Formal and Informal Employment in China

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Chapter 1 Introduction

The urban and rural sectors in China were treated as separate entities during the central planning period, which began in 1949. Three main social governing mechanisms were applied in this period: (1) the unified procurement and sales of agricultural commodities; (2) the People's Communes that had governmental, political, and economic functions; and (3) the Household Registration System (Hukou system), which designates the legal place of residency, work, and life for the entire population.

From a labour-market perspective, there were two sets of problems with these three mechanisms: (1) pervasive labour incentive problems, and (2) severe misallocation of labour (Fleisher and Yang, 2003). Firstly, because of the commune-style organization of community, the means of production were all owned by the communes, and household sideline production was compressed, thus people gradually lost the incentive to work. Secondly, rural residents were made to work in agriculture because of the Hukou System, which designated them as rural residents. Before 1978, almost all employment was in agriculture in rural areas, which created a surplus of labour in agriculture.

In response to these two problems, the Chinese government issued three reform policies beginning in 1979. These policies helped initiate market-oriented development in rural China. The first is the change from the People's Communes system to the

Household Responsibility System, and the second is official increases in agricultural product prices. These two reforms helped solve the labour incentive problem and resulted in dramatic increases in labour productivity (Fleisher & Yang, 2003).

The third reform policy was designed to modify the Hukou system. The Hukou system was adopted by the Chinese government in 1958; however, because of inefficient labour over-allocation to agriculture, the Hukou system has been modified in recent years to permit more flexibility. According to Meng (2003), the state policy regarding the control of rural worker mobility can be divided into six periods, as follows:

- 1958–1978: Forbidding movement period. The urban population expansion was severely controlled during this time; rural residents could only live in places where their Hukou was registered.
- 1979–1983: Controlled movement period. The National Work Conference in 1980 encouraged the operation of rural enterprises to absorb surplus labour in rural areas into nonagricultural activities. The State Council Document No.1 (1983) provided general guidelines that permitted skilled workers and craftsmen to leave farming and engage in a variety of nonagricultural activities.
- 1984–1988: Allowing movement period. According to the Central Committee of the

Communist Party's document, "The Rural Working Announcement in 1984," farmers were permitted to work and conduct business in cities, provided they could secure their own staples. This resulted in random movement of labour from rural to urban areas, a phenomenon that was called the "blind flood of migrants" (mangliu).

- 1989–1991: Controlling random movement period. The General Office of the State Council issued "Emergent Notification on the Strict Control of Migrant Workers into Urban Areas" to reduce the negative effects of random movement (e.g. Create enormous pressure on transport and public security).
- 1992–2000: Regulating movement period. The China Labour Ministry's document "To make Rural Labour flow to urban areas orderly" encouraged, guided, and implemented the orderly flow under macro-control.
- After 2000: Fair movement period. The State Council released "Announcement on the Further Exploitation of Rural Labour Pilot Project," removing various restrictions that prevent rural residents from going into urban areas to seek employment.

During these periods, a repatriation system was developed for preventing the migration from rural to urban areas. Until 2003, some rural workers who had migrated to urban areas were treated as "illegal" migrants. Workers with rural Hukous in urban

areas were often allocated to this system, restrained and then forced to repatriate to their hometowns. From 1961 to 1963, approximately 50 million rural workers repatriated to rural areas (Yang, 2004). However, from 2003, after The State Council Document, 2003, No. 1, a number of important policies (e.g. The State Council document, 2004, No.92; 2006, No, 5) were issued by the central government calling for the protection of rural migrant workers' legal rights and the removal of movement restrictions.

Presently, rural workers are free to move throughout China for employment. After restrictions on rural–urban migration were gradually lifted, the rural labour force migrated to seek employment in urban areas. The official statistics only cover employment in the formal sector and individual, private companies, but many of the rural migrant workers are engaged in jobs outside these two sectors, so they are not covered by the official statistics. From 1990 to 2004, the rural migrant workers that were not counted by the official statistics increased from 14% to 38% of the labour force in urban areas (Hu & Zhao, 2006). Thus, the official statistics do not accurately reflect the number of labourers in urban areas, and in fact, there are millions of labourers in cities that are not counted.

The migration of labour from rural areas to urban areas is one of the most important factors in the rise of informal employment. As Cooke (2008) argued, during

the 1980s and early 2000s, millions of farmers migrated to urban areas for employment. During this period, informal employment came to exist and rapidly grew in the labour market. Today, approximately 80% of the labour force that migrated from the rural areas is working in informal employment (Shi, 2007).

Besides migrant workers from rural areas, another important component of informal employment is laid-off workers from state-owned enterprises. In 1993, stated-owned enterprises started the policy of cutting payroll to improve efficiency. As the number of laid-off workers rapidly increased, the average annual growth rate of the laid-off workers became as high as 40% (Yang, 2007). The number of laid-off workers grew from 300,000 in 1993 to 18.7 million in 2001(Yang, 2007). These laid-off workers were forced to seek re-employment in the labour market. According to a survey carried out by the All-China Federation of Trade Union on re-employment of laid-off workers in selected cities, Jiang (2003) found that 80% to 90% of the laid-off workers who regained employment in 1999 were engaged in informal employment.

In recent years, the government has been seeking to offer better employment protections and labour rights to workers, particularly those in the informal employment. China has formulated its labour laws (New Labour Law, 2008) to protect the legitimate rights and interests of workers, and improve and maintain the socialist market economy

labour system. However, because there still is no accurate and widely acceptable documentation on informal employment in China, the law itself is not perfect and requires improvement. It is the aim of this thesis to provide that much-needed data.

The whole thesis is structured as follows: In Chapter 2, we introduce the definition of informal employment and the data. In Chapter 3, we discuss the probability of formal and informal employment in China and determinants of monthly wages. In Chapter 4, we present the earning differential between formal and informal employees in urban China. In Chapter 5, we present the evidence of formal and informal employees' job satisfaction from China. Finally we conclude and give policy implications in Chapter 6.

Chapter 2 Definition of Informal Employment in China

In this thesis we propose a solution using the International Statistical Standard Definition (ISSD) adopted by the 17th International Conference of Labour Statisticians (ICLS) together with the Chinese General Social Survey 2006 (CGSS2006) data, which is amenable to analysis using this standard definition of informal employment. We decided to use the ISSD because it can provide a much-needed, more accurate, and widely acceptable result; and can make international comparison studies possible.

2.1 Survey of Related Studies on Definition of Informal Employment

Because informal employment has a major impact on labour markets, a good deal of scholarship on this phenomenon has been conducted around the world. The origin of the present research can be traced back to 1993, when the15th International Conference of Labour Statisticians (ICLS) (International Labour Organization (ILO), 2000b) adopted a conceptual framework of informal employment in terms of characteristics of enterprises and production units (sector), as well as in terms of the characteristics of persons employed (jobs). In China, definition of informal employment differs among scholars.

