainment

(a) Urban



Source: Author's calculation of CHIPS (2002) data.

(b) Rural



Source: Author's calculation of CHIPS (2002) data.

In the urban economically active population, entrepreneurs' educational attainment was substantially lower than that of wage workers: on average, entrepreneurs had 2.3 fewer years of schooling and 3 fewer years of experience (Table 3.1). Figure 3.2a compares the educational attainment profiles of urban wage workers and entrepreneurs. Entrepreneurs were 3.5 times more likely than wage workers to have attained only an elementary level of education, and twice as likely to have attained only a junior middle school education. Wage workers, however, were 40 percent more likely to complete technical secondary schooling and were 100 percent more likely to have a university degree. No urban entrepreneurs had graduate degrees.

For the rural economically active population, too, entrepreneurs appear no better endowed with educational attainment than wage workers (Figure 3.2b). Though rural entrepreneurs and wage workers had on average completed the same quantity of schooling, entrepreneurs had three more 39 years experience than wage workers, though this result is somewhat misleading. The construction of the experience variable makes it inappropriate to conclude that rural entrepreneurs had significantly higher experience-based human capital than wage workers. The urban CHIPS provides direct data on years of employment (experience), but the rural survey allows only estimation of experience by Mincer's (1974) rule-of-thumb: age minus years of schooling minus six. While rural entrepreneurs had more experience, they were also commensurately older on average. Agricultural producers are older yet, and with more measured experience than either wage workers or entrepreneurs. There is little difference between the two groups in the proportions attaining literacy through middle school education. Although higher educational attainment was low for the rural economically active population as a whole, entrepreneurs were substantially less likely than wage workers to have higher education. The share of entrepreneurs completing technical or vocational schools was less than half that of wage workers; wage

workers were more than four times more likely to complete a professional school than entrepreneurs.

Again, educational attainment is not informative of the set of all characteristics related to entrepreneurial success. The potential to enter entrepreneurship may open opportunities for advancement of individuals despite their lower educational attainment. However educational attainment is suggestive of the technical capacities of entrepreneurs and entrepreneurial enterprises. That educational attainment of entrepreneurs falls short of that of wage workers indicates that entrepreneurial enterprises operate at low levels of technological sophistication.

#### **3.4.1.4 Entrepreneurial Preference**

Clearly, human capital characteristics do not independently determine individual preference for entrepreneurship. Other individual characteristics such as risk preference and even less tangible preferences for or non-monetized rewards from entrepreneurial labor determine an individual's orientation toward (preference ordering) entrepreneurship. The CHIPS provides no direct measure of individual risk preference, though it does offer some perspective on individual optimism and subjective happiness. Entrepreneurs do not appear to be systematically more optimistic about their future economic outlook than wage workers or agricultural producers. Figure 3.3 depicts survey responses about expectations of individual income paths over the following five years. Participants could respond that they expected a rapid increase in income, a small increase in income, unchanged income, or a decreased income. In the urban labor force (Figure 3.3a), wage workers and entrepreneurs are virtually indistinguishable in terms of their expected income outlooks. The majority of both groups anticipated no to small changes in incomes, while in both groups almost eight times as many expected their incomes to decrease than expected rapid income increases. In the rural labor force (Figure 3.3b), the profile of optimism is similarly indistinct

across the wage worker, entrepreneur, and agricultural producer occupation groups (small visible differences are not statistically significant). The rural labor force as a group, however, was considerably more optimistic than the urban labor force: 2.4 times more likely to expect increased incomes and only one-fifth as likely to expect decreased incomes. In neither urban nor rural labor markets do entrepreneurs have systematically different expectations for their future economic prospects.

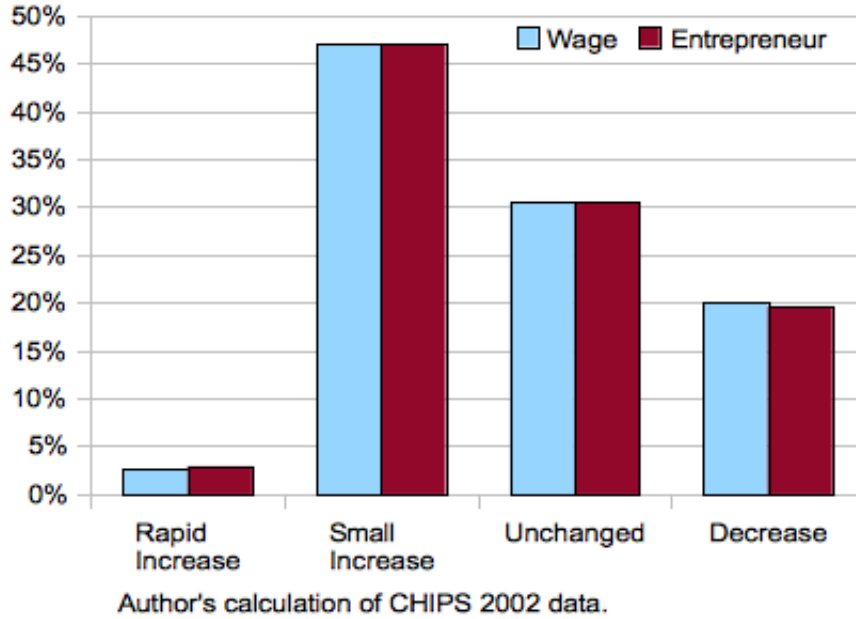
Though measurement of individual subjective well-being is, in economics, an unsettled area of research (Layard 2010), it is fair to postulate that individuals with non-monetary preferences for entrepreneurship or who are relatively more successful in entrepreneurship than in their next best alternative occupational choice would exhibit greater happiness on average.<sup>7</sup> Here, the CHIPS data provide mixed evidence on the relationship of happiness to occupational choice. The survey asked individuals (household heads) about their degree of happiness at present. In the urban sample, only 42 percent of entrepreneurs indicated being “happy” or “very happy,” whereas 57 percent of wage workers were happy. However, the reverse pattern of happiness is apparent in the rural sample: 71 percent of entrepreneurs recorded being “very happy” or “happy,” compared to 63 percent of wage workers and 59 percent of agricultural producers. The generally higher level of reported happiness across occupational groups in the rural sample is surprising, given the the extent of rural-urban inequality in China (Khan and Riskin 2001) and the rate of rural-to-urban out-migration (Zhao 1999; Zhang and Song 2003). Obviously, occupational choice is not the sole determinant of happiness, but the lack of happiness among the urban self-employed is inconsistent with entrepreneurship being a desirable occupational choice.

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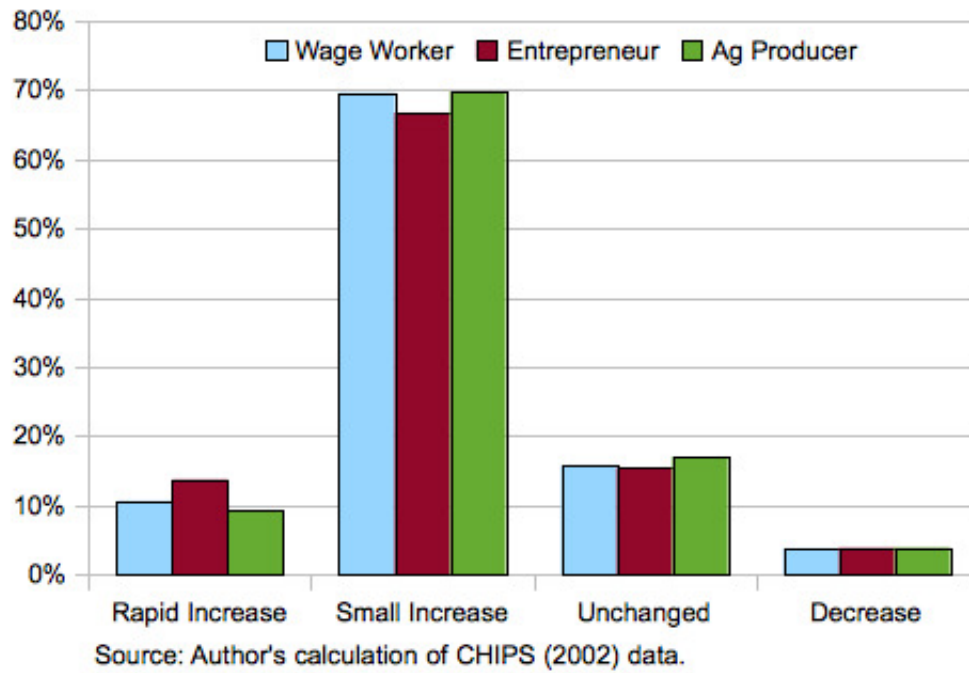
<sup>7</sup>Additionally, individuals with entrepreneurial preference excluded from entrepreneurship by credit constraints or other factors would be expected to have lower happiness on average.

Figure 3.3: Comparison of Income Expectations

(a) Urban



(b) Rural



### 3.4.2 Evidence of Labor Market Segmentation

The above discussion of optimism in income expectations runs contrary to what would be expected if entrepreneurial self-employment offered fertile opportunities for private gain relative to other occupations. The homogeneity of income expectations indicates perhaps that the expected rewards of entering entrepreneurship are in general not matched by the commensurate additional risks of entrepreneurship, signifying entrepreneurship is a less desirable occupational choice. In fact, evidence from the CHIPS urban survey suggests that few people embody strong preferences toward choosing entrepreneurship.

The survey asked subjects about their desire to ever change jobs. Of the 2,896 answering this question, only one percent expressed a desire for wanting to change in order to start their own business.<sup>8</sup> CHIPS respondents were also asked why they had left their previous jobs. Of the entrepreneurs who answered the question, 16 percent indicated leaving to start their own business while 23 percent reported having entered entrepreneurship after being laid off by a previous employer. Thus, for a preponderance of respondents, the path to entrepreneurship was not a voluntary choice.

The evolution of China's aggregate employment situation also suggests involuntary entry to self-employment (Figure 3.4). Total combined employment in China's SOEs and COEs peaked in 1994 at 145 million and began falling precipitously after 1996 to 83 million in 2002. Obviously not all of the workers displaced from SOEs and COEs were pressed into self-employment as some found new wage employment in non-state-owned firms, but the rise of both urban and rural self-employment nonetheless mirrored the decline in SOE and COE employment. In 1994, urban self-employment stood at 10 million and rural self-employment stood at 26 million. Urban

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<sup>8</sup>The most often cited reason for not changing was due to a "lack of skills or funds."

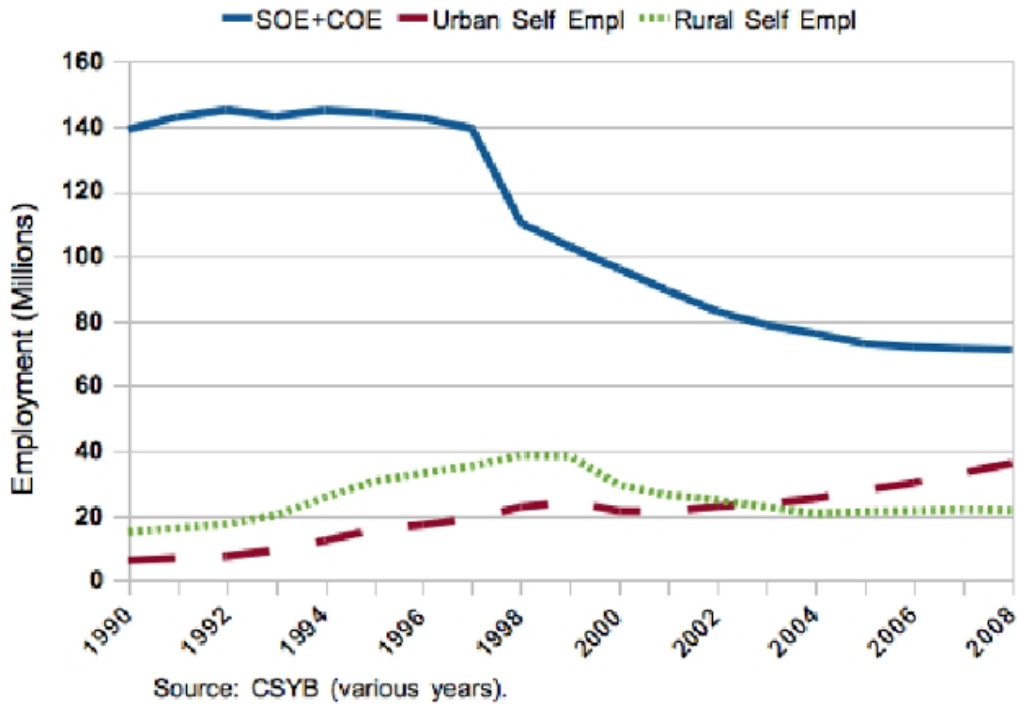
self-employment followed a steady rise to 26 million in 2002, reaching 36 million in 2008 as SOE and COE employment fell to 71 million. Rural self-employment peaked at just over 38 million in 1998 and 1999, but as costs of internal migration fell many (presumably less successful) rural self-employed shifted into other occupations, leaving rural self-employment to hold steady at approximately 22 million in the latter 2000s.

If income expectations for entrepreneurs are no better than in other occupations and if entrepreneurship is as undesirable as the evidence suggests, then those opting for entrepreneurial self-employment may be facing a constrained opportunity set. Gender, a common dimension of labor market segmentation in many countries, does not appear to characterize China's entrepreneurs. But the comparison in Table 3.1 does suggest other factors associated with entrepreneurship or, more importantly, exclusion from formal wage employment. These factors are *hukou* (or household registration) status, Communist Party membership, and layoffs from a previous job.

#### **3.4.2.1 Effects of *Hukou* Status**

As seen in Table 3.1 above, urban entrepreneurs differ from wage workers in terms of their *hukou* status. *Hukou* is China's household (labor) registration system—akin almost to an internal passport—which determines legal access to formal employment as well as housing, school, health, and other social services. Changing *hukou* is less restrictive than once was the case, and migrants may obtain urban *hukou* through a costly and lengthy bureaucratic process or after enrollment in higher education in the urban district (Rawski 2003). Still, many are unable to obtain formal registration and are restricted to less desirable economic activities with less access to social goods. The wave of rural-to-urban migrants constitute a massive reallocation of labor from low-productivity agricultural to higher-productivity modern sector employment, much as described in Lewis's (1954) classical development model. As migrants, these

Figure 3.4: State-Owned Enterprise, Collective-Owned Enterprise, and Self-Employment



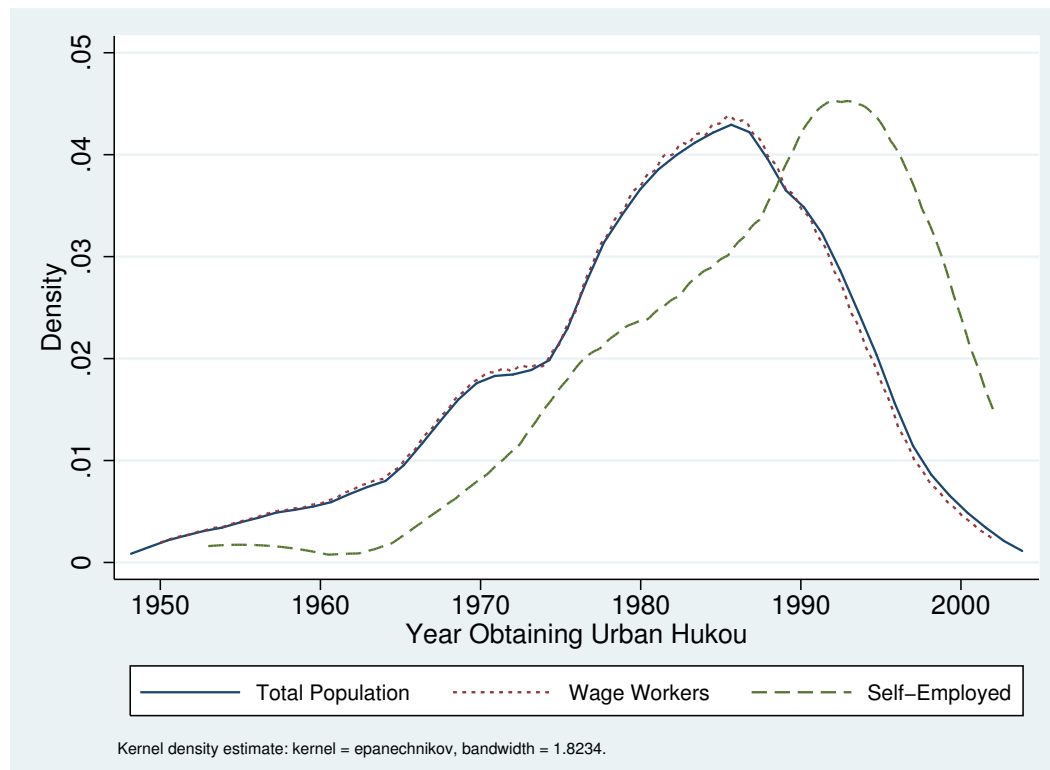
individuals entered in overlapping, but distinct labor markets from those with urban hukou; analytically, this means that urban migrant entrepreneurs may make reference to a different reservation wage, namely their fall-back employment position in the rural labor market.

Workers in the urban labor market without urban *hukou* or those obtaining it in the recent past are predominantly rural migrants to the city. Not only are wage workers almost ten percentage points more likely to hold urban *hukou* status, but also those entrepreneurs with urban *hukou* are on average more recent urban migrants, obtaining their urban *hukou* much later than the population of urban wage workers. Figure 3.5 fits kernel density estimates of the year individuals first obtained urban *hukou*. The mean wage worker obtained urban *hukou* in 1981 compared to the mean entrepreneur who obtained *hukou* in 1986, although the peak frequency for each group occurred in 1985 and 1993 respectively.



At the time of the survey, ten percent of entrepreneurs had hukou in some locale other than their current residence compared to only one percent of wage workers who did not have resident urban *hukou*. The fact that entrepreneurs tended to obtain urban *hukou* later than individuals in wage employment suggests that, as a group, individuals joining the ranks of urban entrepreneurs are more likely to be migrants from rural areas who face greater social marginalization, including the ability to access formal sector employment.<sup>9</sup> These results are consistent with earlier findings on job mobility in China's urban labor markets that show the job mobility of rural-to-urban workers greatly exceeding that of urban residents and that urban residents receive preferences and protection for formal sector employment (Knight and Song 1999; Knight and Yueh 2003).

Figure 3.5: Entrepreneurs and Urban Hukou Attainment



<sup>9</sup>*Hukou* status also affects access to social services, schooling, and other welfare benefits.

### 3.4.2.2 Party Membership and Employment Dislocation

Although the Communist Party began extending membership to private businessmen in 2001, party membership is more associated with wage work than with entrepreneurship. In the urban economy, 34 percent of wage workers are Communist Party members compared to only eight percent of entrepreneurs (Table 3.1). Though the rural economy registered lower membership rates overall, more wage workers than entrepreneurs were party members. The higher membership rates in wage work do not reflect institutional biases against private sector entrepreneurs so much as they do the fact that membership is related to accessing higher wage, higher benefit employment in state-owned enterprise (Chen, et al. 2003).

Acceleration of SOE and TVE privatization in the latter 1990s dislocated millions of workers from employment. Only 29 percent of people dislocated from SOE employment found reemployment within one year (Giles, et al. 2005). The unemployed and recently laid off have experienced decreasing rates of re-employment through the 1990s and are relegated to what Fang and Wang (2004) call “irregular employment,” including entrepreneurship. In the urban labor force, only 1.3 percent of wage workers had experienced a layoff from their prior job; three times as many entrepreneurs, 4 percent, reported being laid off from their last job.

### 3.4.2.3 Timing of Entrepreneurial Market Entry

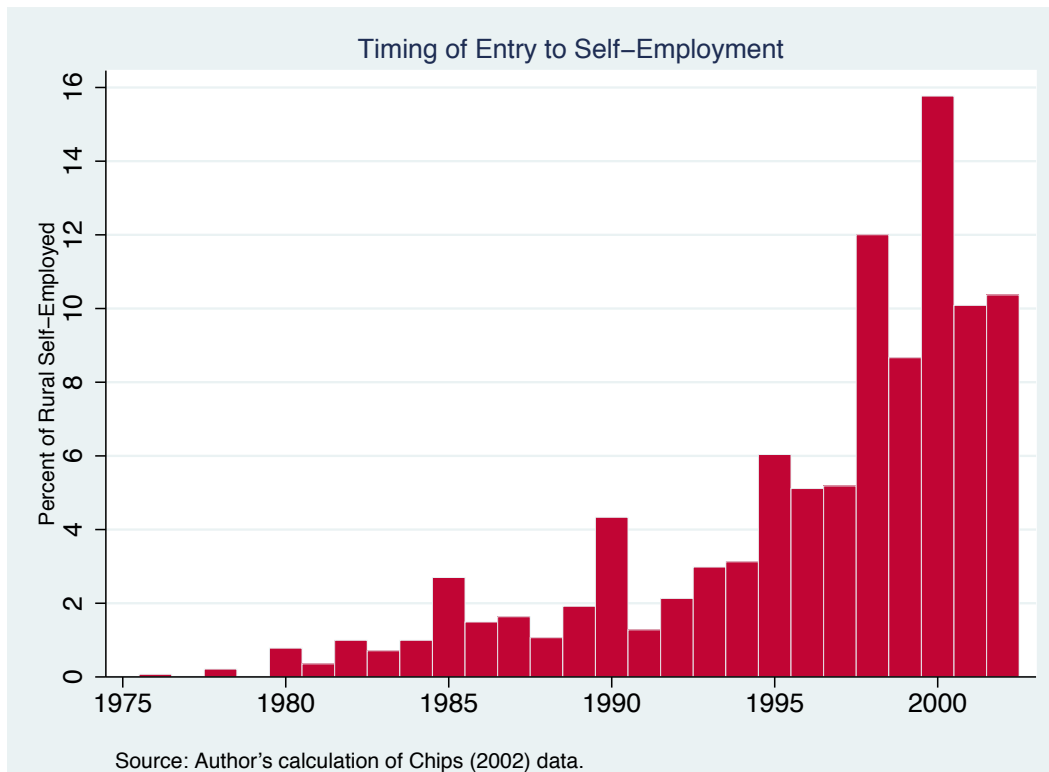
Given the trajectory of reform and economic growth in China’s transition from central planning, the timing of entry to entrepreneurial self-employment offers critical information about the institutional and macroeconomic factors affecting the choice of entrepreneurship. The fact that more than 73 percent of rural entrepreneurs entered in or after 1995 (Figure 3.6) points to several different explanations.<sup>10</sup> First, although

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<sup>10</sup>The survey only observes surviving entrepreneurial enterprises, excluding those who exited entrepreneurship prior to the 2002 survey, returning to wage work, agricultural production, or exiting the labor force entirely. Sample selection is thus biased in favor of successful entrepreneurs.

early economic reforms beginning in 1979 opened opportunities for self-employment, it is possible that relatively few individuals entered entrepreneurship until much later, when a series of new laws in the 1990s strengthened protections for private property rights and contract enforcement. Second, alternatively, it is possible that early entrants exited entrepreneurship by the time of the 2002 survey through a healthy creative-destruction process wherein the relatively more productive firms survived. Third, widespread privatization of SOEs and TVEs beginning in the mid-1990s led to dis-employment at a faster rate than job creation in other sectors of the economy, thus pressing employment-constrained individuals into self-employment.

Figure 3.6: Year of Entry, Rural Entrepreneurs



Although the data do not allow definitive evaluation of these hypothesized explanations, interpretation of the cycles of entry in Figure 3.6 can shed some light on the underlying causes. Following an inflationary episode and related political crisis in 1988 and 1989, the policy environment initially turned markedly against the private

sector, as some leaders laid blame for the crisis on reforms on liberalization that went too far and moved too fast. A central government-imposed anti-inflationary austerity policy aimed to “starve the beast” of the private sector as well as of collective TVEs, competition from which was perceived crippling SOEs (Huang 1996). Real GDP growth rates fell from double digits to just 4 percent in 1989 and 1990—not a particularly auspicious environment in which to elect voluntarily to pursue entrepreneurship. Only following Deng Xiaoping’s famous “Southern Tour” in the spring of 1992 to consolidate a political base for a renewed economic liberalization agenda did the environment for the private sector improve (Meisner 1996; Marti 2002).

Note the spike in self-employed entries in 1990.<sup>11</sup> It is unlikely that in this hostile environment self-employment entrants would be enticed by optimistic prospects for private sector growth, rather than pressured into self-employment due to economic hardship. The resumption of high growth in 1991 and 1992, followed by an improved policy environment after Deng’s southern tour, likely helped this 1990 cohort of entrepreneurs survive (and hence we observe them in the survey). But the resumption of growth and rekindling of liberalization did not entice individuals to enter entrepreneurship at any higher rates, and substantially less so in the early 1990s than in 1990 itself. The institutional environment for the private sector improved in steps throughout the 1990s, first in 1993 with implementation of the Company Law (NPC 1993). But the Company Law primarily afforded benefits to foreign invested enterprises in an effort to attract foreign direct investment. Domestic entrepreneurs did not receive similar protections until implementation of the 15th National Congress guidelines in 1997.

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<sup>11</sup>The spike could also result if entrants in neighboring years failed at a higher rate than those entrants in 1990, although there is little evidence to suggest why this would be the case for the years immediately before and after 1990.

Self-employment entries began spiking up again in 1995-1997 following implementation of the “Employment Law” in 1995. The law afforded SOE managers the authority to lay off “redundant” workers and to dissociate provision of social welfare services (housing, health care, pensions, etc.) from the employment relationship (Rawski 2003; Brooks and Tao 2003). As SOEs began laying off workers, privatization of SOEs (especially smaller ones controlled by county governments) and collectively-owned TVEs in the mid-1990s also led to substantial dis-employment. Employment in TVEs fell from 135 million in 1996 to 128 million by 2000; nationally, employment in SOEs fell from 112 million in 1996 to 81 million by 2000 and again to 72 million by 2002 (CSYB). The dis-employment effects of privatization and labor market reforms seem to fit the pattern of self-employment entry more closely than does the punctuated timing of the legal reforms affecting private property rights and entrepreneurship.

While the descriptive analyses offered here cannot account for the importance of varying factors influencing different individuals’ decisions to enter entrepreneurship, the evidence indicates that household registration status, party membership, and layoffs from formal sector employment are strongly associated with the choice of entrepreneurship. In other words, sociopolitical factors and economic conditions exogenous to the individual—and not just individual abilities, preferences, and wealth endowments—matter for the choice of entrepreneurship. Though strengthened protections for property rights and other institutional reforms presumably improved the environment for private sector development, situating the timing of entry within the institutional and historical context—along with other evidence of labor market segmentation—suggests that institutions were not a binding constraint on entrepreneurship.

### 3.4.3 Wealth and Credit Relations

Even small-scale entrepreneurial projects often require resources in excess of the individual entrepreneur, necessitating external finance. The institutions governing credit relations therefore play a pivotal role in the supply of entrepreneurship, mediating who gains access to external finance and the scale of projects. In neoclassical theory, efficient financial institutions evaluate the quality of potential projects, channel resources to the good ones, and then monitor and discipline entrepreneurs to ensure investment performance. But even where institutions governing property rights and credit relations are strong, asymmetric information and incomplete contracting will lead to credit rationing as a function of wealth. As a result, entrepreneurs would be expected to have higher wealth than non-entrepreneurs. Additionally, it is commonly held that China's private sector faces constraints to accessing credit in the formal financial system, dominated by government-owned banks, owing to institutional political biases against private enterprises. Although private, individual-owned, and self-employed businesses received only 1.2 percent of total bank credit in 2006, the quantity of bank credit to the private sector more than doubled from 0.5 percent in the decade since 1997.

Despite the perception of political bias against the private sector, the exclusion of some private entrepreneurs from accessing credit in the formal financial sector reflects credit rationing based on the size of the enterprise or the entrepreneur's wealth endowment, as is the experience in many other countries, including those with highly developed financial systems. There are only minor differences between entrepreneurial, wage working, and agricultural households in perceptions of and access to external financing. Most households do access credit from formal and informal sources for a variety of uses, including for entrepreneurial investment, but the evidence is that external finance is constrained by wealth in both the formal and informal financial sectors. And while political bias in lending to the private sector is not evident, it

is evident that political relations between private entrepreneurs and party and state institutions are associated with privileged access to financial resources.

#### **3.4.3.1 Perceived Credit Access**

First, it is worth considering individual self-perceptions about the ability to access external credit. Survey respondents were asked, if they needed a quantity of funds immediately, how they could raise the sum. Overall, entrepreneurs' perceptions of their ability to raise funds were quite similar to those of other occupation groups. Both urban wage workers and entrepreneurs saw their extended family as the primary source for raising funds (61 and 66 percent, respectively), followed by own savings and borrowing from friends (Table 3.2a). The fact that urban wage workers were 3.3 percentage points more likely to draw on personal savings as a source of funds suggests that entrepreneurs on average may have a lower saving rate than wage workers. Urban entrepreneurs were slightly more likely than wage workers (4 percent versus 3 percent) to perceive an ability to raise funds through borrowing from banks or credit unions. Thus, to the extent the formal banking system imposes lending constraints, the survey responses reflect a perception that these constraints are not premised on institutional biases against private enterprise. Few respondents from either occupational group would rely on informal financial mechanisms (beyond family and friends) from "other individuals" or "other financial institutions."

In the rural economy, family and friends were the leading source of credit for wage workers and agricultural producers (Table 3.2b). Though 45.6 percent of rural entrepreneurs also reported family and friends as an important source of credit, the majority (46.4 percent) indicated they would rely on own savings to meet immediate needs—far fewer wage workers (34.3 percent) or agricultural producers (27.4 percent) could rely on their own savings. In contrast to the urban survey responses, rural wage workers and agricultural producers (8.7 and 12 percent respectively) were

more likely than entrepreneurs (5.4 percent) to perceive an ability to access bank or credit union financing. The difference does not necessarily indicate that rural entrepreneurs face discrimination in accessing bank credit—the substantial number of rural entrepreneurs able to draw on their own savings means that fewer needed to rely on borrowing from banks. Two key points about credit access emerge from this analysis. First, there is no clear distinction or bias obvious in obtaining credit between entrepreneurs and other occupations. Second, even at these relatively small quantities, few would rely on extra-familial informal finance.

Table 3.2: Subjective Perception of Credit Access

(a) Urban

	Wage Worker	Entrepreneur
Family	61.1%	65.5%
Friend	8.3	9.6
Draw from Bank Savings	18.2	14.9
Bank/Credit Union	3.0	4.0
Other Individuals	0.2	0.2
Work Unit	1.4	0.0
Other Financial Institution	0.1	0.0
From Anywhere	7.1	4.9
Other	0.5	0.9

(b) Rural

	Wage Worker	Entrepreneur	Agric. Producer
Relatives or Friends	51.8%	45.6%	55.0%
Draw from Bank Savings	34.3	46.4	27.4
Bank/Credit Union	8.7	5.4	12.0
Private Credit Institutions	0.4	0.5	0.4
Take “Other Measures”	2.8	1.2	2.9
No Means	1.9	0.9	2.3

\* “If you need 10,000 (5,000 rural) yuan immediately, how can you raise it?”



### 3.4.3.2 Wealth and Assets

Table 3.3: Average Wealth and Asset Endowments

(a) Urban

	Wage Worker	Entrepreneur
Total Assets (yuan)	144,565	142,798
House Assets	87,870	70,112
Financial Assets	40,938	50,543
Productive Assets	2,061	10,037
Durable Goods	9,776	7,601
Investment in Enterprise	557	710
Money Lent	1,421	1,574
Other Assets	1,942	2,221

(b) Rural

	Wage Worker	Entrepreneur	Agric. Producer
Total Monetized Assets (yuan)	37,854	63,208	33,348
House Value	24,089	34,094	19,889
Financial Assets	6,957	11,336	6,456
Productive Assets	3,520	11,789	4,361
Non-agricultural	1,745	10,032	1,983
Durable Goods	3,288	5,990	2,643
Land Holdings ( <i>Mu</i> )	7.3	5.9	8.8

If credit constraints restrict the supply of entrepreneurship, entrepreneurs could be expected to have larger wealth endowments than other occupational groups. On average, there is little difference in the wealth endowments of urban wage worker households and urban entrepreneur households, although the composition of their average asset portfolio reveals somewhat different allocation decisions (Table 3.3a). Wage worker households held an average of 144,565 yuan in assets at year-end 2002, compared with 142,798 yuan in assets for entrepreneur households. Overall, the largest asset classes for both groups were housing and financial assets (encompassing money, bank deposits, insurance policies, stocks, bonds, etc.), with wage workers tending to hold nearly 18,000 yuan more wealth in housing and entrepreneurs tending to hold almost 10,000 yuan more in financial assets.