Hu and Yang (2001) defined workers who are counted as informal employment as follows: (1) workers engaged in the informal sector, and (2) informal employment in the

formal sector. The informal sector includes small and medium enterprises, family enterprises, and self-employed small businesses. Informal employed workers in the formal sector are the workers who are temporarily employed by the formal sector. Enterprises and institutions, government agencies, social organizations are defined as the formal sector. Hu and Yang concluded that developing informal employment in China is an important way to avoid high unemployment, and it will become the main mode of employment in China in the future.

Cai and Wang (2004) defined informal employment as those who are not registered with the government, or do not participate in social insurance, or labour relationships are in a nonstandard form.

Wang (2006) gives a legal definition of informal employment: workers engaged in informal employment are not in the formal sector, their employment is not forbidden by law, and the purpose is to earn enough to live on. He defined formal sector as sectors that are established or registered with the government according to law. However, his definition is not so applicable for empirical analysis.

Wu and Cai (2006) utilized the data of 66 cities survey conducted in 2002, and calculated the size of informal employment in urban China in 2002 with the definition suggested by ILO. The size of informal employment was much larger than most

estimates by other scholars, which is over 120 million. They also found that the work conditions and social welfare levels of informal employed workers are much lower than that of formal workers.

Furthermore, relying on the empirical analysis on firm level data and household level data, and the same definition with Wu and Cai (2006), Du, Cai and Wang (2008) implies that the actual size of informal employment is underestimated, their results show that the proportion of informal employment in total employment for native urban residents rose from 19% in 2001 to 33% in 2005, and from 73% to 84% for migrants. They also pointed out that informalizaiton serves as a process of transition and development of Chinese labor market.

There are only a few empirical researches on the earning differential between formal and informal employees in China. The most remarkable achievement of Deng (2009) is using survey data to gain new insight into informal employment in urban areas as China has long lacked the required information to conduct an empirical analysis on informal employment. He treated the workers in private and individually owned enterprises (fewer than 100 employees), the self-employed, and workers who do not have a long-term contract as informal employment. He found that earning differential between formal and informal wage earners is primarily caused by unexplained factors

rather than the different characteristics of formal and informal workers. However, those working in individual household production or small private enterprises with less than 100 workers are defined as informal employees according to Deng's definition, which can leads to overestimation of the size of informal employment.

Using the China Health and Nutrition Survey data, Chen et.al (2011) defined informal employees as those who are "self-employed," "contractors with other people or enterprises," "temporary workers," or "paid family workers." With selection bias corrected, their results indicated that differences between the characteristics of formal and informal employment account for a much higher percentage (76.35%) of the hourly income differential than does discrimination in the labour market.

Although previous studies have appeared to have done sufficient research to explain the phenomenon of informal employment in China, they did not have adequate data to test their definitions or results. Furthermore, Deng (2009) and Chen et al. (2011) have tried to apply the International Statistical Standard Definition (ISSD) adopted by the ILO, but owing to data limitations they did not succeed. They may have underestimate or overestimate the scale of informal employment, hence their results are not so reliable and accurate.

2.2 International Statistical Standard Definition of Informal Employment

As stated by Hussmanns (2004), the international definition of informal employment adopted by the International Labour Organization (ILO) report "Decent Work and the Informal Economy" was well received by the International Labour Conference, the Delhi Group, and other meetings to which it had been presented, and in December 2003, the 17th ICLS adopted guidelines endorsing it as ISSD (ILO, 2003).

The ISSD disaggregates total employment according to two dimensions: type of production unit and type of job. Production units are classified into three groups: formal sector enterprises, informal sector enterprises, and households. Following ICSE-93(International Classification by Status in Employment, ILO), job status is as follows: own-account workers, employers, contributing family workers, employees, members of producers' cooperatives, and agricultural workers. Job nature is formal or informal job. According to the ICLS's definition, as shown in Table 2-1, employment in the informal sector consists of Cells 3−7, informal employment Cells 1−9, and informal employment outside the informal sector Cells 1, 2, 8, and 9.

Although this thesis uses a definition of informal employment based on this conceptual framework developed by the 17th ICLS, there are a number of differences based on China's situation and the data, as follows.

Table 2-1: Conceptual Framework of Informal Employment in China

(Based On the Definition Developed By the 17th ICLS)

Production units by type	**Jobs by status in employment**									
	Own-account Workers		Employers		Contributing family workers	Employees		Members of producers' cooperatives		Agricultural workers
	informal	formal	informal	formal	informal	informal	formal	informal	formal	formal
Formal sector enterprises	N. A.	(0.00%)	N. A.	(0.001%)	Cell 1 (0.31%)	Cell 2 (28.60%)	(71.97%)	N. A.	*	Agr.
Informal sector enterprises (a)	Cell 3 (30.49%)	N. A.	Cell 4 (6.53%)	N. A.	Cell 5 (2.00%)	Cell 6 (32.06%)	(27.85%)	Cell 7	N. A.	N. A.
Households (b)	Cell 8	N. A.	N. A.	N. A.	N. A.	Cell 9	*	N. A.	N. A.	N. A.

Notes: (a) As defined by the 15th ICLS (excluding households employing paid domestic workers).

(b) Households producing goods exclusively for their own final use and households employing paid domestic workers.

(c) Cell 1− 9 represents the various types of informal employment jobs; N. A. (Not Applicable) refers to jobs that, by definition, do not exist in the type of production unit in question; Agr. cell refers to workers engaged in agriculture who are considered as formal employment in this thesis; * cells refer to the formal jobs that are included in other cells of formal job because of data limitation; The rest cells refer to other types of formal jobs. The data in parentheses are the percentage of the workers in that cell accounts for formal or informal employment, respectively.

Source: Hussmanns, (2004).

First, according to the 15th ICLS, agricultural and related activities are excluded from the scope of the informal sector. As a developing economy, around 70%[1] of the country's labour force was engaged in agricultural activities in the early 1980s (291 million people in 1980). As the country developed, the number of agricultural sector workers was decreasing; however, agriculture still employed 43%[2] (326 million people) of the country's labour force by 2006. Moreover, because China is a socialist country, the agricultural sector is considered as a formal sector and farmers are formally employed under socialism. Therefore, we decided to classify agricultural activities into a separate category, as Table 2-1 shows; however, they were excluded in the monthly wages analysis.

Second, Chinese workers in foreign countries were not included in the analysis. Our data from CGSS2006 does not have any information on household members working abroad.

Third, the CGSS2006 has no information that could be used to distinguish between members of producers' cooperatives and other job status. Thus, it is difficult to identify workers and jobs in the category of Cell 7 separately from the rest. As such, Cell 7 has

[1]The authour calculated this value according to the China Statistical Yearbook.

[2]The authour calculated this value according to the China Statistical Yearbook.

no information (Table 2-1). Similarly, the data does not provide information that allows one to distinguish own-account workers or employees in households and formal or informal sector enterprises of production units by type. Thus, no information is available concerning Cells 8 and 9 (Table 2-1).