Unsurprisingly, entrepreneurs held substantially more fixed productive assets, almost five times as much as wage workers at 10,037 yuan. And wage workers held over 2,100 yuan more durable goods than entrepreneurs, reflecting perhaps a relatively higher preference for consumption over saving and investment for wage workers. Finally, although small in the overall asset portfolio, on average both wage workers and entrepreneurs engaged directly in informal finance on a non-trivial scale. “Investment in enterprise” indicates a direct equity interest in an enterprise not accounted in household financial assets, and “money lent” indicates informal lending regarded as a household asset (though we have no information as to the “quality” of these loan assets). With average investments in enterprises of 557 yuan for wage workers and 710 yuan for entrepreneurs, and 1,421 yuan and 1,574 yuan respectively of lending assets, it is unlikely that such informal financing was building even moderate scale or capital-intensive enterprises. The quantities involved are modest relative to per capita disposable income for urban households—just over one week’s worth of disposable income in direct enterprise investment and about 2.5-2.8 week’s income in informal lending. Extrapolating to the urban population, urban households held approximately 82.2 billion yuan in investments in enterprises and 208.3 billion yuan in lending in 2002. This total stock of informal lending assets amounts to almost 4.5 percent of gross national investment in 2002. These multitudinous informal loans do amount to a substantial aggregate sum, but each individual loan is of such small scale as to be relevant for financing dynamic entrepreneurial investments.

Rural entrepreneurial households (Table 3.3b), in contrast, are on average substantially wealthier than their wage work or agricultural counterparts across all asset classes. Entrepreneurs’ wealth averaged 63,208 yuan, compared to 33,348 yuan for agricultural producer households and 37,854 yuan for wage work households. The average rural entrepreneur is also much less wealthy than urban entrepreneurs. With credit rationing, wealth is expected to be positively associated with access to ex-

ternal finance, and thus larger scale entrepreneurial projects. But although urban entrepreneurs held two and one-quarter times the wealth of rural entrepreneurs, the two are virtually identical in their capital stock of productive assets: 10,037 yuan for the urban and 10,032 (non-agricultural) for the rural households. So, greater credit access paradoxically appears unrelated to scale of production.

### **3.4.3.3 Debt and Sources of Credit**

Urban households differ little by occupation in their overall quantity of debt, as seen in Table 3.4a. At 39,109 yuan, wage worker households held over nine percent more debt than did entrepreneur households, however the composition of debt differed considerably. While wage worker households held 62 percent of their overall debt from building or purchasing a house, entrepreneurs' housing debt makes up only 31 percent of total household debt. Both groups appear to have similar access to credit, but entrepreneurs choose to allocate more of their available credit (36 percent) to their business. The two liability categories, housing debt and business debt, sum to the same total share for both occupation groups, but the composition shows that entrepreneurs access a similar quantity of credit though choose to use credit to accumulate productive assets as well as housing assets. Entrepreneurial households also demonstrated less preference than wage households to borrow for consumption of durable goods and weddings, but more preference to borrow for education investment.

For rural households, we have data on the sources of credit as well as the uses of household debt (Table 3.4b). Rural entrepreneurs, consistent with their higher household wealth, at an average of 11,814 yuan also have higher debts than wage workers (5,641 yuan) or agricultural households (5,371 yuan). Like with urban entrepreneurs, rural entrepreneurs also incurred less debt for housing investment, 12 percent of total debt, than did non-entrepreneurial households. Instead, entrepreneurial households borrowed much more for production purposes, a category inclusive of both agricul-

Table 3.4: Average Household Debt and Composition

## (a) Urban Households

	Wage Worker		Entrepreneur	
	Average	Share	Average	Share
% Households w/ Debt	15%		19%	
Avg Total Debt (2002)	39,109	100%	35,826	100%
Building/Purchasing Home	31,782	62	15,986	31
For Business	2,112	5	12,629	36
Durable Goods	345	3	200	1
Medical	1,035	7	814	6
Family Hardship	480	5	429	6
Education	1,152	10	1,110	14
Wedding	846	7	611	3

## (b) Rural Households

	Wage Worker		Entrepreneur		Agric. Producer	
	Average	Share	Average	Share	Average	Share
% Households w/ Debt	23%		18%		23%	
Avg Total Debt (2002)	5,641	100%	11,814	100%	5,371	100%
Uses						
Home Ownership	1,742	17%	1,249	12%	1,351	14%
Production Loan	640	13	6,492	26	735	16
Durable Goods	24	1	196	2	30	1
Wedding/Funeral	168	4	197	4	216	4
Medical	189	5	203	3	153	4
Family Hardship	150	7	188	6	185	7
Migration	13	1	0	0	14	1
Other	1,393	28	1,214	20	1,277	27
Sources						
Bank or Credit Union	1309	23%	4,942	23%	1,563	25%
Collective/Work Unit	93	6	138	4	71	5
Private Individuals	4165	70	6,624	68	3,667	68

\*Note: Composition shares are calculated as an average of debt shares at the individual household level. The average shares may not correspond to the average levels of each liability class, nor sum to 100 percent.

tural loans as well as business investment: 26 percent of total debt compared to 13 percent and 16 percent respectively for wage and agricultural households. All the occupation groups appear similar regarding preferences to incur debt for consumption of durable goods (1-2 percent of total debt), weddings (4 percent), family hardships (6-7 percent), and migration costs (0-1 percent).

Rural households also appear remarkably similar in their ability to access various sources of credit. Entrepreneurial households did not fare any worse than wage households in accessing formal bank credit, which amounted to 23 percent of total debt for both. Agricultural households had a slightly higher share from banks as a source of credit at 27 percent, likely owing to special lending programs to support farm activities. For all three groups, though, borrowing from private individuals supplied the overwhelming source of household credit: 70 percent of all debt for wage households, and 68 percent for entrepreneurial and agricultural households. What is clear from the similar debt source profiles is that, however efficient the rural financial institutions, all groups enjoy roughly equal, unbiased access to formal and informal financing. Even though entrepreneurial households had higher average wealth endowments than other households, the additional wealth did not change the shares of credit sourced from different financial channels. It is possible that the greater wealth did relax the bank lending constraint for entrepreneurial households, but more probable is that the wealth difference between entrepreneurs and others is not substantial enough to attenuate the incomplete credit contracting problems that lead to credit rationing. As a result, informal finance is by far the most important source of household credit for all occupation groups. Does access to different sources of credit affect the supply of entrepreneurship? That the three occupation groups receive essentially equal access to credit from banks, work units, and informal private borrowing indicates that the choice to enter entrepreneurial self-employment is driven by factors other than the ability to access external credit.

What does seem to matter for credit access is enterprise size. Table 3.5 examines how sources of credit vary by size of initial investment for entrepreneur's accessing external finance. The top panel summarizes credit access for rural entrepreneurs with initial investments exceeding 50,000 yuan (US\$6,038 at the official exchange rate) and the bottom panel summarizes those with less than 50,000 yuan initial investment. Depending on the source of credit, the median large entrepreneur made an initial capital investment ranging from 58,300 to 94,500 yuan, borrowing 42,500 to 60,000 yuan. The median small entrepreneur made initial investments ranging from 4,950 to 10,930 yuan and borrowed 3,000 to 6,815 yuan. For both large and small entrepreneurs private (informal) loans were the primary source of entrepreneurial credit. However with 60 percent of large enterprises and 80 percent of small enterprises receiving private loans, informal financial channels were much more important for smaller scale entrepreneurs. And though private loans were the most frequent financial channel accessed by both groups of entrepreneurs, private loans provided the lowest median quantity of borrowed capital for both groups.

Large scale entrepreneurs were twice as likely as small ones to access financing from banks or credit unions, with 30 percent of large entrepreneurs receiving bank credit compared to 15 percent of small ones. Even for small entrepreneurs, size matters for access to bank finance. The median small entrepreneur obtaining bank or credit union financing made an initial investment almost twice as large as those entrepreneurs receiving a private non-bank loan and more than double those receiving a rural credit cooperative loan or other external finance. Small entrepreneurs with access to bank loans could borrow more than twice as much capital as those accessing other forms of finance.

Huang (2008) emphasizes that rural credit cooperatives underwent early financial liberalization and were able to supply efficient and ample resources to burgeoning rural entrepreneurs. But the CHIPs data show that few entrepreneurs of large or

small scale relied on financing from rural credit cooperatives. Only 4 percent of large entrepreneurs and 3 percent of small ones relied on financing from the credit cooperatives. Remarkable for larger entrepreneurs is how much more leverage they could use with credit cooperative financing. With financing sourced from the credit cooperatives, entrepreneurs needed only post 15 percent equity compared to 41 to 50 percent initial equity when using informal private loans or bank credit. Ostensibly cooperatively governed, rural credit cooperatives ultimately fell under the authority of local township and village officials and thus could be marshaled to serve local industrial development policies. That larger entrepreneurs could access credit cooperative finance with such a low level of initial equity indicates that there is some deeper social or economic linkages between these entrepreneurs and local officials than merely an arms-length lender-borrower relationship.

Table 3.5: Rural Self-Employed with External Credit: Usage and Sources

	% Receiving	Initial Investment	Borrowed	% Equity
Credit Source		(Median)		
If Initial Investment > Y50,000				
Bank or Credit Union	30%	94,500	47,150	50%
Rural Credit Cooperative	4	58,300	49,650	15
Private Loan	60	79,600	32,500	41
Other	6	95,200	60,000	40
If Initial Investment < Y50,000				
Bank or Credit Union	15%	10,930	6,815	33%
Rural Credit Cooperative	3	5,000	3,140	33
Private Loan	80	6,000	3,000	50
Other	2	4,950	3,000	40

Source: Author's calculation of CHIPS (2002) data.

### 3.4.3.4 Party-State Networks and Finance

One group of entrepreneurs with little trouble accessing formal bank credit comprises those with political connections. Li, et al. (2006) find that Communist Party

membership is associated with access to bank credit and other key resources for private entrepreneurs, and Meng (2007) finds that party membership was associated with faster wealth accumulation from 1995 to 2002. Other personal relations and institutional connections with the state or Communist Party appear beneficial to accessing external credit and other benefits for private entrepreneurship. as well Table 3.6 analyzes the effects of various political relations on the size of initial capital investment in and the amount of external borrowing for (rural) entrepreneurs' projects. Individuals who were Communist Party members had an average initial investment of 12,480 yuan and borrowed an average of 13,326 yuan compared to 11,473 yuan invested and 7,209 yuan borrowed for non-members. Entrepreneurs who had previously been TVE managers—that is to say, had close relations with local government officials—had average initial investments of 23,050 yuan and initial borrowing of 15,238 yuan, while those who were not had less than half the size of initial investments and borrowing.

In all the cases, political relations are associated with being able to borrow at higher leverage rates. Party members had an average of only 28 percent initial equity stake in their entrepreneurial investment whereas non-members had 37 percent average equity stake; former TVE managers had initial equity of 34 percent compared to non-managers who had initial equity of 37 percent. The pattern is the same for former local cadres and military members as well. What is interesting is that these latter two groups, although they had slightly lower initial capital investments on average than those without such political relations, could still borrow with much higher leverage. Local cadres had a 24 percent equity stake in the initial investment and former PLA members had only a 14 percent initial equity stake, compared to 38 and 37 percent for entrepreneurs without similar relations.



Table 3.6: Effect of Political Relations on Entrepreneurs' Credit

Real 2002 yuan	Initial Investment	Initial Borrowing	Initial Equity
Party Member	18,499	13,326	28%
Not Member	11,473	7,209	37
Been TVE Manager	23,050	15,238	34
Have Not	11,268	7,147	37
Been Local Cadre	11,980	9,098	24
Have Not	12,108	7,555	38
Served in PLA (Military)	11,762	10,160	14
Have Not	12,105	7,652	37

Source: Author's calculation of CHIPS (2002) data.

### 3.4.4 Characteristics of Entrepreneurial Enterprises

China's entrepreneurial enterprises are predominantly small in scale and concentrated in low-productivity, labor-intensive service sector activities. A vast majority of entrepreneurs enter the market with very low levels of initial capital investment, and the size of the initial investment for most firms has changed little over time, even as China has become more wealthy and the institutional environment for private entrepreneurship has improved markedly. Although the small scale of China's entrepreneurs may be due to external borrowing constraints faced in both the formal and informal finance, the size of initial investments does not increase over time as the institutional environment for private entrepreneurs improved. Moreover, low rates of capital accumulation in entrepreneurial enterprises indicate that robust opportunities for growth are not driving the move into entrepreneurship.

#### 3.4.4.1 Sectoral Distribution of Enterprises

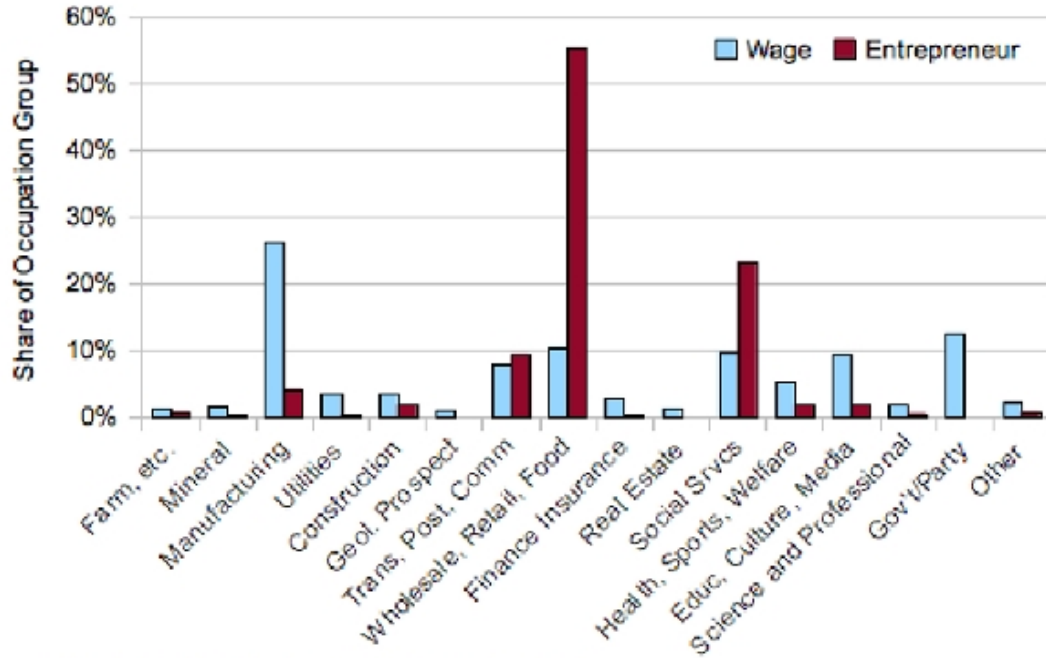
Early reforms opened to entrepreneurship select economic sectors such as retail and wholesale trade, food services, and shipping and transportation—areas of the economy long underserved by central economic planning. Expansion of the service sector in the early years of development most certainly yielded significant growth and welfare gains as labor and capital were reallocated to this underdeveloped sector.

It is likely much of these economic gains from resource reallocation were one-shot. Productivity growth in the service sector is difficult to measure, although most service sector activities exhibit lower productivity growth rates than do manufacturing and other capital-intensive industrial activities (Bosworth and Triplett 2000). Lower capital and skill needs make for lower barriers to entry to the service sector, meaning competitive pressures are higher and therefore profit opportunities lower beyond the short term. Additionally, many of these service sector activities are non-tradable, non-import-competing, thus lacking the disciplining effect of external market competition on productivity and quality. Over time, entrepreneurs could also move into manufacturing and other heavy, more capital-intensive industries. This was particularly true for the rural economy where, in many locales, officials were ahead of the curve in privatizing village- or production brigade-scale collective industrial enterprises (Chan, et al. 1992; Wu 2005).

As a result, the sectoral distribution of urban entrepreneurs is skewed much more heavily toward the service sector than is the case for rural entrepreneurs (Figures 3.7a and 3.7b). Whereas two-thirds of rural entrepreneurs operated in service sector industries, over 92 percent of urban entrepreneurs did. The majority of urban entrepreneurs (55 percent) were in labor-intensive industries of wholesale and retail trade and food service, sectors that require low levels of capital and skill and which thus have low barriers to entry and profit opportunities that can be rapidly competed away. The second largest concentration of urban entrepreneurs (23 percent) was in the “social services” industry, which encompasses a range of service industries from care-giving to tourism and more. Nine percent of urban entrepreneurs were engaged in transportation and communication industries, while only four percent were engaged in manufacturing, of either labor- or capital-intensive industries.

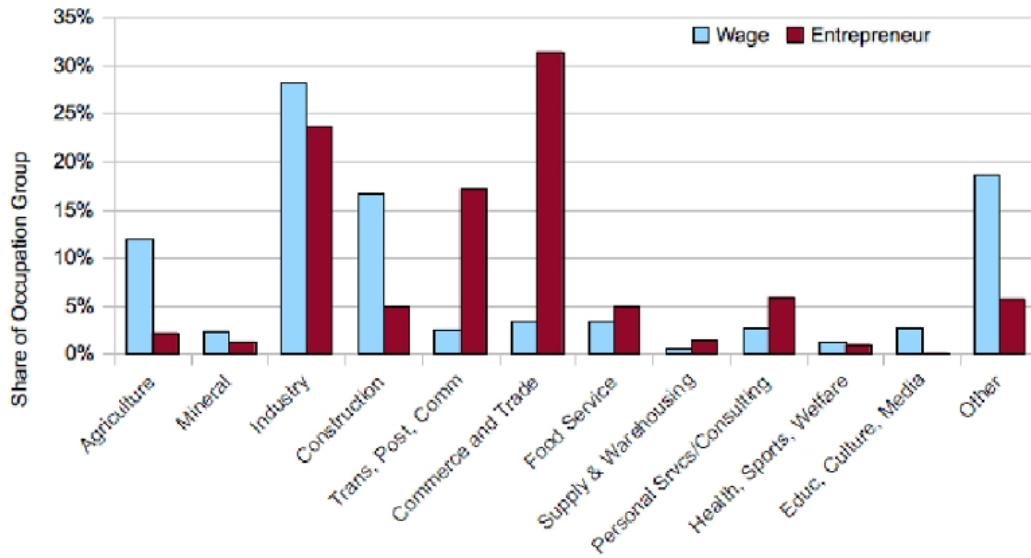
Figure 3.7: Sectoral Distribution of Workers

(a) Sectoral Distribution of Workers, Urban



Source: Author's calculation of CHIPS (2002) data.

(b) Sectoral Distribution of Workers, Rural



Source: Author's calculation of CHIPS (2002) data.

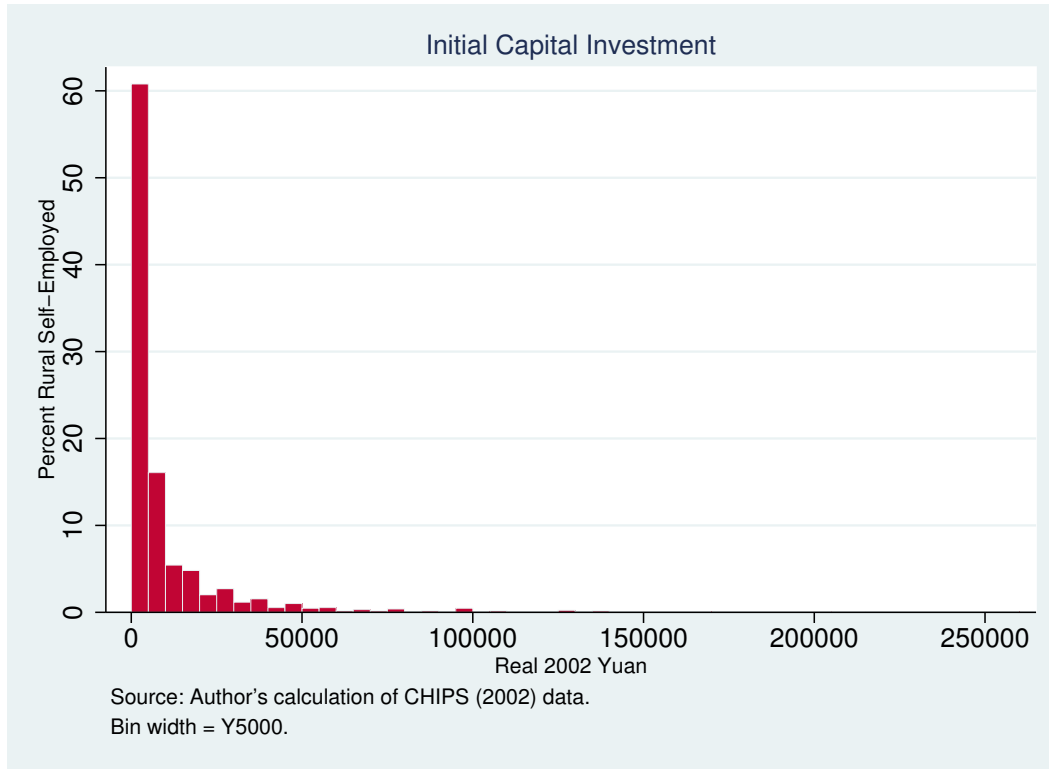
For rural entrepreneurs, too, the largest concentrations were in wholesale and retail trade (31 percent) and food service (5 percent). However, a much larger concentration of rural entrepreneurs, just under one-fourth, were engaged in “industry,” primarily manufacturing. The prevalence of manufacturing entrepreneurs in the rural economy, as suggested above, is due in part to earlier entry allowed in the rural economy. The early rural entrants also benefitted from substantial development support of local governments keen to deliver industrial growth. In fact, as indicated in Table 3.6 above, some private rural entrepreneurs benefitted from less formal, more direct relationships with the local government officials promoting their private growth.

#### **3.4.4.2 Enterprise size at entry**

The high concentration of entrepreneurs found in labor-intensive service sectors is consistent with the low capitalization observed for the majority of China’s entrepreneurial enterprises. The CHIPS rural survey asked households operating non-agricultural private businesses about the conditions of their entry to entrepreneurship. Figure 3.8 plots a histogram of the size of initial capital investments of these entrepreneurial enterprises, adjusted for inflation to 2002 prices. Over 60 percent of enterprises launched with 5,000 yuan (US\$604 at 2002 exchange rate) or less initial capital investment; more than 87 percent launched with less than 20,000 yuan (US\$2,415). Less than four percent of enterprises had initial capital investments exceeding 50,000 yuan (US\$6,039). The low level of initial investment for most entrepreneurs likely reflects external borrowing constraints, a function of low wealth endowments (discussed further in Section 3.4.3), though this should not necessarily be construed as following from underdeveloped financial institutions.

What is more remarkable than the small scale of initial investments is that the size of the initial investment for most entrepreneurs changes little over the course of China’s reform era. Figure 3.9 presents a Tukey (1977) box-and-whisker plot showing

Figure 3.8: Initial Capital Investment, Rural Self-Employed

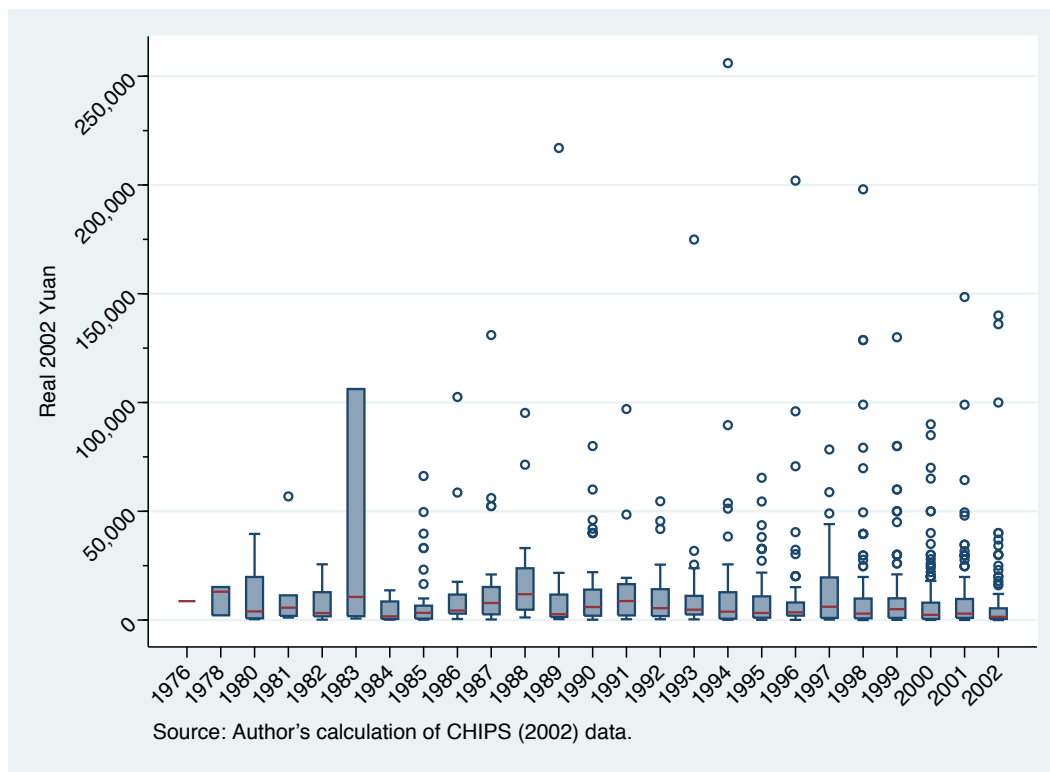


the variation in initial capital investments within each year of market entry. The vertical box spans the 25th to the 75th percentiles of the distribution in each year, with the horizontal line across each box indicating the median value. The “whiskers” reach 1.5 times the length of each interquartile range, and the dots depict extreme outlying observations in the tails of each distribution. Aside from 1983, where a small number of observations results in an anomalously tall box, the middle 50 percent of entrants in each year reside within a narrow range of initial investments between zero and 20,000 yuan.

If underdeveloped institutions were deterring entrepreneurial entry and external financing, then one would expect to see rising levels of entrepreneurs’ initial investments over time, especially as these institutional constraints were relaxed in the mid-1990s. Instead, institutional reforms in the 1990s that strengthened private property rights and exogenous contract enforcement (discussed in Section 3.4.2 above) are nowhere

reflected in the pattern of initial investments over time. Even the range of outlying entrepreneurs who made large initial investments appears to compress downward after 1997. Though national wealth increased substantially between 1995 and 2002 (Li and Zhao 2006), it seems this wealth was not being recycled back into entrepreneurial projects through formal or informal financial channels as one would expect with improved institutions and if entrepreneurship offered such promising expected returns.

Figure 3.9: Distribution of Initial Investment by Self-Employment Entry Year, Rural



### 3.4.4.3 Current size and capital accumulation

Table 3.7 presents the frequency distribution and average size of productive capital stock for urban and rural entrepreneurial enterprises. Both urban and rural entrepreneurship are dominated by small-scale enterprises, measured at current 2002 market valuation of productive capital stock. For urban entrepreneurs, 47 percent had fixed capital stocks of 10,000 yuan (US\$1208) or less; 62 percent had 20,000

yuan or less. Of rural entrepreneurs, 69 percent held 10,000 yuan or less in non-agricultural productive assets and 83 percent had 20,000 or less. Compared to the rural sample, a relatively large proportion of urban entrepreneurs are of substantial size: 26 percent had productive assets exceeding 50,000 yuan, while only 5 percent of rural entrepreneurs were of larger scale.

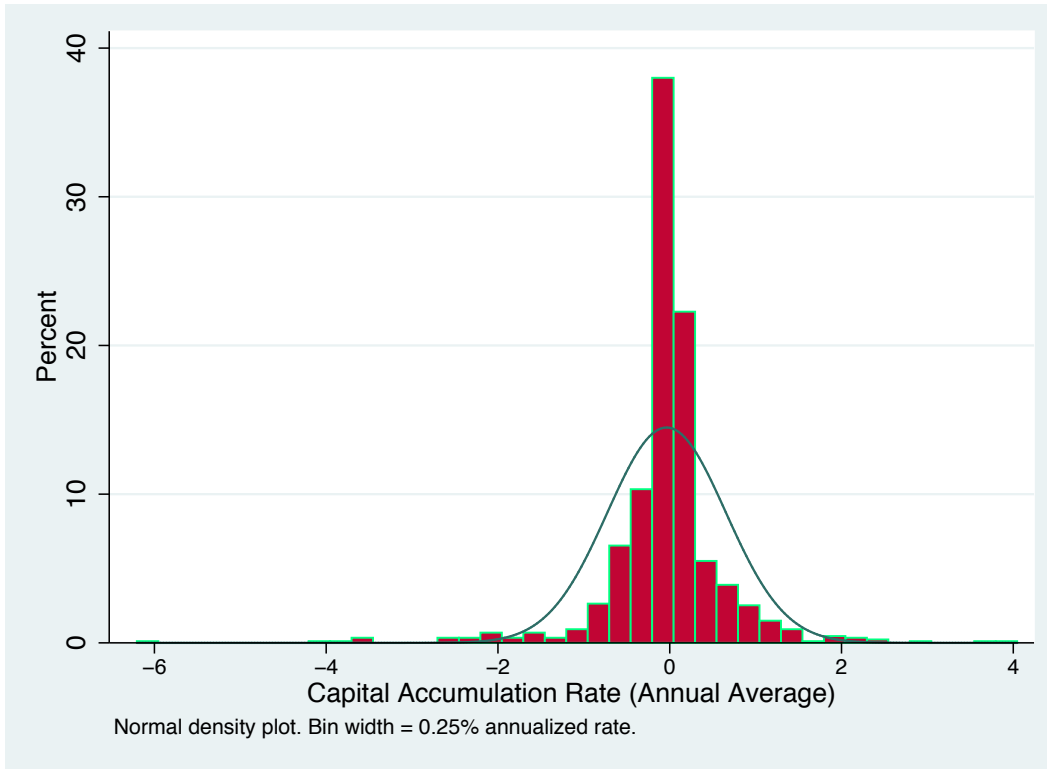
Table 3.7: Entrepreneurial Enterprise Size

Capital Stock, Market Value (2002 yuan)	Urban		Rural	
	%	Mean	%	Mean
1-10,000	47%	4,273	69%	3,011
10,001-20,000	15	16,000	14	15,019
20,001-30,000	6	27,600	5	26,798
30,001-40,000	2	37,500	3	35,788
40,001-50,000	5	50,000	4	45,493
50,001-100,000	13	74,745	3	69,642
>100,001	13	197,273	2	244,842

Source: Author's calculation of CHIPS (2002) data.

The CHIPS data do not offer direct measures of entrepreneurs' profitability, but other research provides evidence of the low profitability of small-scale entrepreneurs. Yueh (2009a) finds the sample of entrepreneurs to yield low profitability—63 percent reported only “marginal profits” in the year 1999, while almost 32 percent reported making losses or being on the cusp of bankruptcy. Profitability can be deduced from changes in the entrepreneur's productive capital stock. Evans and Jovanovic (1989) argue that, although entrepreneurs may start out under-capitalized due to external borrowing constraints, these endeavors tend to grow faster due to greater incentives to reinvest earnings in order to achieve more efficient (profitable) scale. Indeed, Kuijs (2005) estimates that more than half of enterprise investment is financed by firm retained earnings, and thus these are a major source of business investment. If an enterprise is earning profits and if the entrepreneur expects gains exceeding the next best alternative use of the surplus, then we would expect to see high rates

Figure 3.10: Capital Growth of Rural Entrepreneurs



Source: Author's analysis of CHIPS (2002) data.

of capital accumulation. Conversely, low expectations of future profitability from reinvestment would lead to low or no accumulation. Negative accumulation rates would indicate that entrepreneurs' profitability was so low as to not cover the cost of replenishing depreciated capital, or even that business opportunities were so poor that entrepreneurs chose to divest their assets rather than expand investment in their business.

Figure 3.10 plots the distributions of entrepreneurs' annualized accumulation rate of fixed productive capital.<sup>12</sup> Overall, a large percentage of entrepreneurs had a small, negative capital accumulation rate. Almost half of all entrepreneurs saw their productive capital stock shrink by an annualized rate of between -0.5 and 0 percent.

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<sup>12</sup>The logarithmic growth rate. The rate of capital accumulation is normally distributed by the test of D'Agostino, Balanger, and D'Agostino Jr. (1990).



A slightly less large percentage of entrepreneurs, just over one-fourth, accumulated capital at a modest rate of 0-0.5 percent annually. Only 1 percent of entrepreneurs accumulated capital at faster than a 2 percent annual rate—well below national growth rates. Slightly more than half of China’s entrepreneurs were either not earning sufficient profits, or were not enticed to reinvest earnings by expectations of future rates of return. Recall also that the sample of entrepreneurs excludes those who have exited entrepreneurship prior to the 2002 survey and thus is biased in favor of better-performing enterprises.