Accordingly, informal employment in this thesis is defined as the aggregate of Cells 1 through 6, with the possible contents of Cells 7−9 included in Cells 2−6. A person is considered employed if he/she has worked for at least 1 h for a paid job in the week preceding the week of the survey, or has worked more than 3 h a day or more than 15 h a week as an unpaid family worker, or was engaged in agricultural activities for more than three months, and students are excluded.

We consider own-account workers and employers to be formal by job nature if they are registered. Moreover, we consider employees to be formal by job nature if the worker has an employment contract. Following the ILO's framework and suggestions (Hussmanns, 2004), the individuals in firms with less than 10 workers are in the informal sector by product unit; however, because of our data limitations (the information on whether the paid employees in these firms are under five or not is not available), workers working in firms with fewer than 10 workers are treated as informal employment.

As a socialist country, state-owned or collective-owned units in China are treated as the mainstay regarding ownership, so we consider these units as the formal sector by production units: The party and government organizations, state-owned or state shareholding enterprises, collective or collective shareholding enterprises, state-owned or collective-owned non-profit institutions, and social groups. Hong Kong, Macao, and Taiwan enterprises; foreign capital enterprises are also considered as formal sector by production unit. The self-employed; private enterprises and other enterprises are considered to be part of the informal sector by production unit.

2.3 The Chinese General Social Survey Data

The data used in this analysis is drawn from the CGSS2006. The survey was a nationwide, large-sample survey project, conducted jointly by the the Hong Kong University of Science & Technology Survey Research Center and the Sociology Department of the People's University of China. It aimed to systematically monitor the employment, work, and lives of the residents in urban and rural China, as well as certain current social issues. A total of 10,000 households from 28 provinces and cities were randomly selected. One member aged between 18 and 69 was randomly picked from each of those selected households and interviewed from September to October of 2006.

Different from past survey data (e.g. Chinese House Hold Project), the CGSS2006 has much more information on respondents' current job that enables us to analyze informal employment using the ISSD (e.g. product unit), and this is particularly true for information allowing one to distinguish between formal and informal jobs.

The independent variables used in this thesis are defined as follows. As part of the demographic variables, Male denotes the male gender, and the reference category is Female. Married denotes marital status. Age group denotes age in one of five groups. Experience denotes current job experience in years, and Experience squared is self-explanatory. Head of household is a dummy variable that takes the value 1 if the employee is the head of a household, and 0 otherwise. Han is an ethic status dummy, it takes the value 1 if the employee is Han majority and 0 for non-Han minority, and it is an important indicator because over 90% of China's whole population is Han majority. The impact of education is indicated by the Total education years.

There are five occupational variables defined according to the one-digit classification of the International Standard Classification of Occupation (ISCO-88): Managerial, Professional, Technical, Clerical, and Skilled agricultural workers. Skilled agricultural workers are the reference group. The industrial sector of employment is captured by two dummy variables: Manufacturing and Services, Manufacturing is the

reference group. There are seven variables related to firm size based on the number of employees: between 0 and 9, between 10 and 15, between 16 and 49, between 50 and 99, between 100 and 499, more than 500 employees, and firm size not reported. The reference category is firms with more than 500 employees.

Of the Spatial variables, there are three variables related to region: East, Middle, and West region. The East region is the reference category. Big-city is a dummy variable that takes the value 1 if the employee is in the provincial capital cities or the four municipalities directly under the central government, which are Beijing, Shanghai, Tianjin, and Chongqing, and 0 otherwise. Urban Sample is a dummy variable that takes the value 1 if the employee is in an urban area and 0 otherwise. Migrant is a dummy variable that takes the value 1 if the employee is a domestic migrant and 0 otherwise.

2.4 Formal and Informal Workers in China

We will look at the extent and nature of formal and informal working individuals as presented in Table 2-2. The majority of these individuals, 70.99%, were engaged in informal employment. This confirmed that informal employment had accounted for an overwhelming majority of all the labour force in China. Within this 70.99% of informal workers, 71.09 % work in the informal sector, while the remaining 28.91%

Table 2-2: Extent and Nature of Formal and Informal Employment in China (2006)

Informal employment	Cell Reference Table 2-1	Number of workers	% of total informal employment
Informal employment in formal sector		752	28.91
Contributing family workers	Cell 1	8	0.31
Employees in informal job in formal sector enterprises	Cell 2	744	28.60
Informal employment in informal sector		1849	71.09
Own-account workers in informal sector enterprises	Cell 3	793	30.49
Employers in informal sector enterprises	Cell 4	170	6.53
Contributing family workers in informal sector enterprises	Cell 5	52	2.00
Employees in informal sector enterprises	Cell 6	834	32.06
Urban informal employment		1927	74.09
Rural informal employment		674	25.91
Total informal employment		2601	
Total employment		3664	
Informal employment as % of total employment		70.99	
Formal employment		Number of workers	%of total formal employment
Formal sector enterprises employment as % of total formal employment		767	72.15
Informal sector enterprises employment as % of total formal employment		296	27.85
Urban formal employment		988	92.94
Rural formal employment		75	7.06
Total formal employment		1063	
Total employment		3664	
Formal employment as % of total employment		29.01	
Agricultural workers		2321	

Source: The authour calculated this table using Chinese General Social Survey 2006.

are in the formal sector. This implies that informal employment in the formal sector also accounts for a substantial proportion of the entire informal employment.

Employees in informal sector enterprises accounted for the largest proportion of informal employment in the informal sector (32.06%), followed by own-account workers (30.49%). The vast majority of informal employment (74.09%) was urban informal employment.

In a preliminary step, Table 2-3 following Table 2-2, provides descriptive statistics on workers' characteristics by denoting the proportion of workers in four groups: formal employees, informal employees, non-employees, and the unemployed. Mean values reported in the table indicate significant differences in observable individual characteristics across different groups.

Education differs a lot among individuals in the four groups. On average, formal employees are significantly more educated than the other three groups, followed by the informal employees group. The proportion of those who attended college among formal and informal employees is 34.02% and 20.98%, respectively. It is noteworthy that there are significantly less educated (not more than 12 years education) workers in the non-employees and unemployed groups. Formal employees are significantly younger (aged less than 40) than the other three groups while the non-employees are the oldest

Table 2-3: Share of Employment in Formal and Informal Employment in China (2006)

Unit: %

	Formal employee	Informal employee	Non-employee	Unemployed
Demographics				
Male	58.06	56.40	56.20	52.88
Female	41.94	43.60	43.80	47.12
Married	74.27	76.62	85.76	71.63
Age 18−29	30.82	28.33	19.90	29.33
30−39	36.19	30.48	35.90	32.69
40−49	24.13	27.57	28.88	28.37
50−59	8.58	11.91	12.10	9.13
60−69	0.28	1.71	3.22	0.48
Rural hukou	13.57	35.17	54.34	25.48
Urban hukou	86.43	64.83	45.66	74.52
Total education years				
−6 years	2.36	13.81	22.34	11.06
7−12 years	59.85	63.24	69.46	76.92
13−16 years	34.02	20.98	7.80	11.54
17−22 years	3.77	1.96	0.39	0.48
Occupation				
Managerial	8.58	10.52	77.37	-
Professional	23.19	17.17	6.24	-
Technical	18.94	15.46	0.20	-
Clerical	12.16	17.62	4.78	-
Skilled agricultural	37.13	39.23	11.41	-
Industry				
Manufacturing	38.95	29.12	10.24	-
Services	61.05	70.88	89.76	-
Location				
Rural sample	7.07	22.69	30.83	10.58
Urban sample	92.93	77.31	69.17	89.42
East region	52.78	47.21	40.39	41.35
Middle region	31.76	32.89	40.88	46.15
West region	15.46	19.90	18.73	12.50
Migrant	13.20	21.55	20.98	19.71