Credit constraints in the formal or informal financial sector can result in low-wealth entrepreneurs starting businesses with low levels of capital. However, a good economic environment for private entrepreneurship would be expected to elicit increasing investments from the entrepreneur out of retained earnings. With an average accumulation rate of -0.4 percent and a relatively low accumulation rate for even the top-performing entrepreneurs, the outlook for China’s entrepreneurs is not promising. And yet, Figure 3.6 shows a wave of individuals entering entrepreneurship after 1997.

### **3.5 Occupational Selection of Entrepreneurship**

The picture emerging of China’s entrepreneurs differs substantively from the vision of private sector dynamos. Rather than attracting China’s “best and brightest,” entrepreneurs had lower skill and schooling than those in other occupations. Many are people laid off from SOEs or migrants from rural areas eking out informal self-employment in the urban areas. Despite having access to formal and informal finance equivalent to those in wage or agricultural occupations, the majority of entrepreneurs are of very small scale, are concentrated in the lower productivity service sector, and have seen their productive capital stocks deteriorate since entering entrepreneurship. In this section I turn to more formal econometric analyses in order to better understand (a) who become entrepreneurs in China and why, and (b) how attractive are

their economic opportunities relative to other occupational choices. I begin in this section by modeling the factors affecting the probability of choosing entrepreneurial self-employment over wage work. I also test directly the effects of credit constraints on the supply of entrepreneurship by exploiting a “natural experiment” presented by wealth created under China’s urban housing privatization programs. After estimating the marginal probabilities of occupational choice, I turn in Section 3.6 to estimate and compare earnings models for entrepreneurs and wage workers.

### 3.5.1 Model Specification

I model the occupational choice  $y$  for individual  $i$  where

$$y_i = \begin{cases} 1 & \text{if entrepreneur} \\ 0 & \text{if wage worker} \end{cases}$$

The probability  $p_i$  of choosing the entrepreneurial self-employment is given by

$$p_i \equiv Pr(y_i = 1 | x) = \Phi(\mathbf{x}'_i \beta) \quad (3.1)$$

where  $\Phi(\cdot)$  is the standard normal cumulative distribution on  $(-\infty, \infty)$  and bounded by  $0 \leq \Phi(\cdot) \leq 1$ ;  $\mathbf{x}$  is a  $K \times 1$  vector of individual abilities and characteristics, risk orientation and preference for entrepreneurship, wealth, access to formal and informal finance, political and social factors relating to labor market segmentation, geographical factors, and province fixed effects to control for average income differences and other province-specific factors; and  $\beta$  is a vector of unknown parameters. To simplify the analysis, I assume that individual decisions to be economically active are distinct from that of occupational choice.<sup>13</sup> Separate models are estimated for the urban and rural economically active populations and, owing to differences in the

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<sup>13</sup>Multinomial regressions on the rural data including the choice of an agricultural producer occupation did not change the self-employment-wage employment results.

two administered surveys, different variables for wealth, credit access, and some other variables are specified in the urban and rural models.

### **3.5.1.1 Individual Abilities**

Individual abilities are specified as Mincerian (Mincer 1974) human capital measures of educational attainment and work experience, which are identical in both the urban and rural surveys. These measures of human capital endowments are at best imperfect proxies for entrepreneurial abilities, at worst irrelevant or misleading. Some experiences are not as transferable to entrepreneurial endeavors as others. For example, it is not obvious why experiential capital accumulated through years of farming would necessarily aid entrepreneurial success in non-agricultural industries. However, as seen in Table 3.1, agricultural producers have on average 2.3 more years of experience than rural entrepreneurs. The urban survey provides data on years of work experience, but with the rural survey I proxy experience as age minus years of schooling minus six, which likely reflects simply age more than a stock of relevant work experience. Nonetheless, empirical specifications typically treat Mincerian (Mincer 1974) human capital measures as capturing at least observable variations in abilities, while unobservable faculties are assumed normally distributed in the population with mean zero and captured in the estimated residual. To the extent that educational attainment (years of schooling) and experience (years of employment) reflect entrepreneurial abilities, these should be positively associated with the probability of choosing entrepreneurship, though with diminishing returns accounted for by specification of a quadratic experience term.

### **3.5.1.2 Segmentation Factors and Social Networks**

Several social, political, and economic factors unrelated to individual abilities and preferences are likely to affect the individual occupational choice, including by constraining the opportunity set Evidence from other developing countries shows that the

self-employed are more likely to be women (Pratap and Quintin 2006; Desai 2009), although this does not appear to be as much the case in China (Table 3.1). Risk orientation and preference for entrepreneurship are not readily measured individual characteristics. In fact, evidence from behavioral economics and psychology show that individual risk preferences are not static, but rather are state and context dependent (Bowles 2002: Ch. 3). Though the CHIPS provide no direct measure of individuals' risk appetites, several observable characteristics are associated with a lower risk of choosing entrepreneurship. Being married and being the head of a (multimember) household can decrease the riskiness of entrepreneurship by providing a potential pool of unremunerated labor for the enterprise as well as providing opportunities to diversify sources of household incomes. Marriage may also expand the social network from which a potential entrepreneur might seek informal external finance of investment capital. Therefore, being married and a head of household are both expected to be positively associated with the probability of becoming an entrepreneur.

Household registration status, or *hukou*, directly affects an individual's opportunity set. Rural-to-urban migrants who lack legal status to obtain formal employment or housing, health care, schooling for children, and other social welfare benefits are expected to be more likely to choose self-employment. Although migration—itsself a risky choice—may reflect an individual's higher predilection for risk and entrepreneurship, a relationship between lack of resident *hukou* and entrepreneurship more likely would reflect this marginalization in the urban economy. Similarly, those having been laid off from a job in the urban labor market are expected to be more likely to choose self-employment.

The rural CHIPS provides some insights into households' social networks, in particular relationships with party cadres and government officials. Having a cadre in the extended family may also lower the risk of entrepreneurship. Family relations with a cadre may insulate private entrepreneurs from regulatory burdens and may

open doors to bank credit and other inputs and resources that enhance the likelihood of entrepreneurial success. By lowering the risks of entrepreneurship, political connections via a cadre in the extended family network is expected to increase the probability of choosing entrepreneurship.

Political connections through Communist Party membership may also affect the probability of choosing self-employment. As seen in Table 3.6, party membership and other ties to the state (particularly to economic institutions controlled by the state) appear to provide benefits to at least some entrepreneurs, who are able to enter with larger initial capital investments and more external credit. Anecdotal evidence of political privileges abounds, particularly in regard to privatization of government-owned enterprises and to access to bank loans. If such privilege is pervasive, then party membership should be positively associated with the probability of choosing entrepreneurship. However, judging by the preponderance of party members in wage work for both the urban and rural samples (Table 3.1), it is more likely that these party members are a privileged few. Alternatively, party membership is often a necessary condition for accessing higher-paying, higher-benefit employment in SOEs (Lee 1999; Appleton, et al. 2009), and thus lacking party membership can make obtaining this desirable employment more difficult. If employment segmentation along party membership lines pervades, then membership is expected to be negatively associated with the probability of choosing entrepreneurship.

### **3.5.1.3 Wealth and Financial Factors**

Though wealth may be associated with risk preferences and may signal an ability to overcome external borrowing constraints, the rural survey also provides direct detailed information about households actual abilities to access various formal and informal financial instruments. The survey questions elicited a binary response (= 1 if participating, else= 0) for each financial instrument: formal loan from a rural

credit cooperative (RCC) or official microcredit program; receipt of some other form of loan; participation in a producer cooperative association; participation in a mutual credit association; or participation more broadly in “curb” market finance. Access to any external finance is expected to be positively associated with probability of choosing entrepreneurship, but to the extent to which property rights and other legal institutions associated with formal finance are important to entrepreneurship, the formal/informal dichotomy may yield differentiated effects.

Limited individual or household resources mean that entrepreneurial projects often require external finance to achieve efficient, or even sufficient, scale. Higher wealth endowments not only allow individuals to finance independently larger projects, but also can help overcome credit constraints by signaling to lenders the entrepreneur’s commitment to a project as well as private information about a project’s expected returns. Wealthier individuals are also thought to exhibit higher preferences for risk, or conversely individuals with low endowments of transferable assets exhibit greater risk aversion. For these reasons, wealth is expected to be positively associated with the probability of choosing entrepreneurship. I test several measures to explore the effects of the quantity of wealth as well as wealth of different liquidity characteristics on occupational selection: total household wealth, encompassing all the asset categories discussed in Section 3.4.3 and Table 3.3, as well as financial assets and real estate assets—both the market value of housing and land holdings for rural households. Although households hold a majority of their wealth in housing assets, housing assets are less liquid and may face more ambiguity as to assignment of property rights, particularly alienability rights that were restricted in some instances under housing privatization policies, than do financial assets. Asset values are measured in 10,000s of current yuan and land holdings are measured in mu, approximately  $1/15^{th}$  of a hectare.

#### 3.5.1.4 Housing Privatization as Exogenous Wealth Shock

Unfortunately, the data do not allow observation of the individual occupational choice, only the *ex post* outcome of this choice. Empirically, wealth and entrepreneurial selection may exhibit endogeneity. Individuals with entrepreneurial abilities and high risk preference may accumulate wealth in anticipation of future entry (Evans and Jovanovic 1989). Moreover, entrepreneurs observed with large *ex post* wealth endowments may have accumulated wealth faster in entrepreneurial pursuits than in their next best alternative economic activity. Fortunately, in the urban labor market, China's housing urban reforms present a convenient quasi-natural experiment that can control for the endogeneity of wealth and individual propensity toward entrepreneurship by introducing exogenous variation in wealth accumulation. In the urban economy, housing benefits had long been tied to employment in SOEs. In July 1994, the State Council instituted procedures for the sale of housing by state employers to their employee-denizens; these took effect in 1995. Individuals living in state owned housing were given opportunities to purchase their rental units (with some moratorium on resale). Housing privatization constituted a net welfare gain only if the value of the housing asset subsequently exceeded the present value of future rent payments, which it almost certainly did judging by the pervasive uptake of the housing privatization policy. Wang (2008: 14n) finds that over 80 percent of those living in state-owned housing in 1993 had transitioned to private-owned housing by 1997 (Wang 2008: 14n). Housing ownership increased from 37 percent in 1995 to 78 percent in 2002 (Meng 2002: 10), and urban households living in public housing fell from 57 percent in 1995 to 16 percent in 2002 Li and Zhao (2007).

For some, the pricing mechanism used in housing reform generated windfall wealth endowments. Much of the research on housing reforms focuses on the sale of state-owned housing assets at highly discounted prices (Wang 2008; Iyer, Meng, and Qian 2009). High level government officials and party members often enjoyed privileged

access to higher-quality housing (Wang and Wei 1999; Meng 2007). Thus, when time came for privatization, those with political privilege benefitted doubly from their more favorable initial housing allocation. Officials and party members may also have received even more substantial price subsidies in the privatization process. But the pricing mechanism employed in privatization schemes also resulted in random, exogenous endowments of housing wealth based on geographical placement within localities. Pricing guidelines from the State Council specified that sale prices should not exceed three times the average household income in a locality, older construction should be priced at a level to depreciate fully after 75 years, and further discounts were granted for seniority and rank (Iyer, et al. 2009). While taking account of age and size, privatization pricing rules reflected neither quality nor location within the metropolitan area (Li and Zhao 2007).

Though intra-city location did not factor in housing privatization pricing, location is a significant determinant of real estate valuation, as seen by estimating the determinants of housing prices

$$\ln(p_i) = \beta_0 + \beta_1 \ln(\text{Age}_i) + \beta_2 \ln(\text{Area}_i) + \delta \text{Location}_i + \gamma \text{City}_i + \varepsilon_i \quad (3.2)$$

Table 3.8 presents an OLS estimate of the determinants of housing prices at 2002 market values in Equation 3.2. The model specifies the estimated market value of privately owned housing ( $p_i$ ) in natural logarithm as a function of the logs of the age of construction in years, size in square meters, a vector of dummy variables indicating location within the metropolitan area, and a vector of city dummy variables to control for geographical differences in average real estate prices. Overall, the model explains 73 percent of the variation in housing price, and importantly location within the city is a statistically significant and strong determinant of housing price. Controlling for size and age, the price of a house located in a city center is expected to be 40 percent



higher than a similar house classified as located in “other” areas of a city. Houses located “in the city” but not in the city center were valued almost 27 percent higher *ceteris paribus* than houses in other areas, and houses located in the city’s exurbs were valued 35 percent lower.

Table 3.8: Determinants of Housing Prices

VARIABLES	(1) ln(House Value)
ln(Age of Construction)	-0.186*** (0.015)
ln(Square Meters)	1.084*** (0.029)
City Center = 1	0.399*** (0.133)
In City = 1	0.268** (0.132)
Suburb = 1	0.126 (0.144)
Exurb = 1	-0.350* (0.216)
Constant	8.024*** (0.180)
Observations	5763
$R^2$	0.731

Robust (clustered) standard errors in parentheses. Includes city fixed effects.  
 \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

By ignoring geographical factors, the privatization of urban housing endowed households with wealth equal to the difference of privatization purchase price and subsequent market valuation inclusive of geographical determinants of real estate prices. Wang (2008) provides evidence that individuals did not, or were unable to, shift their sectoral choice of employment (to SOEs) to capitalize on potential foreknowledge of housing reforms, thus the wealth accumulated through urban housing reform was exogenous from individual abilities or preferences for entrepreneurship. Meng (2007) finds that, on average, urban household wealth increased 24 percent

annually from 1995 to 2002, and that much of the wealth accumulation came from unearned sources—namely in the form of real estate wealth from subsidized urban housing privatization programs. Thus a majority of the urban population accumulated housing wealth with legal title in the latter 1990s, and the accumulation of wealth through housing reform explains a substantial share of the increase in wealth inequality in China (Li and Zhao 2007).

### 3.5.2 Estimation and Results

I estimate  $\hat{\beta}$  in Equation 3.1 by maximizing the log-likelihood function

$$\ln L(\beta) = \sum (y_i \ln \Phi(x'_i \beta) + (1 - y_i) \ln(1 - \Phi(x'_i \beta))) \quad (3.3)$$

Equation 3.3 is estimated separately for the urban and the rural labor markets, with different sets of variables used in each owing both to different relevant concepts and to different data availability in the two surveys. The equations are estimated with robust clustered standard errors and locational fixed effects. Marginal effects at the mean for the urban and rural samples are reported in Tables 3.9 and 3.10 respectively; statistical significance is calculated on the underlying parameters of the probit estimates. Results from estimation of a logistic cumulative distribution function did not differ qualitatively from the probit estimates. The models overall are strongly statistically significant as measured by the likelihood ratio  $\chi^2$  statistics and correctly predict 92-96 percent of the observed  $y_i$ .

#### 3.5.2.1 Selection in the Urban Labor Market

Turning first to results from the urban sample in Table 3.9, the independent variables capturing human capital endowments and individual entrepreneurial abilities are statistically significant, but take the opposite sign from that predicted by theory. The quadratic term in experience is statistically insignificant, indicating no observable non-linear relationship between experience and occupational choice. Both

years of schooling and years of work experience are negatively and significantly associated with the probability of choosing entrepreneurship, although the economic importance of these human capital measures is small. An additional year of schooling decreases the probability of entrepreneurship by 0.4-0.5 percent ( $p < .01$ ), and an additional year of work experience is associated with a 0.1 percent decrease in probability ( $p < .1$ ). The negative sign on years of schooling is unsurprising, recalling the lower educational attainment profile of entrepreneurs seen in Figure 3.2a. The negative signs and low values on schooling and experience indicate it is not the more educated and more highly skilled individuals who are choosing entrepreneurship. On average entrepreneurs had 2.2 fewer years of education than wage workers and three fewer years of work experience (Table 3.1); if those entrepreneurs acquired this commensurate additional education and experience, they would be 1.2-1.3 percent less likely to choose entrepreneurship.

Being male, married, and a head of household are all positively and significantly associated with the probability of selecting entrepreneurship. Men were 1.1-1.2 percent ( $p < .01$ ) more likely to choose entrepreneurship; married individuals were 1.2-1.4 percent ( $p < .01$ ) more likely; and heads of household were 0.6-0.8 percent ( $p < .01$ ) more likely. That men are more likely to be entrepreneurs in China runs counter to findings in many other developing countries where the predominance of women in entrepreneurial self-employment is seen resulting from gendered labor market segmentation into less desirable or less stable economic activities (Desai 2009; Pratap and Quintin 2006). The finding that marriage and household heads choose entrepreneurship with increased probability is consistent with the notions above that an ability to draw on resources of family members as unremunerated labor, expanded family social networks, and the potential to diversify income streams reduce the risk and reduce the costs of entering entrepreneurship.

The three segmentation factors—*hukou* status, Communist Party membership, and being laid off—all are significantly related to occupational choice and take signs consistent with the segmentation hypothesis discussed in Section 3.5.1. In fact, *hukou*, party membership, and being laid off are the first, third, and second largest predictors, respectively, of choosing entrepreneurship. Holding urban *hukou* significantly reduces the probability of choosing entrepreneurship, by 3.2-4.4 percent ( $p < .01$ ). Conversely, urban migrants without formal household registration status—excluded from many forms of formal employment, social services, and the like—are more likely to enter entrepreneurship. Party membership decreased the probability of choosing entrepreneurship by 2-2.2 percent ( $p < .01$ ). The negative association of party membership with entrepreneurship indicates that the effect of being excluded from higher-wage, higher-benefit SOE employment dominates any effects from preferential access for party members to formal finance or other resources beneficial to entrepreneurs. Finally, having been laid off increases the likelihood of entrepreneurship by 3.33.4 percent ( $p < .01$ ). Viewed together, these results present a picture where individual decisions to enter entrepreneurship are not unconstrained, but rather tempered by individuals' social and economic marginalization. Liberalization of the *hukou* system is often proposed as a means to rationalize China's labor markets, allowing more efficient reallocation of labor resources. Given the results here, liberalization affording migrants better access to employment opportunities and social benefits would decrease the supply of entrepreneurship.

Household wealth, a measure of ability to commit resources to and access external financing for entrepreneurial projects, is positively related to choosing entrepreneurship, as hypothesized for a financial system with credit rationing. But while strongly statistically significant, wealth is an *economically insignificant* factor in occupational choice. In column (2), a 10,000 yuan increase in total household wealth increases the probability of becoming an entrepreneur by less than one tenth of one percent. In-

creasing wealth by 150,000 yuan—more than doubling the wealth of the mean urban household—only increases the probability of entrepreneurship by 0.3 percent. Column (3) specifies financial assets rather than total household wealth, a more liquid form of wealth with more secure property rights. Financial wealth is also a positive and statistically, but not economically, significant predictor of entrepreneurship. Increasing financial wealth by 50,000 yuan, more than doubling the mean for urban households, would increase the probability of entrepreneurship by less than 0.2 percent. Real estate assets (column 4) were a statistically insignificant predictor of entrepreneurship. It is uncontroversial to assume that credit rationing occurs in China, as such coordination failures are endemic even in countries with highly developed financial systems. Where credit rationing is present, higher wealth individuals should enjoy more access to external finance and therefore be more likely to become entrepreneurs. However, the economic insignificance of wealth as a predictor of entrepreneurship suggests that credit rationing in China's financial system is not a binding constraint on entrepreneurship. In these results, there is no evidence of an excess supply of potential (urban) entrepreneurs held back for want of a more efficiently functioning financial system.

Total wealth and financial wealth may be biased predictors of occupational choice if wealth accumulation is endogenous with other characteristics predisposing individuals to entrepreneurship. Participation in urban housing privatization programs, as discussed in Section 3.5.1 above, endowed many households with unanticipated accumulation of wealth based on geographical location and price subsidies, uncorrelated with entrepreneurial abilities or preference. But this exogenous proxy measure of wealth is negatively and significantly associated with the choice of entrepreneurship (Column 5). Participation in housing privatization decreased the probability of entrepreneurship by 1.8 percent ( $p < .01$ ). When additionally controlling for housing location within the city and city center in Column (6), the marginal probability asso-

ciated with participation in housing privatization retains the same sign, magnitude, and statistical significance, although those benefitting from geographical factors in housing valuation were 0.5 percent ( $p < .1$ ) more likely to choose entrepreneurship than those living in metropolitan suburbs, exurbs, or “other” areas. By interacting the participation variable with housing location in Column (7), we see the effects of those participating in privatization and residing in the higher-valued geographical locations: 1.5 percent ( $p < .01$ ) less likely to choose entrepreneurship. Housing wealth on its own may not relax any external borrowing constraint to entering entrepreneurship if property rights over the asset are restricted, for example by limitations on resale or collateralization. But the strong negative association of housing privatization participation with entrepreneurial choice may indicate that even with greater wealth and with housing benefits decoupled from the employment relation, individuals do not prefer entrepreneurial self-employment.

### **3.5.2.2 Selection in the Rural Labor Market**

Marginal effects for occupational selection in the rural labor market are presented in Table 3.10. Years of schooling is not a statistically significant predictor of choosing entrepreneurship, again unsurprising given the virtually identical educational attainment profiles seen in Figure 3.2b. Unlike in the urban results, work experience, proxying for human capital accumulated on the job, takes the expected positive sign with diminishing marginal returns, although the marginal effect associated with the quadratic term is virtually equal to zero. An additional year of experience is associated with a 0.3 percent ( $p < .05$ ) increase in the probability of entrepreneurship. However, as discussed in Section 3.5.1, this proxy measure of experience may be more indicative of an age effect than a human capital effect.

In contrast to urban labor markets, in rural markets gender was not a significant predictor of entrepreneurship, although the effects of both being married and

Table 3.9: Occupational Selection for Urban Economically Active Sample: Marginal Effects

DV:	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Entrepreneur=1	dF/dx	dF/dx	dF/dx	dF/dx	dF/dx	dF/dx	dF/dx
Years of School	-0.005*** (0.001)	-0.005*** (0.001)	-0.005*** (0.001)	-0.005*** (0.001)	-0.004*** (0.001)	-0.004*** (0.001)	-0.005*** (0.001)
Experience	-0.001* (0.001)	-0.001* (0.001)	-0.001* (0.001)	-0.001* (0.001)	-0.001* (0.001)	-0.001* (0.001)	-0.001* (0.001)
Experience <sup>2</sup>	0 0.000	0 0.000	0 0.000	0 0.000	0 0.000	0 0.000	0 0.000
Male	0.012*** (0.003)	0.012*** (0.003)	0.012*** (0.003)	0.012*** (0.003)	0.011*** (0.003)	0.011*** (0.003)	0.011*** (0.003)
Married	0.013*** (0.004)	0.013*** (0.003)	0.014*** (0.003)	0.013*** (0.003)	0.012*** (0.003)	0.012*** (0.003)	0.013*** (0.003)
Household Head	0.008*** (0.003)	0.008*** (0.003)	0.008*** (0.003)	0.008*** (0.003)	0.006*** (0.003)	0.006*** (0.003)	0.007*** (0.003)
Hukou	-0.044*** (0.017)	-0.044*** (0.017)	-0.043** (0.017)	-0.044*** (0.017)	-0.033** (0.014)	-0.032** (0.014)	-0.035** (0.015)
Party Member	-0.022*** (0.003)	-0.022*** (0.003)	-0.022*** (0.003)	-0.022*** (0.003)	-0.020*** (0.003)	-0.020*** (0.003)	-0.020*** (0.003)
Laid Off	0.034*** (0.014)	0.034*** (0.014)	0.034*** (0.014)	0.034*** (0.014)	0.033*** (0.014)	0.033*** (0.014)	0.034** (0.014)
Total Wealth*		0.000*** (0.000)			0.000*** (0.000)	0.000*** (0.000)	0.000*** (0.000)
Financial Assets*			0.000** (0.000)				
Real Estate Assets*				0.000 (0.000)			
House Privatization					-0.018*** (0.003)	-0.018*** (0.003)	
House Location: 1 = In City						0.005* (0.004)	
Prvt*Loc							-0.015*** (0.003)
Observations	10,126	10,126	10,126	10,126	10,126	10,126	10,126
Pseudo R <sup>2</sup>	0.1445	0.1478	0.1478	0.1445	0.1614	0.162	0.1582
χ <sup>2</sup>	338.05	346.73	363.11	337.95	342	362.38	348.75
Sensitivity	0.53%	1.06%	1.06%	0.53%	1.06%	1.06%	1.06%
Specificity	99.98%	98.94%	99.97%	99.98%	99.98%	99.98%	99.98%
Correctly Classified	96.28%	96.30%	96.29%	96.28%	96.30%	96.30%	96.30%

Province fixed effects not reported. Robust (clustered) standard errors in parentheses. Significance calculated with Z test on underlying parameter estimates: \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

\*Scaled 10<sup>4</sup>

heads of household again were positive and statistically significant. Marriage raised the probability of entrepreneurship by 3.13.3 percent ( $p < .01$ ) and household heads were 3.3-3.4 percent ( $p < .01$ ) more likely to choose entrepreneurship. Communist Party membership, like in the urban case, was significantly and negatively associated with the probability of entrepreneurship. Membership decreased the likelihood of entrepreneurship by 3.5-3.6 percent ( $p < .01$ ).

In all models, total assets entered as a positive and statistically significant effect on choosing entrepreneurship. A 10,000 yuan increase in household wealth consistently increased the probability of entrepreneurship by 0.5 percent ( $p < .01$ ). By this estimate, a doubling of the sample mean rural household wealth, from 44,800 yuan to 90,000, would increase the supply of rural entrepreneurship by only one percent.<sup>14</sup> I find mixed results with regard to the effect of access to formal and informal finance on the choice of entrepreneurship. Access to lending from a rural credit cooperative had a statistically significant effect, increasing the probability of becoming an entrepreneur by 2.1 percent ( $p < .1$ ). Recall from the discussion of Tables 3.5 and 3.6 above that large-scale private entrepreneurs with connections to local officials could gain access to such lending on very favorable terms. Access to no other form of credit is significantly associated with the probability of entrepreneurship. Neither participation in a mutual credit association, participation in the informal curb lending market, membership in a producer (mutual) association, or receipt of a loan from another source (including formal bank loans) were associated with entering entrepreneurship. But political connections were strongly associated with the choice of entrepreneurship: having a local or county-level cadre in one's family increased the probability of entrepreneurship by 1.9 percent ( $p < .01$ ).

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<sup>14</sup>Increased wealth for rural households could also relax constraints on urban migration, and subsequently the supply of urban entrepreneurship.



Table 3.10: Occupational Selection for Rural Economically Active Sample: Marginal Effects

DV:	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Entrepreneur=1	dF/dx	dF/dx	dF/dx	dF/dx	dF/dx	dF/dx	dF/dx
Years Schooling	0.001 (0.001)	0.001 (0.001)	0.001 (0.001)	0.001 (0.001)	0.001 (0.001)	0.001 (0.001)	0.000 (0.001)
Experience	0.003** (0.001)	0.003** (0.001)	0.003** (0.001)	0.003** (0.001)	0.003** (0.001)	0.003** (0.001)	0.003** (0.001)
Experience <sup>2</sup>	-0.000** (0.000)	-0.000** (0.000)	-0.000** (0.000)	-0.000** (0.000)	-0.000** (0.000)	-0.000** (0.000)	-0.000** (0.000)
Male	0.004 (0.009)	0.003 (0.009)	0.003 (0.009)	0.004 (0.009)	0.003 (0.009)	0.004 (0.009)	0.004 (0.009)
Married	0.031*** (0.010)	0.032*** (0.010)	0.032*** (0.010)	0.033*** (0.010)	0.032*** (0.010)	0.032*** (0.010)	0.033*** (0.010)
Head Household	0.033*** (0.011)	0.034*** (0.011)	0.033*** (0.011)	0.033*** (0.011)	0.034*** (0.011)	0.033*** (0.011)	0.034*** (0.011)
Party Member	-0.035*** (0.007)	-0.035*** (0.007)	-0.035*** (0.007)	-0.035*** (0.007)	-0.035*** (0.007)	-0.035*** (0.007)	-0.036*** (0.007)
Total Assets (10 <sup>4</sup> )	0.005*** (0.001)	0.005*** (0.001)	0.005*** (0.001)	0.005*** (0.001)	0.005*** (0.001)	0.005*** (0.001)	0.005*** (0.001)
Land Holdings	-0.001 (0.001)						
RCC Loan		0.021* (0.012)					
Other Loan			-0.001 (0.013)				
Producer Assoc.				-0.003 (0.006)			
Mutual Credit Assoc.					0.010 (0.020)		
Curb Market						-0.004 (0.007)	
Cadre in Family							0.019*** (0.007)
Pseudo R <sup>2</sup>	0.0737	0.0738	0.0731	0.0735	0.0732	0.0732	0.0746
$\chi^2$	262.5	265.54	262.93	267.76	262.2	266.09	267.92
Observations	9933	9933	9933	9889	9933	9933	9933
Sensitivity	0.47%	0.47%	0.47%	0.47%	0.47%	0.47%	0.71%
Specificity	99.97%	99.94%	99.96%	99.96%	99.96%	99.96%	99.29%
Correctly Classified	91.49%	91.47%	91.48%	91.48%	91.48%	91.48%	91.48%

Province fixed effects not reported. Robust (clustered) standard errors in parentheses. Significance calculated with Z test on underlying parameter estimates: \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ .

### 3.5.2.3 Where's the Wealth?

What is puzzling from this analysis of occupational choice in China's urban and rural labor markets is that finance is at best only weakly related to the supply of entrepreneurship. In financial markets where information asymmetries and incomplete contracts result in credit rationing, wealth serves to relax the external borrowing constraint. This is true both of formal finance and of informal financial institutions, even where social monitoring/sanctioning and group homogeneity can help improve on some of the contracting problems. Evidence that wealth is strongly associated with entrepreneurship would indicate that would-be dynamic entrepreneurs are being prevented from realizing profitable investment opportunities due to failings of the financial system. But with China's urban and rural entrepreneurs, while statistically related, the economic impact of wealth on the supply of entrepreneurship is weak to irrelevant. In the rural market, where the estimated wealth effect was largest, one would have to nearly double the average household's assets—moving them to the 85<sup>th</sup> wealth percentile—in order to match the effect on entrepreneurship of having political connections. While the wealth measure captures the effect of financial institutions, we also have direct evidence about access to different sources of financing on entrepreneurship. But the ability to access both informal and formal lending made no difference in the choice of entrepreneurship—aside from the ability to access rural credit cooperatives, where local officials held sway.

One could conclude from these results that borrowing constraints do not appear to be hindering the supply of entrepreneurship in China. But another interpretation is that in China many people are becoming entrepreneurs in spite of their low wealth and the fact that, though informal and formal finance was accessible, the potential rewards awaiting in private entrepreneurship were insufficient to make this choice enticing. Combining the evidence on wealth and finance with the evidence on low-to-negative capital accumulation rates in entrepreneurial enterprises points

to entrepreneurship being an economically unattractive choice—excepting those with beneficial relationships with the Party and state. Seeing the situation of China’s swelling ranks of self-employed in this light illuminates the results that lower educational attainment and socioeconomic marginalization are positively associated with the probability of being an entrepreneur.

But how different are the rewards between entrepreneurship and wage work really? In the next section, I model and compare the earnings of individuals in both occupations and evaluate their potential rewards from switching occupations.

### **3.6 Determinants of Earnings for Entrepreneurs and Wage Workers**

The results in Section 3.5 show that wealth, finance, and human capital endowments—the observable factors that theory suggests are determinants of the supply of entrepreneurship—in fact have little effect or the opposite effects than predicted. I next turn to estimating the determinants of individual earnings for individuals engaged in entrepreneurship and wage work, controlling for factors determining individuals’ occupational *ex ante* occupational choice. The self-selection-corrected earnings estimates allow predict the potential gains or losses in earnings available if individuals were to change occupations. These occupation-specific predicted earnings allow inference about the relative attractiveness of expected rewards in entrepreneurship—which for most of the labor force constitutes an inferior option.