Non- migrant	86.80	78.45	79.02	80.29
Firm size (employees)				
Not reported	17.72	18.19	5.66	-
0−9		18.88	90.44	-
10−15	3.49	9.51	1.66	-
16−49	10.18	15.84	1.46	-
50−99	11.31	8.05	0.29	-
100−499	28.56	18.19	0.20	-
500−	28.75	11.34	0.29	-
Total (number)	1061	1578	1025	208

Note: Agricultural workers are not included in this table.

Source: The authour calculated this table using Chinese General Social Survey 2006.

(aged more than 40). It indicates that formal employees are more attractive, educated and younger workers than informal employees. Those who are less educated may work as non-employees to escape unemployment or just become unemployed.

The distribution of the four groups follows a clear geographic pattern. Formal and informal employees are more predominantly in the east region. As opposed to formal and informal employees, the non-employees and unemployed mostly appeared in the middle region. The east region is the most developed region in China; it provides employment to migrant workers from the middle and west region. However, as the able workers in the middle region are more likely to move out of the region for employment than workers in the west region (Li, 2009), and there are not enough employment

opportunities locally, the left behind workers in the middle region are more likely to be non-employees or unemployed than workers in the west region.

Formal employees are more predominantly in large firms (more than 100 employees) than informal employees, while the informal employees are more predominantly in small firms (less than 50 employees). It seems that formal employees are superior to informal employees in such a working environment as establishment size.

Formal and informal employee groups are dominated by the urban Hukou individuals (86.43% of the formal employees, 64.83% of the informal employees). However, the non-employees group is dominated by the rural Hukou individuals. Taking into consideration the sample size of each group, despite a minority of rural Hukou individuals in the whole sample, more rural Hukou individuals than urban Hukou individuals are non-employees. It implies that the Hukou system still has a strong effect on individuals' work life in 2006. Even rural Hukou individuals nowadays are free to move throughout the country, as they do not have the same employment opportunities as urban Hukou individuals.

As for other variables, it is easy to notice that gender distribution across different groups is relatively the same Male accounts for the majority of each group, which is

consistent with the case in Sri Lanka (Gunatilaka, 2008). Most of the workers in each group are married. The services industry is over represented in each group except the unemployed group. As 80% of the whole sample is an urban sample, the overwhelming majority of individuals are non-migrant.

Lastly, to obtain an overview of monthly wages for all employees, we calculated the mean monthly wage of employees by wage tercile (the highest, the middle, and the lowest). As can be seen from Table 2-4, the mean wages are significantly different between formal and informal employees. On average, formal employees have higher wages than informal employees; the mean wage ratio is 1.44. The lowest tercile contributes most to the wage gap; the mean wage ratio in this range is 1.65. Mean tests confirm that formal employees earn significantly more than informal employees.

Table 2-4: Mean Wages of Formal and Informal Employees in China (2006)

Unit: RMB

	Formal	Informal	Ratio F/I
Monthly wage (mean)	1696.79	1181.62	1.44
Mean monthly wage by wage tercile			
Highest	3093.26	2333.02	1.33
Middle	1324.22	961.85	1.38
Lowest	764.96	463.03	1.65
Total (number)	1061	1578	

Source: The authour calculated this table using Chinese General Social Survey 2006.

Chapter 3 Probability of Employment Status and Determinants of Monthly Wages in China

Informal employment has become an important component of the global labour market. In developing countries, informal employment has become the main type of employment. In Asia, in the 1990s, informal employment accounted for about 50% to 70% of all urban non-agricultural labour in developing countries. In Africa, over the same period, more than 90% of all new jobs were created by the informal sector (International Labour Organization (ILO), 2000a). Informal employment is also an important employment sector in developed countries. Informal employment generally accounts for 20% to 30% of the total employment in developed countries, and in some countries (such as Poland) it reaches 50% and even above (Hu & Yang, 2001). In China, Wu and Cai (2006) calculated that at the end of 2002, the scale of informal employment in urban China had exceeded 120 million people. Yao (2006) showed that informal employment in urban China accounted for 51% of the labour force in the urban area in 2002. However, the data on informal employment that has been obtained until now has not been reliable because it is according to the authours' own nonstandardized definition.

The development of informal employment in China is conducive to the allocation

of labour resources, and provides employment for millions of people who would likely be otherwise unemployed, or at least worse off. However, according to studies, informal employment has several negative impacts on those engaged in informal employment that should not be ignored.

First, the level of social welfare that workers in informal employment received was significantly lower than the formal ones. In particular, in 2002 in China, the ratio of formal workers who had joined the social endowment security system was 84.5%, and that of informal ones was 37.0%. In the case of unemployment insurance, 72.5% of formal and 20.7% of informal workers are eligible for these benefits. For medical insurance, 61.5% of formal and 14.1% of informal workers are eligible (Wu & Cai, 2006).

Second, as pointed out by the ILO (2002), informal workers and entrepreneurs receive little or no legal social protection. They are unable to enforce contracts and have minimal, if any, property rights security. In general, their employment is highly unstable, and their incomes are very low and irregular.

Third, because informal employment accounts for a big share of total employment, the widening wage gap between formal and informal employment contributes to social income inequality.

As indicated above, informal employment in China occupies a significant share in the labour market. It is also fraught with problems that affect the individual well-being of the labour population. Thus, informal employment in China is important enough to call for various policy changes.

The goal of this chapter is to ascertain the employment status probabilities and determinants of monthly wages of employees in China to provide a much-needed, more accurate, and widely accepted documentation of informal employment in China on the basis of the International Statistical Standard Definition (ISSD). Following Deng (2009), this thesis will use the Lee (1983) model to correct for selection bias. The results show that employment status probabilities are mainly determined by gender, age, experience, ethnic status, education, region, and migrant status; while monthly wages of informal employees are mainly affected by gender, education, region, firm size, city size, and migrant status. We followed up on these findings by conducting a decomposition of the wage gap between formal and informal employees and found that the gap is primarily driven by differences in the personal characteristics (70.4%) rather than discrimination in the labour market (29.6%) and this result is consistent with Chen and Hamori (2011).

The analysis of the determinants of monthly wages of formal and informal employees could provide implications for improving individual well-being. For

example, if there is gender discrimination in informal employment, we should promote the equal pay for equal work policy; if education is highly rewarded for informal workers, we should encourage informal workers to obtain more education. Ultimately, the data provided in this thesis can help guide policy decisions for China's labour market.

3.1 Methodology

Using the definition of employment described previously, we found a total of 3,664 individuals in the sample to be employed in the non-agricultural sector that could be identified as being engaged in formal or informal employment. There are 3,258 individuals in the sample who have worked but were not working during the survey period, or never worked, so they are not included in the research. A total of 2,321 individuals in the sample are engaged in agricultural activities and 208 individuals in the sample are unemployed. We will use the 3,664 figures engaged in formal and informal employment to conduct the analysis of employment status probabilities and determinants of employees' monthly wages.

Because the entire labour force population was not employed and wages were not recorded, selection bias could arise if the analysis were based only on the observed

wages of workers. Considering that the choice of employment status in this study is not binary, following Deng (2009) we adopt the Lee (1983) approach as an extension of a previous study by Heckman (1979) to correct for the selectivity bias in the case of multiple choices.

In the first stage of the Lee approach, a multinomial logit model for explaining the employment status probabilities has to be estimated. The selectivity correction term obtained from the first stage probability model is included in monthly wage functions as an additional explanatory variable in the second stage, to correct for the selectivity bias in wage functions.

The Lee (1983) approach can be explained with a categorical variable where *s* = 1… M choices based on individual utilities y_s^*, as follows:

$$y_s^* = z_s' \gamma_s + \eta_s \quad (1)$$

where z_s' and η_s compose a vector of independent variables and the disturbance term. The impact on the dependent variable is observed only for the case where the alternative s is chosen, which occurs when

$$y_s^* > \max_{j \neq s}(y_j^*) \quad (2)$$

$$\varepsilon_s = \max_{j \neq s}(y_j^* - \eta_s); \varepsilon_s < 0 \quad (3)$$

In the case of this thesis, *s* =1, 2, 3, and 4, represents four mutually exclusive

employment statuses, i.e., (a) formal employees, (b) informal employees, (c) the unemployed and (d) non-employees (workers in formal and informal employment who are not employees: employers, own-account workers, and family workers), respectively. The independent variables $z_1' \dots z_M'$ are classified as six groups: Demographic, Education, Location, Firm size, Occupation, and Industry.

3.2 Empirical Results

As mentioned in the methodology section, we used the Lee (1983) model to calculate the probability of formal and informal employment, and then we investigate the determinants of monthly wages of formal and informal employees. We followed up on these results by decomposing the wage gap between formal and informal employees to ascertain the factors that contribute to the wage gap. As monthly wages do not comprise the income for non-employees, we will not report the determinants of wage for the non-employee group. Notably, we applied the Lee (1983) model in the same way as Deng (2009) to correct for sample selection bias, so the analysis results in this thesis can be hypothesized to be caused by the difference in the definition of informal employment.

3.2.1 Probability of Formal and Informal Employment in China

Table 3-1 presents the marginal effects of the Lee model's first stage multinomial logit model. The results of the employment status probabilities in China are indicated in terms of variables related to demographics, education, and location.

It is evident that the probability of becoming formal employees for a male is 3.6% higher than female, which is also consistent with Deng (2009). However, males are a little less likely to be non-employees than females. The results indicate that female workers are suffering from employment status discrimination in China's labour market, besides employment discrimination (Guo, 2009) and industry discrimination (Wang, 2005). In addition, male family workers' proportion is much lower than that of females', which contributes to their lower probability to be non-employees.

Age also influences the probability of different employment status. People in their 60s have a higher probability of being formal employees, but the lowest probability to be informal employees and non-employees. In contrast, people in their 40s and 50s have a much lower probability of being formal employees, but a higher probability of being informal employees. Many people in their 40s and 50s are laid-off workers from the stated-owned enterprises (Kang, 2003). Because of poor education before 1978 and heavy family burdens, it is difficult for them to be employed as formal employees.

Table 3-1: Determinants of the Employment Status Probabilities: Marginal Effects of Multinomial Logistic Estimates (2006)

	Formal employees	Informal employees	Non-employees
Demographics			
Male(d)	0.036	0.007	−0.042
	(2.29)**	(0.39)	(−2.49)***
Age			
−29(d)	−0.227	0.121	0.127
	(−6.01)***	(2.67)***	(3.36) ***
30−39(d)	−0.208	0.092	0.130
	(−5.50) ***	(1.99) **	(3.42) ***
40−49(d)	−0.280	0.166	0.126
	(−7.44) ***	(3.64) ***	(3.35) ***
50−59(d)	−0.316	0.215	0.120
	(−7.50) ***	(4.36) ***	(2.96) ***
60−69(d)	Reference	Reference	Reference
Married(d)	−0.059	−0.023	0.110
	(−3.23) ***	(−1.03)	(5.37) ***
Head of household (d)	−0.054	−0.022	0.084
	(−3.23) ***	(−1.11)	(4.92) ***
Han (d)	−0.127	0.086	0.069
	(−4.70) ***	(2.55) ***	(2.44) **
Experience(d)	0.006	−0.002	−0.004
	(6.97) ***	(−1.63)*	(−4.55) ***
Education			
Total education years	0.025	0.003	−0.024
	(11.67) ***	(1.26)	(−11.59) ***
Location			
Urban sample(d)	0.100	−0.098	−0.044
	(4.49) ***	(−4.40) ***	(−2.57) ***
East region(d)	Reference	Reference	Reference
Middle region(d)	−0.053	−0.004	0.043
	(−3.39) ***	(−0.22)	(2.86) ***
West region(d)	−0.075	0.078	0.019

	(−3.78) ***	(3.58) ***	(1.02)
Big city(d)	0.043	0.042	−0.078
	(2.89) ***	(2.30) **	(−4.67) ***
Migrant(d)	−0.068	0.071	0.001
	(−3.38) ***	(3.35) ***	(0.05)
Probability	0.280	0.405	0.260
Number of observations	1061	1578	1025

Notes: (a) ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

(b)The base category is unemployed. (d) Represents a discrete change in the dummy variable from 0 to 1.

(c)Data in parentheses are the Z values.

Source: The authour calculated this table using Chinese General Social Survey 2006.

Meanwhile, the employment status of those in their 60s may be because of lifetime employment under socialism at their age. It also can be observed that younger workers (people under 40s) are more likely to be formal employees but less likely to be informal employees than older workers (people in their 40s and 50s), which confirms the results given out by the last section that formal employees are more attractive younger workers. As for non-employees, the probability has no significant difference among workers less than 60.

Both married workers and head of household workers have lower probabilities of becoming formal employees and higher probabilities of becoming non-employees, respectively. The married or head of household workers have family support to start

their own business to have the chance to earn more than formal employees.

In addition, ethnic status is powerful in explaining the probabilities of employment status. Compared with non-Han minorities, the Han majority are less likely to be formal employees, but more likely to be informal employees and non-employees. While this finding may be unexpected, it is significant that the Han majority is more concentrated in more developed areas and that the jobs created are more likely to be for informal employees and non-employees, while the non-Han minorities are more concentrated in less developed areas and that the service provided by informal employees and non-employees are not so needed.