#### **3.6.1 Model Specification and Estimation of Average Earnings**

I estimate earnings functions for the urban and rural labor markets where average earnings are defined as net income from work divided by average annual work time—for the urban sample I estimate average earnings per hour and for the rural sample

I estimate average earnings per day of labor supplied. Average earnings are modeled as

$$\ln y_{ijk} = \mathbf{x}'_i \beta + \gamma_j + \eta_k + \epsilon_i \quad (3.4)$$

where  $\mathbf{x}$  is a vector of individual human capital characteristics, productive physical capital stock, gender, *hukou* (for the urban labor market);  $\gamma$  is a fixed effects of sector  $j$ ,  $\eta$  is a fixed effect of province  $k$  to control for geographical differences in average income levels, and  $\epsilon$  is a normally distributed error term with mean zero and standard deviation  $\sigma^2$  capturing unobservable individual characteristics affecting earnings. All of the variables in  $\mathbf{x}$  are hypothesized to be positively associated with average earnings, allowing for diminishing returns to experience captured by a quadratic term hypothesized to take a negative sign. This specification expands on the standard human capital earnings specification (Mincer 1974) to include employment of physical productive capital. For entrepreneurs, the model thus becomes akin to a Cobb-Douglas production function, while for wage workers with zero-to-negligible productive asset stocks the physical capital term drops out. Equation 3.4 is estimated by ordinary least squares (OLS) with robust clustered standard errors, first with a pooled sample of wage workers and self-employed, and then separately for each occupation respectively. Chow (1960) tests reject the null hypothesis of parameter equality between the separate occupation models. Results are presented in columns 1-3 of Tables 3.11 and 3.12 below for the urban and rural samples respectively.

Presumably, the individual's choice to enter self-employment—observed only *ex post* by the researcher—is made with some knowledge of entrepreneurial abilities. The individual's choice of occupation will be endogenous to earnings, meaning that characteristics influencing the probability of choosing wage or self-employment also influence the individual's earnings once the occupational choice is made. If occupational choice is endogenous with the individual characteristics relevant to the model of

earnings determination, then resulting OLS estimates will be biased. Thus, earnings equations for the two occupations are also modeled simultaneously with the choice of self-employment by endogenous switching regression to control for self-selection bias (Maddala 1983; Loshkin and Sajaia 2004) in Equations 3.5-3.7:

$$\ln y_{1i} = X_{1i}\beta_1 + \epsilon_{1i} \quad (3.5)$$

$$\ln y_{2i} = X_{2i}\beta_2 + \epsilon_{2i} \quad (3.6)$$

$$S_i^* = \delta(\ln y_{1i} - \ln y_{2i}) + Z_i\gamma + u_i \quad (3.7)$$

Here,  $y_{ji}$  is the earnings of individual  $i$  in occupation  $j$ ;  $S_i^*$  represents the individual's occupational choice observed *ex post*:

$$S_i = \begin{cases} 1 & \text{if } S^* > 0 \\ 0 & \text{otherwise} \end{cases}$$

$Z_i$  is a vector of characteristics that shape the individual's decision to pursue entrepreneurship. Specification of  $Z_i$  in the selection equation (3.7) draws on insights from the probit analysis in Section 3.5 and also includes sector dummies, assuming that sectoral choice is made jointly with occupational choice.  $X_{ji}$  is a vector of (weakly) exogenous variables influencing earnings.  $\beta_1$ ,  $\beta_2$ , and  $\gamma$  are vectors of unknown parameters, and  $u_i$ ,  $\epsilon_1$ ,  $\epsilon_2$  are disturbance terms assumed to be trivariate normally distributed with mean vector zero and covariance matrix

$$\Omega = \begin{bmatrix} \sigma_u^2 & \sigma_{1u} & \sigma_{2u} \\ \sigma_{1u} & \sigma_1^2 & \cdot \\ \sigma_{2u} & \cdot & \sigma_2^2 \end{bmatrix}$$

where the diagonal of the matrix consists of error variance terms of the selection equation, the earnings equation in occupation 1 (entrepreneurship), and the earnings equation occupation 2 (wage work), and the  $\sigma_{ju}$  are the covariances of  $u_i$  and  $\epsilon_{ji}$ ; the covariance of  $\epsilon_{1i}$  and  $\epsilon_{2i}$  is undefined as  $y_{1i}$  and  $y_{2i}$  are never simultaneously observed (i.e. individuals choose only one occupation).

Equations 3.5 and 3.6 are specified as above in equation 3.4. The system of equations 3.5-3.7 can be evaluated simultaneously with maximum likelihood estimation of equation 3.8 to avoid problems of this endogenous selection bias

$$\ln L = \sum_i \left( S_i \left[ \ln \{ \Phi(\lambda_{1i}) \} + \ln \left\{ \phi \left( \frac{\epsilon_{1i}/\sigma_1}{\sigma_1} \right) \right\} \right] + \right. \\ \left. (1 - S_i) \left[ \ln \{ 1 - \Phi(\lambda_2) \} + \ln \left\{ \phi \left( \frac{\epsilon_{2i}/\sigma_2}{\sigma_2} \right) \right\} \right] \right) \quad (3.8)$$

where  $\Phi(\cdot)$  is a cumulative normal distribution function,  $\phi(\cdot)$  is a normal density distribution function,

$$\lambda_{ij} = \frac{(\gamma Z_i + \rho_j \epsilon_{ij}/\sigma_j)}{\sqrt{1 - \rho_j^2}} \quad j = 1, 2$$

and  $\rho_j = \sigma_{ju}^2/\sigma_u\sigma_j$  is the correlation coefficient between  $\epsilon_{ji}$  and  $u_i$ .<sup>15</sup> Results of this estimation are presented in columns 4-5 in Tables 3.11 and 3.12 for the urban and rural samples. Though the endogenous switching regression corrects for potential self-selection bias, the selection-corrected results in columns 4-5 discussed in the following section are substantially similar to the OLS estimates in columns 1-3.

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<sup>15</sup>This derivation is based on Lokshin and Sajaia (2004).

## 3.6.2 Results

### 3.6.2.1 Urban Labor Market

As expected, for both wage workers and entrepreneurs human capital is positively and significantly associated with average earnings, though with very different magnitudes for the two occupations. Estimated returns to schooling were more than four times as high for wage workers as they were for entrepreneurs. For wage workers, a one percent increase in years of schooling was associated with a 0.86 percent increase in average hourly earnings ( $p < .01$ ), while for entrepreneurs the same increase in schooling earned only an additional 0.21 percent hourly earnings ( $p < .1$ ). This pattern is reversed with experiential human capital, where entrepreneurs had much higher estimated returns to experience than wage workers; however, while entrepreneurs exhibited the expected diminishing returns with -0.12 coefficient ( $p < .1$ ) on the experience squared term, wage workers exhibited increasing rather than diminishing returns to experience with a 0.4 coefficient ( $p < .01$ ). Physical productive capital was a statistically insignificant determinant of earnings for wage workers (as expected), and was positively and significantly associated with average earnings for entrepreneurs: a one percent increase in capital committed to the enterprise will raise the entrepreneur's average earnings by 0.03 percent ( $p < .05$ ).

In addition to individual productivity characteristics, social factors also were significant determinants of earnings. Males enjoyed a wage premium in all regressions presented in Table 3.11, though the estimated effect for entrepreneurs at 0.32 ( $p < .01$ ) exceeded that for male wage workers whose premium was 0.14 ( $p < .01$ ); in levels, the average male wage premium equaled 1.38 yuan per hour for entrepreneurs and 1.15 yuan per hour for wage workers. Having official urban *hukou*—and all the social and economic benefits associated with this status—boosted the earnings potential for urban wage workers with a strongly statistically significant coefficient of 0.21 ( $p < .01$ ), or 1.23 yuan per hour in levels. For entrepreneurs, urban *hukou* was not

a statistically significant determinant of earnings. The insignificance of hukou for entrepreneurs' earnings is most likely due to its importance as a factor in occupational selection—individuals with urban *hukou* were more likely to choose a wage employment occupation over self-employment.

Table 3.11: Determinants of Earnings, Urban Workers

	(1)	(2)	(3)	(4)	(5)
DV = ln(yuan/Hour)	Pooled	Wage	Entrep.	Selection-Corrected	
				Wag	Entrep.
ln(Years Schooling)	0.640*** (0.032)	0.648*** (0.035)	0.277*** (0.093)	0.856*** (0.036)	0.211* (0.157)
ln(Experience)	0.099** (0.044)	0.101** (0.045)	0.485* (0.299)	0.078* (0.047)	0.572** (0.319)
ln(Experience <sup>2</sup> )	0.027*** (0.009)	0.028*** (0.009)	-0.089* (0.063)	0.038*** (0.010)	-0.117* (0.075)
ln(Productive Capital)	0.000 (0.003)	-0.002 (0.003)	0.024** (0.011)	0.000 (0.003)	0.034** (0.017)
Male = 1	0.117*** (0.015)	0.116*** (0.015)	0.184** (0.084)	0.138*** (0.016)	0.320*** (0.100)
Hukou = 1	0.156*** (0.039)	0.196*** (0.047)	-0.142 (0.166)	0.211*** (0.052)	-0.170 (0.198)
Constant	-0.285 (0.224)	-0.339 (0.249)	1.028** (0.499)	-0.912*** (0.137)	0.400 (0.541)
Observations	9845	9476	369	9845	9845
$R^2$	0.353	0.35	0.233		

Includes province and sector effects.

Robust standard errors in parentheses. \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$

### 3.6.2.2 Rural Labor Market

The pattern of parameter estimates in the rural labor market resemble that found for the urban market in the preceding section. Wage workers had positive and statistically significant returns to schooling, with average daily earnings increasing by 0.19 percent ( $p < .01$ ) for each one percent increase in years of schooling. For rural entrepreneurs, the relationship between educational human capital and earnings is statistically insignificant—educational attainment is not a factor in determining



the earnings of entrepreneurs. Estimated coefficients on experience and experience squared take the expected signs for both occupations, but the returns were much higher for entrepreneurs. For rural entrepreneurs, these were 1.29 on experience ( $p < .05$ ), with sharp diminishing returns seen in the -0.23 coefficient ( $p < .05$ ) estimated on the quadratic term. Peak returns to experience for rural entrepreneurs are seen at 16.5 years of experience. For wage workers, the estimated coefficients were 0.29 ( $p < .01$ ) and -.03 ( $p < .05$ ); at these magnitudes, diminishing returns to experience are not seen in any relevant time frame. The results for experience should be viewed tentatively. As discussed in Section 3.5.1, though, the measure of experience employed for the rural sample—age minus years of schooling minus six, compared to actual years of employment experience observed for the urban sample—is at best a noisy indicator of human capital acquired on the job.

Rural entrepreneurs exhibited much larger returns to physical productive capital than their urban counterparts: a one percent increase in capital stock increased earnings .12 percent ( $p < .01$ ). For wage workers, too, the estimate of returns to productive capital is positive and statistically significant, though with the small coefficient magnitude of less than 0.02 percent and low significance ( $p < .1$ ) this may be Type I error. Finally, the male earnings premium was positive and statistically significant for all models, though the estimated size of 0.44 ( $p < .01$ ) for entrepreneurs was more than double that of 0.15 ( $p < .01$ ) for wage workers.

By comparing the determinants of average earnings for wage workers and entrepreneurs in the urban and rural labor markets, several key conclusions can be drawn about who in China become entrepreneurs and how productive they are. First, schooling accumulated human capital is less important for entrepreneurial earnings than for the earnings of wage workers. The regression results here add depth to the observation in Section 3.4 that entrepreneurs have lower overall educational attainment than those in wage employment occupations. With lower returns to schooling,

Table 3.12: Determinants of Earnings, Rural Workers

	(1)	(2)	(3)	(4)	(5)
DV = ln(yuan/Hour)	Pooled	Wage	Entrep.	Selection-Corrected	
				Wage	Entrep.
ln(Years Schooling)	0.166*** (0.040)	0.170*** (0.039)	0.072 (0.164)	0.192*** (0.040)	0.057 (0.194)
ln(Experience)	0.313*** (0.070)	0.288*** (0.069)	1.161** (0.612)	0.291*** (0.071)	1.289** (0.612)
ln(Experience <sup>2</sup> )	-0.031** (0.016)	-0.026** (0.016)	-0.203** (0.109)	-0.028** (0.017)	-0.230** (0.109)
ln(Productive Capital)	0.034*** (0.012)	0.024** (0.012)	0.066** (0.036)	0.018* (0.012)	0.116*** (0.037)
Male = 1	0.163*** (0.026)	0.151*** (0.026)	0.229** (0.114)	0.146*** (0.026)	0.435*** (0.101)
Constant	2.067*** (0.125)	2.029*** (0.130)	1.959* (1.012)	2.083*** (0.138)	1.492 (1.006)
Observations	5780	5318	462	5780	5780
$R^2$	0.189	0.186	0.263		

Includes sector and province effects.

Robust clustered standard errors in parentheses. \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$

entrepreneurial self-employment is a less attractive economic opportunity for individuals with higher educational attainment and presumably technological sophistication. Second, estimated returns to physical capital for entrepreneurs of 0.03 and 0.11 for urban and rural entrepreneurs are quite low. Thus, it seems China's entrepreneurs are not the dynamic economic force that some researchers and China observers believe them to be.

### 3.6.3 Opportunity Cost of Occupational Selection

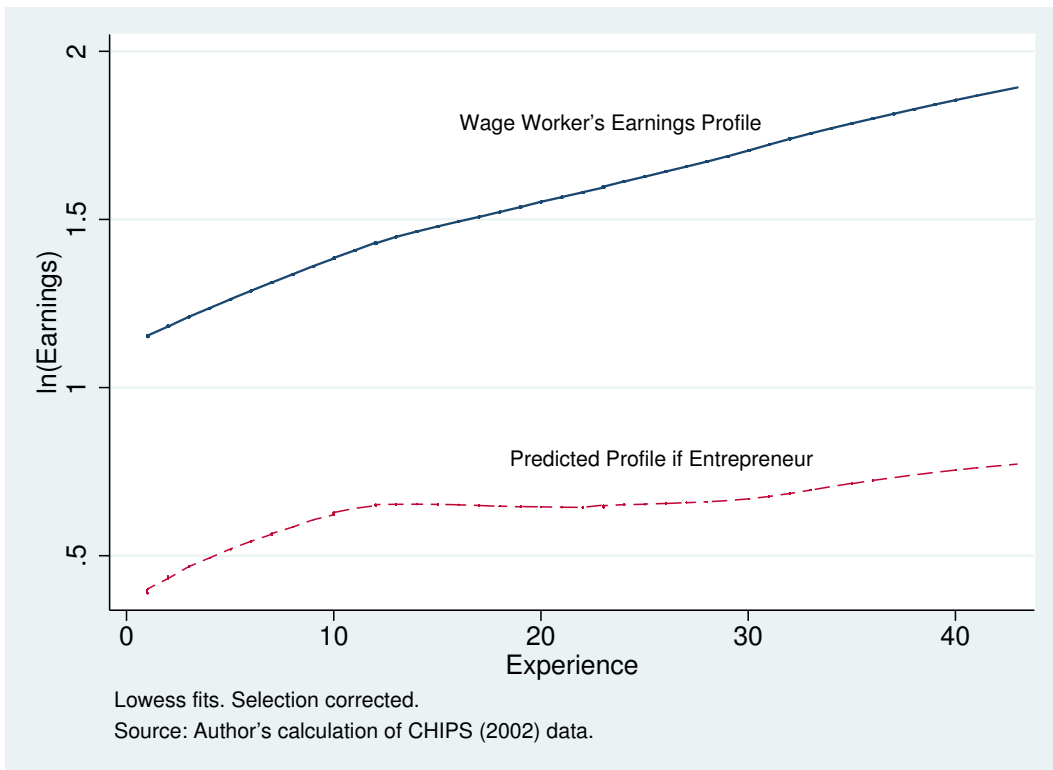
One benefit of the endogenous switching regression is the ability to predict the conditional expectation of average earnings if individuals were to switch occupations. That is, using the estimated parameters of the system of Equations 3.5-3.7 it is possible to calculate

Figure 3.11: Comparison of Occupational Earnings Profiles, Urban Market

(a) Entrepreneurs



(b) Wage Workers



$$E(y_{1i} | S_i = 1, x_{1i}) = x_{1i}\beta_1 + \sigma_1\rho_1 \frac{\phi(\gamma Z_i)}{\Phi(\gamma Z_i)} \quad (3.9)$$

$$E(y_{1i} | S_i = 0, x_{1i}) = x_{1i}\beta_1 - \sigma_1\rho_1 \frac{\phi(\gamma Z_i)}{1 - \Phi(\gamma Z_i)} \quad (3.10)$$

$$E(y_{2i} | S_i = 1, x_{2i}) = x_{2i}\beta_2 + \sigma_2\rho_2 \frac{\phi(\gamma Z_i)}{\Phi(\gamma Z_i)} \quad (3.11)$$

$$E(y_{2i} | S_i = 0, x_{2i}) = x_{2i}\beta_2 - \sigma_2\rho_2 \frac{\phi(\gamma Z_i)}{1 - \Phi(\gamma Z_i)} \quad (3.12)$$

or the expected average earnings for individuals currently in entrepreneurial self-employment (3.9); the expected earnings of current entrepreneurs if they switched to wage employment (3.12); the expected average earnings for individuals currently in wage employment (3.11); and the expected earnings of current wage workers if they entered entrepreneurship (3.10). The last term in each of these equations can be seen as the inverse Mills' ratio defining the shape of the distribution truncated by self-selection, weighted by the degree of endogeneity between individual characteristics and occupational choice; adjusting the otherwise linear prediction of earnings by these terms corrects for self-selection bias and allows unbiased prediction of the dependent variable in the regime for which no observation is available.