Experience is a strong predictor of the probabilities of employment status. Clearly, more years of experience significantly increase the probability of becoming formal employees. On the contrary, as the years of experience increase, the probability of becoming informal employees and non-employees will decrease.

In line with the conventional wisdom, total education years have positive effects on the probability of becoming formal employees. On the other hand, education years have a negative effect on non-employees. The results are consistent with Deng (2009). As for informal employees, education year has no significant effect. This result confirms that the more educated workers are more likely to be employed; meanwhile those less

educated workers are more likely to be non-employees to escape from unemployment.

Sample type also influences the probability of employment status. Urban samples are more likely to be formal employees, but less likely to be informal employees and non-employees. Basically, there are many more formal jobs in urban areas than in rural areas.

In additional, even after controlling for several personal characteristics, regional effects are still significant. People in the middle and west regions are less likely to be formal employees than those in the east region because there are more formal jobs in the east region than the other two regions. The results indicate that employment status differs greatly among regions.

There are, undoubtedly, other factors at the city level that affect the probability of employment status, suggested by the significant coefficients of the dummy variable for big city. People in big cities are more likely to be employed and work as formal or informal employees than to be non-employees. As expected, whether one is a domestic migrant or not matters for formal and informal employees, as it reduces the probability of being a formal employee and increases the probability of being an informal employee. This result indicates that domestic migrant workers are discriminated against in terms of employment status.

3.2.2 Determinants of Monthly Wages of Employees in China

In Table 3-2, statistics on monthly wages for informal employees are provided in terms of variables related to demographics, education, location, firm size, occupation, and industry. For the purpose of comparisons, Table 3-2 also provides estimation results of monthly wages of formal employees[3].

Males enjoy a higher level of monthly wages both for formal and informal employees, 17.20% and 23.20%, respectively. It confirms there was gender wage discrimination in China (Wang, 2005), and it is consistent with Deng (2009) and Chen et.al (2011). Furthermore, informal female employees are more discriminated against than their formal counterparts.

For formal employees, age is not a statistically significant indicator; however, there is a trend that younger workers enjoy a higher wage for informal employees. In the stated-owned or collective-owned enterprises, wage allocation takes equalitarianism, and efficiency is ignored (Sheng, 2009); wages will not significantly differ among

[3]The selectivity bias is insignificant; this implies that the selectivity bias is not so serious in our data. However, the ordinary least squares (OLS) results are available from the authour on request.

Table 3-2: Determinants of Monthly Wages, All Employees in China (2006)

	Formal employees	Informal employees
Demographics		
Male(d)	0.172	0.232
	(4.62)***	(6.55)***
Age		
−29(d)	0.235	0.380
	(0.65)	(2.20) **
30−39(d)	0.213	0.278
	(0.59)	(1.64)*
40−49(d)	0.211	0.269
	(0.59)	(1.54)
50−59(d)	0.363	0.237
	(1.02)	(1.37)
60−69(d)	Reference	Reference
Experience	0.016	0.015
	(1.90) *	(2.35) **
Experience squared	−0.000	−0.000
	(−1.65) *	(−1.78) *
Education		
Total education years	0.052	0.053
	(5.83) ***	(8.58) ***
Location		
East region(d)	Reference	Reference
Middle region(d)	−0.366	−0.200
	(−8.45) ***	(−5.71) ***
West region(d)	−0.482	−0.315
	(−8.47) ***	(−6.98) ***
Big city(d)	0.158	0.296
	(4.01) ***	(8.86) ***
Migrant(d)	0.229	0.203
	(3.96) ***	(4.71) ***

Firm size (employees)		
Not reported(d)	−0.170	−0.140
	(−2.48) ***	(−1.87) *
0−9(d)		−0.454
		(−6.19) ***
10−15(d)	−0.331	−0.355
	(−2.44) **	(−3.91) ***
16−49(d)	−0.205	−0.192
	(−2.34) **	(−2.35) **
50−99(d)	−0.137	−0.063
	(−2.26) **	(−0.81)
100−499(d)	−0.111	−0.045
	(−2.44) **	(−0.69)
500−(d)	Reference	Reference
Occupation		
Managerial(d)	0.458	0.073
	(5.43) ***	(0.85)
Professional(d)	0.198	0.100
	(3.37) ***	(1.93)**
Technical(d)	−0.014	−0.019
	(−0.24)	(−0.36)
Clerical(d)	−0.057	−0.046
	(−0.89)	(−1.00)
Skilled agricultural(d)	Reference	Reference
Industry		
Manufacturing(d)	Reference	Reference
Services(d)	0.072	0.096
	(1.60)	(2.27) **
Pseudo R−squared	0.540	0.540
Constant	6.278	5.920
	(15.14) ***	(27.19) ***
Number of observations	1061	1578

Note: (a) ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

(b) Data in parentheses are the Z values. (d) Represents a discrete change in the dummy variable from 0

to 1.

(c) Data in parentheses are the Z values.

Source: The authour calculated this table using Chinese General Social Survey 2006.

formal employees. For the young informal employees' condition, a possible explanation could be that because of the job characteristics of informal employees, the work may demand great physical strength, or the workers need to work with a high intensity of labour, and the younger workers (younger than 40) are more powerful and work more efficiently than older workers (older than 40).

Working experience and its square term also affect monthly wage significantly. Monthly wage increases with work experience, then peaks and thereafter declines, for both formal and informal employees. Education also plays an important role in explaining monthly wages for both groups of workers. It is noteworthy that the effects of experience and education on monthly wages of both formal and informal employees are almost the same. It indicates that informal employees' characteristics of experience and education are rewarded the same as formal employees in the labour market. Thus, the wage gap between formal and informal employees may primarily be driven by the differences in such characteristics.

Region is an important indicator of monthly wage for both groups of workers. Monthly wage is the highest in the east region, followed by the middle region, and then the west region. This result confirms the statements in previous studies that wages of workers from different regions differ greatly (e.g. Fan & Zhang, 2009; Zhong, 2006; Deng, 2009), because the east region is the most developed region in China.

There is an approximately 20% wage premium for both formal and informal employees in big cities. The per capita annual living expenditure of urban households by region (2006) data drawn from the China Urban Life and Price Yearbook 2007, which was compiled by the Department of Urban Society and Economic Statistics, shows that the mean total consumption expenditures in the four municipalities directly under the central government was 17352 RMB, while the national average was 11882 RMB; the former is about 1.5 times higher than the latter. So it indicates that such a wage premium for employees in big cities only compensates for their higher costs of living. This 20% wage premium can be named the “Beijing effect” or “Shanghai effect” and corresponds closely to the higher costs of living versus non-big cities in China.

Domestic migrant formal and informal employees earn higher monthly wages than non-migrants. It seems beyond expectation, but the migrant employees worked much longer hours than their non-migrant counterparts (approximately 20 h and over 30 h

monthly, for formal and informal employees, respectively). Although the previous studies show that domestic migrant workers are hourly wage discriminated (e.g. Xie & Yao, 2006), our results indicate that domestic migrant employees can earn higher monthly wages than non-migrants by working hard.

Firm size has significant effects on monthly wage for both formal and informal employees with the negative sign. Monthly wage increases with firm size for formal employees; however, the results are only significant for informal employees in firms with less than 50 workers. The results show that there is an establishment-size wage premium for formal employees. However, the monthly wages for informal employees in firms with more than 50 workers are not significantly different; meanwhile, the informal employees in the smallest firms (sized 0–9 employees) suffered the most from low monthly wages.

For formal employees, managerial and professional workers earn higher monthly wages than other workers, especially managerial formal employees. For informal employees, professional workers earn higher monthly wages than other workers. It indicates that professional knowledge is rewarded for both formal and informal employees.

Industry is also an important indicator to explain the monthly wage. The results

show that informal employees in services earn higher wages than in manufacturing, but the results for formal employees are not significant enough.

Chapter 4 Earning Differential between Formal and Informal Employees in Urban China

In recent years, informal employment has become a significant phenomenon not only in developing countries but also in developed countries, and it is reflected by an increasing size of informal employment. Generally speaking, informal employment accounted for 20% to 30% of all the workers in developed countries, and more than 40% for developing countries (Hu & Yang, 2001). However, informal employment is suffering from low wages, lack of social protection, and other problems (International Labor Organization (ILO), 2002).

In China, informal employment is an important and urgent issue. When China entered the market-oriented economy, in order to solve the problem of labor over-allocation to the agriculture sector, the Hukou System was modified to permit more flexibility. The state policy regarding the control of rural worker mobility has gradually changed since 1978. According to Meng (2003), from 1958 to 1978, the movement of rural residents to urban areas was forbidden. From 1978, there were controlled movement period (1979 to 1983), allowing movement period (1984 to 1988), controlling random movement period (1989 to 1991), regulating movement period (1992 to 2000), and since 2000 there has been fair movement policy. During the 1980s

and early 2000s, millions of surplus rural laborers migrated to urban areas for employment, and at the same time millions of former state sector employees were laid off (Cooke, 2008). As there were not enough formal jobs for all these people, informal employment came to exist and has experienced a steady increase in China since the 1990s. Informal employment is becoming the main mode of employment in China (Hu & Yang, 2001). However, informal employed workers are at a disadvantage in various respects such as work conditions and social welfare level, compared to formal workers (Wu & Cai, 2006). Therefore, labor market policy changes in China are called for to deal with informal employment issues.

Informal employment has been researched by many Chinese scholars, such as definition (Hu & Yang, 2001; Wang, 2006), scale (Wu & Cai, 2006), and wage differential (Deng, 2009). Although many of these studies did enough macro discussion, however, there were no micro data to support their opinions, and these researches didn't use the international accepted framework of informal employment. As such, the previous researches do not fully reflect the actual earning differential between formal and informal employment, and it is impossible to do international comparison research.

To tackle the problem confronted by the previous researchers, and provide a more accurate and widely acceptable result, basing on the conceptual framework of informal

employment developed by the 17th International Conference of Labor Statisticians (ICLS), we analyzed the earning differential between formal and informal employees in urban China, utilizing the Chinese General Social Survey (CGSS) 2006 data—a relatively new, nationwide sample and four-stage stratified sampling scheme—provides abundant job information analyzable using the ICLS framework. Lee (1983) model is adopted to correct the possible selection bias, and the effect of working hours to earning differential is considered. Earning differential decompositions are widely used by previous studies to determine the existence and extent of the labor market segmentation (Dickens & Lang, 1985), and specifically in studies on informal employment (Du, Cai & Wang, 2008); we will follow the previous studies.

4.1 Methodology

According to the definition described in Chapter 2, there are 983 formal employees and 1,213 informal employees in our database. As stated in the literature review, Deng defined workers in private and individually owned enterprises (fewer than 100 employees), the self-employed, and workers who do not have a long-term contract as informal employment. We checked his definition using our data, and there are 287 formal employees and 1,916 informal employees in our samples, obviously, his

definition overestimated the size of informal employment.

As some workers in the samples were unemployed, their earnings were not observed, therefore, selection bias could be an issue. In this thesis, we first adopted the Lee (1983) approach to correct for this selection bias. The multinomial logit is estimated at the first stage of the Lee model. The results of this first stage (the employment status selection equation) are not discussed as this study focuses on the earning differential decomposition. Zuo (2013) discussed the selection equation using similar workers' data in China. The results of the second stage of the Lee model (the unbiased hourly earnings functions and working hour functions of formal and informal employees) are used to decompose the monthly earning differential between formal and informal employees.

Because the selection of employment status in this study is not binary, we adopt the Lee (1983) model rather than Heckman (1979) to correct for the selectivity bias. The four employment statuses are as follows: formal employees; informal employees; self-employed workers and the unemployed. Oaxaca-Blinder's decomposition approach is widely adopted to disentangle the earning differential into two components. However, this approach cannot be applied to decomposing earning differential effects into three parts: difference in characteristics (e.g., age, sex, education and so on), difference in

employment (i.e., formally or informally employed), and difference in hours worked (i.e., monthly working hours). To conduct such decompositions, the extension of the Oaxaca-Blinder approach proposed by Bourguignon et al. (2001) is used in this thesis.

Bourguignon et al. decomposition model can be explained as follows. Let $_F$ represent formal employees and ^{I} represent informal employees. Monthly earnings of informal employee ^{i} can be written as

$$y^i_I = h^i_I \times \exp(\ln w^i_I) = H(z^i_I, \eta^i_I, \gamma_I) \times \exp(\ln W(x^i_I, \varepsilon^i_I, \beta_I))$$

where y^i_I, h^i_I, w^i_I stands for monthly earnings, hours worked, and hourly earnings of informal employee ^{i}, respectively.

Hourly earnings can be approached as

$\ln w^i_I = W(x^i_I, \varepsilon^i_I, \beta_I)$, with individual observable characteristics (x^i_I), unobservable characteristics (ε^i_I), and parameters β_I as arguments.

Working hours can be approached as $h^i_I = H(z^i_I, \eta^i_I, \gamma_I)$, where z^i_I, η^i_I are individual observable and unobservable characteristics, and γ_I is the coefficients estimated.

Similarly, monthly earnings of formal employees can be written as follows:

$$y^i_F = h^i_F \times \exp(\ln w^i_F) = H(z^i_F, \eta^i_F, \gamma_F) \times \exp(\ln W(x^i_F, \varepsilon^i_F, \beta_F))$$

Monthly earnings differential between formal and informal employees can be decomposed as three parts:

(1) Pure difference-in-characteristics effect (e.g., sex, education):

$$H(z^i_F, \eta^i_{F,} \gamma_F) \times W(x^i_{F,} \varepsilon^i_{F,} \beta_F) - H(z^i_I, \eta^i_{I,} \gamma_F) \times W(x^i_{I,} \varepsilon^i_{I,} \beta_F)$$

(2) Pure difference-in-employment effect (i.e., formally or informally employed):

$$H(z^i_I, \eta^i_{I,} \gamma_F) \times W(x^i_{I,} \varepsilon^i_{I,} \beta_F) - H(z^i_I, \eta^i_{I,} \gamma_F) \times W(x^i_{I,} \varepsilon^i_{I,} \beta_I)$$

(3) Pure difference-in-hours-worked effect (i.e., monthly working hours):

$$H(z^i_I, \eta^i_{I,} \gamma_F) \times W(x^i_{I,} \varepsilon^i_{I,} \beta_I) - H(z^i_I, \eta^i_{I,} \gamma_I) \times W(x^i_{I,} \varepsilon^i_{I,} \beta_I)$$

The latter two, difference-in-employment and difference-in-hours-worked effect comprise the segmentation effect. We shall report the mean of alternative decomposition results.