Equations 3.9-3.12 allow informed inference about the relative attractiveness of individuals' expected rewards in the two occupational choices. The introduction to this chapter characterized a common perspective on the importance of entrepreneurs as a dynamic force in China's economic growth and development during the reform era, during which privatization and market liberalization yielded an environment of unbridled opportunities for entrepreneurship. If the potential economic opportunities for entrepreneurship are so great, one would expect substantial predicted gains for individuals in wage work who choose to become entrepreneurs and substantial losses

for entrepreneurs should they switch to wage employment. Figure 3.11 evaluates these two scenarios for China's urban labor market.

Panel A compares the experience-earnings profile of entrepreneurs with the predicted experience-earnings profile if entrepreneurs switched to wage employment by fitting locally-weighted regression, or *lowess*, curves (Cleveland 1979) through the conditional expectations of average earnings given by equations 3.9 and 3.12. Rather than enjoying superior opportunities in entrepreneurship, throughout the range of experience levels, current entrepreneurs would gain substantially from switching to wage work. Urban entrepreneurs earned an average of 2.75 yuan per hour, but could earn an average of 4.16 yuan per hour in wage employment, or an average gain of 1.41 yuan per hour from exiting the entrepreneurial sector. Panel B presents the similar comparison for current wage workers in the urban labor market. Again, throughout the range of experience, earnings for wage workers surpassed earnings if these individuals were to switch to entrepreneurial self-employment. Wage workers earned an average of 5.06 yuan per hour but would earn a mere 2.06 yuan per hour in self-employment, losing 3 yuan per hour.

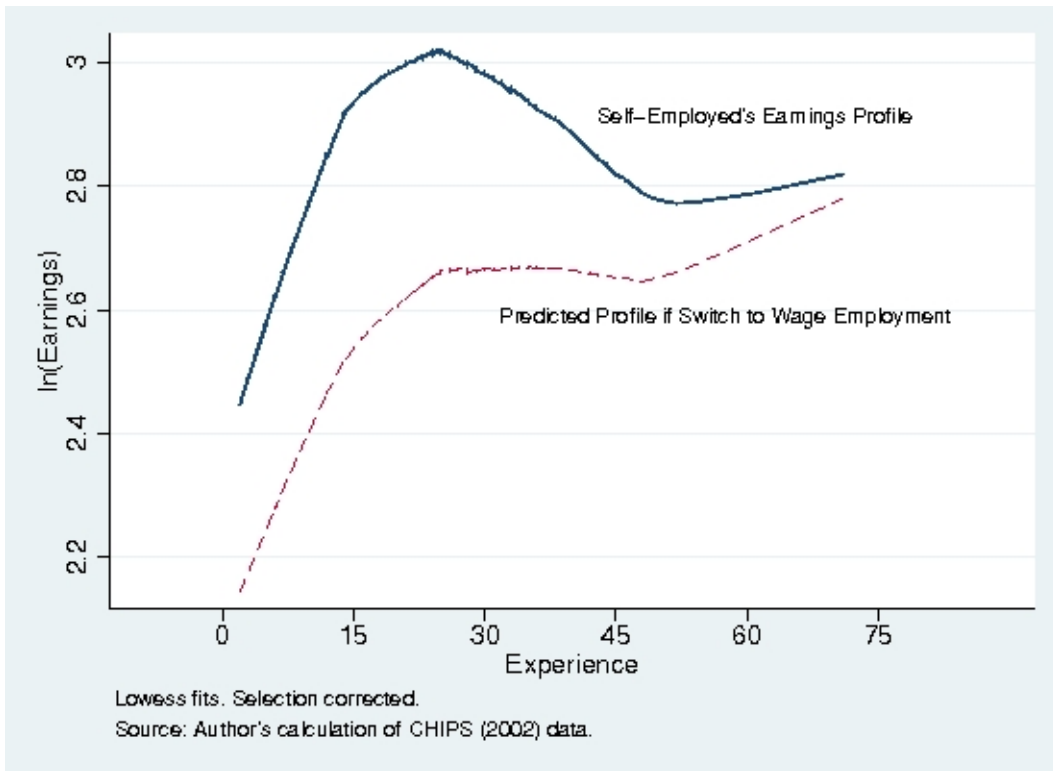
The story is somewhat different in the rural labor market seen in Figure 3.12. Experience-earnings profiles of the two occupations for current entrepreneurs in Panel A shows that self-employment offers superior opportunities throughout the entire range of experience. On average, rural entrepreneurs had daily earnings of 21.44 yuan, but would be expected to earn only an average of 14.68 yuan per day in wage employment, or a loss of 6.76 yuan per day. For rural wage workers in Panel B, wage workers' experience-earnings profile exceeds the predicted profile for most of the range of experience levels, although in a small range near 15 years of experience the two profile curves touch. For the most part, wage workers would experience higher earnings in their current occupation, although in this narrow range some wage workers could be indifferent between their current work and switching to entrepreneurship.

Wage workers averaged daily earnings of 15.51 yuan and would earn slightly less, 15.26 yuan per day on average, if switching to entrepreneurship.

While the lowess curves in Figures 3.11 and 3.12 characterize an average tendency in the data, it is similarly revealing to evaluate the predicted potential earnings gains and losses from switching occupations for individuals observed in the survey data. Figure 3.13 presents kernel density estimates depicting the distribution of gains/losses from switching in the urban and rural labor markets. For the urban labor market depicted in Panel A, few entrepreneurs, only 11.8 percent, would be worse off in terms of earnings from leaving entrepreneurship for wage employment; almost no wage workers, 0.5 percent, would improve their expected earnings from entering entrepreneurship. The vast majority of both groups would be better off in urban wage employment. For the rural labor market in Panel B, most entrepreneurs, 86.3 percent, would be worse off in wage employment although almost 1 in 7 could be better off in seeking wage employment. The predicted earnings gains and losses are more evenly distributed for rural wage workers. More than half of wage workers, 58 percent, would stand to lose earnings by becoming entrepreneurs. However, 41 percent would stand to increase their earnings by switching, with some predicted to make substantial gains, although even at the 90<sup>th</sup> percentile of the distribution predicted gains were just 6.07 yuan per work day.

Figure 3.12: Comparison of Occupational Earnings Profiles, Rural Market

(a) Entrepreneurs



(b) Wage Workers

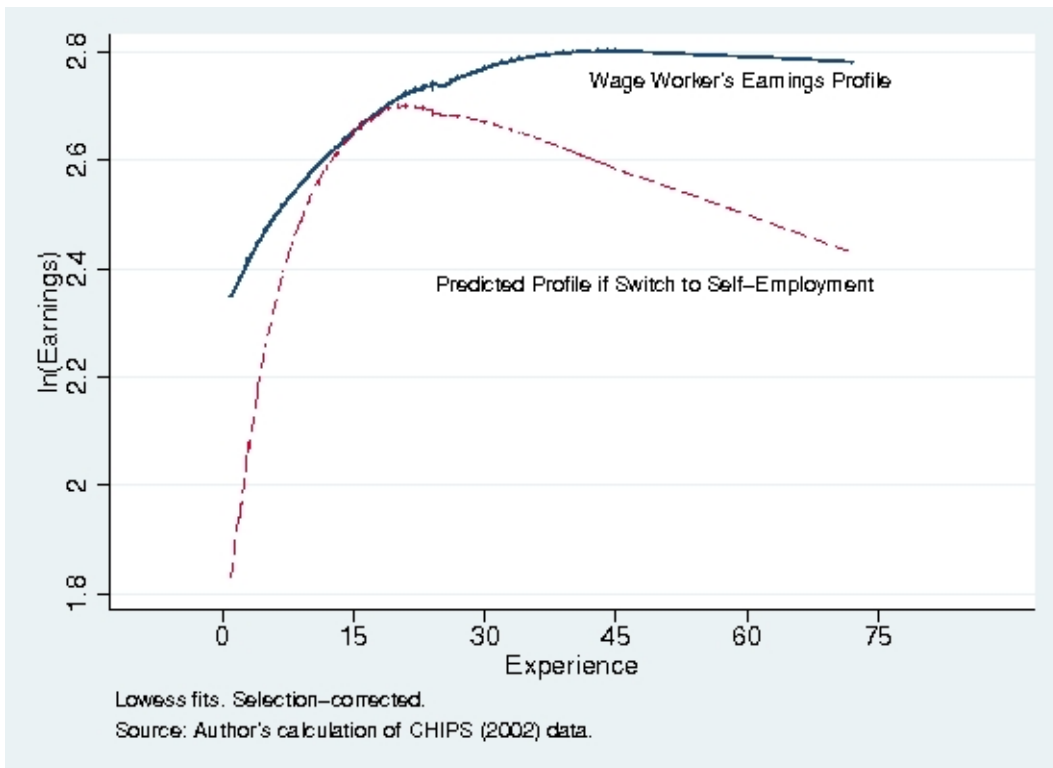
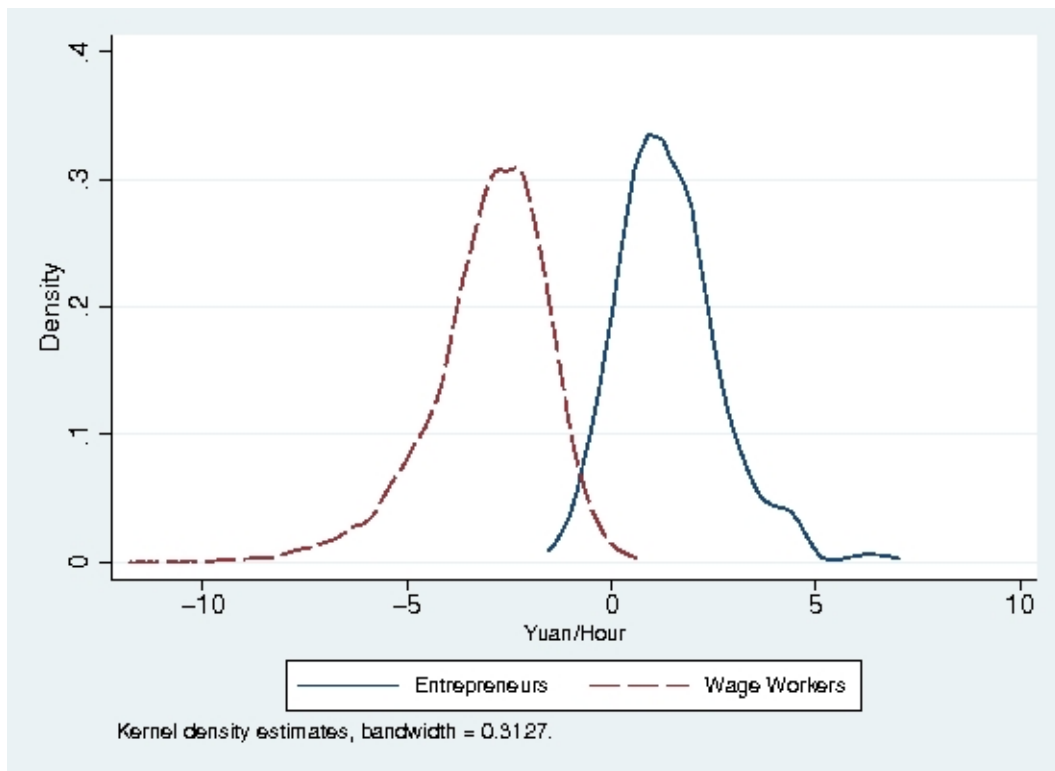
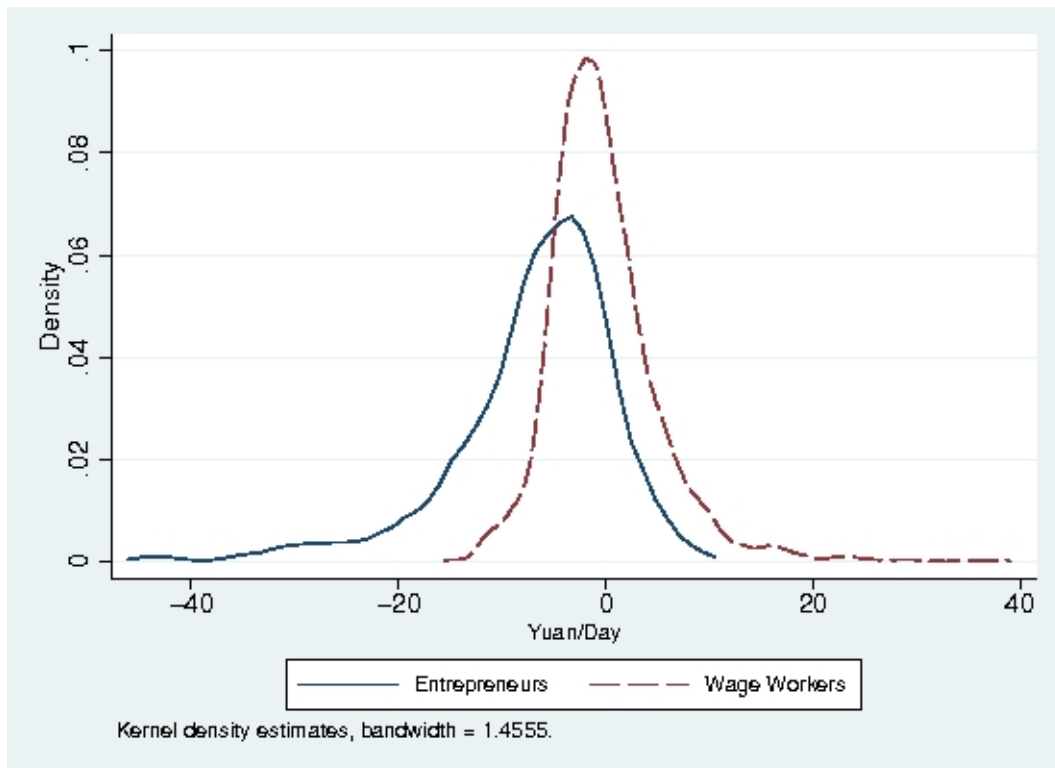


Figure 3.13: Predicted Earnings Gain/Loss from Switching Occupations

(a) Urban Labor Market



(b) Rural Labor Market





### 3.7 Conclusion

The analysis in this chapter shows that China's private entrepreneurs are not the sophisticated and successful business leaders propelling China's development as some believe. Despite widespread perceptions of biases in financial institutions against lending to the private sector, access to external credit appears to be neither an important determinant of individuals' choices to enter entrepreneurship, nor a boon to the performance of those entrepreneurs who access it. This is true of finance obtained both from formal and informal financial structures.

Entrepreneurship does not seem to be a preferable occupational choice for most people, including for those observed as employed in entrepreneurship in the 2002 CHIPS. Even though the institutional environment for privately-owned business improved qualitatively between 1978 and 2002 and average incomes in general rose substantially, over time new entrants to entrepreneurship were unwilling or unable to commit larger sums to their investment projects. Performance of entrepreneurs, measured in long-run capital accumulation rates, is surprisingly poor as well: the majority of entrepreneurs exhibited non-positive rates of accumulation. In the urban labor market, virtually all workers are expected to strictly prefer the higher earnings in wage employment than in self-employment. In the rural labor market though, two-fifths of wage workers could stand to increase their earnings, modestly, by entering self-employment.

Since the evidence indicates that entrepreneurship is not an enticing opportunity for most people, why do people in China become entrepreneurs? For many—marginalized migrants to the cities, disguised unemployed rural agricultural producers, and those dislocated from SOE employment—it seems entrepreneurship is a less than voluntary choice. For others, including a number of the larger and better-performing entrepreneurs, entrepreneurship is paying healthy dividends less because

of individual abilities and productivity characteristics that reap rewards in the free market, and more owing to political connections and relationships with the state.

If China's entrepreneurs and the financial structures supporting private sector development are not the dynamic force behind China's growth, then what does explain China's rapid development success? The next chapter endeavors to evaluate this question by exploring the relationship between China's multiple financial structures and the export performance at the foundation of China's development success since the mid-1990s.

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