4.2 Empirical Results

4.2.1 Hourly Earnings Functions

The results of hourly earnings are given in Table 4-1. We only comment on the marginal effects that are statistically significant. Male employees enjoy hourly earnings that are 8.80% higher than female employees, meaning there are hourly earnings gender differentials among both formal and informal employees.

Higher educational attainment leads to 5.80% higher hourly earnings for formal employees, and it is also significant and slightly higher for informal employees at

Table 4-1: Estimating Log Hourly Earnings of Formal and Informal Employees in Urban China (2006)

		Formal employees	Informal employees
Demographics	Male (d)	0.088	0.101
		(2.14)**	(2.54)***
Age	18−29 (d)	0.496	0.287
		(0.87)	(1.03)
	30−39 (d)	0.467	0.258
		(0.83)	(0.92)
	40−49 (d)	0.468	0.275
		(0.83)	(0.99)
	50−59 (d)	0.686	0.323
		(1.21)	(1.16)
	60−69 (d)	Reference	Reference
Experience		0.010	0.020
		(0.98)	(2.59) ***
Experience squared		−0.000	−0.000
		(−0.86)	(−1.54)
Total education years		0.058	0.070
		(6.05) ***	(9.65) ***
Location	East region(d)	Reference	Reference
	Middle region(d)	−0.409	−0.259
		(−9.43) ***	(−5.35) ***
	West region(d)	−0.434	−0.335
		(−6.80) ***	(−6.74) ***
	Big city(d)	0.209	0.229
		(5.00) ***	(5.91) ***
	Immigrant(d)	0.211	0.185
		(3.32) ***	(3.16) ***
Firm size	Not-reported(d)	−0.183	−0.061
		(−2.87) ***	(−0.80)
	0−9(d)		−0.421
			(−5.37) ***
	10−15(d)	−0.279	−0.252
		(−2.08) **	(−2.61) ***

	16−49(d)	−0.162	−0.167
		(−1.78) *	(−1.93) **
	50−99(d)	−0.175	−0.036
		(−2.59) ***	(−0.44)
	100−499(d)	−0.162	−0.031
		(−3.00) ***	(−0.47)
	500−(d)	Reference	Reference
Occupation	Managerial (d)	0.454	0.276
		(4.92) ***	(2.94)***
	Professional (d)	0.178	0.112
		(2.63) ***	(1.82)*
	Technical (d)	−0.056	−0.033
		(−0.88)	(−0.53)
	Clerical (d)	−0.082	−0.086
		(−1.12)	(−1.42)
	Skilled agricultural (d)	Reference	Reference
Industry	Manufacturing (d)	Reference	Reference
	Services (d)	0.117	0.070
		(2.38) **	(1.43)
Pseudo R-squared		0.535	0.535
Constant		0.953	0.586
		(1.58)	(1.90) *
Number of observations		983	1913

Notes: ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively; (d) represents a discrete change in the dummy variable from 0–1; Data in parentheses are the Z values.

Source: The author calculated this table using Chinese General Social Survey 2006.

7.00%. This indicates that education is rewarded for informal employees and more rewarding than for formal employees in urban China.

Hourly earnings differ greatly for employees from different regions. Hourly

earnings are higher in the east and progressively decline in the middle and west regions, with a decrease of more than 40% for formal employees and around 30% for informal employees, respectively. Formal and informal employees from big cities receive hourly earnings more than 20% higher than those employees from smaller areas. Immigrant employees receive higher hourly earnings than non-immigrants.

Regarding the firm size, informal employees in firms employing fewer than 50 workers earn significantly less than the reference group; i.e., firms with more than 500 workers. Informal employees in firms with fewer than 10 workers earn 42.10% less per hour than the reference group. For formal employees, all other groups of workers earn significantly less than the reference group, with workers in firms employing fewer than 15 workers earning the least.

Formal employees in managerial and professional occupations earn higher hourly earnings than skilled agricultural workers. For informal employees, it seems that occupations do not make much difference except for professional workers. Formal employees engaged in services earn about 11.70% higher hourly earnings than formal employees from the manufacturing industry.

4.2.2 Determinants of Working Hours

The results of hourly earnings are given in Table 4-2. Also, we only comment on the

Table 4-2: Estimating Monthly Working Hours of Formal and Informal Employees in Urban China (2006)

		Formal employees	Informal employees
Demographics	Male (d)	10.335	11.217
		(3.93)***	(3.68)***
Age		1.910	−2.042
		(1.87)*	(−1.81)*
Age2		−0.026	0.018
		(−1.87)*	(1.21)
Total education years		−1.720	−3.688
		(−2.44) **	(−6.01)***
Location	East region (d)	Reference	Reference
	Middle region (d)	5.863	4.109
		(1.76) *	(1.19)
	West region (d)	−1.066	−2.700
		(−0.25)	(−0.57)
	Big city (d)	−12.620	−1.869
		(−4.15)***	(−0.62)
	Immigrant (d)	9.225	15.124
		(1.81) *	(3.15)***
Firm size	Not-reported(d)	0.378	10.821
		(0.10)	(1.82)*
	0−9 (d)		17.476
			(2.72)***
	10−15 (d)	3.157	21.226
		(0.26)	(2.36)**
	16−49 (d)	−2.116	15.515
		(−0.35)	(2.10)**
	50−99 (d)	5.170	6.235
		(0.93)	(0.93)
	100−499 (d)	7.235	2.594
		(1.89) *	(0.44)
	500− (d)	Reference	Reference
Occupation	Managerial (d)	0.731	−3.647
		(0.13)	(−0.51)

	Professional (d)	1.392	−5.087
		(0.30)	(−1.04)
	Technical (d)	5.321	1.688
		(1.12)	(0.33)
	Clerical (d)	2.598	3.362
		(0.47)	(0.63)
	Skilled agricultural (d)	Reference	Reference
Industry	Manufacturing (d)	Reference	Reference
	Services (d)	−4.682	−0.874
		(−1.32)	(−0.22)
Pseudo R-squared		0.526	0.526
Constant		160.697	258.961
		(7.17)***	(10.85)***
Number of observations		983	1213

Notes: (a) ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively; (d) represents a discrete change in the dummy variable from 0–1; Data in parentheses are the Z values.

Source: The author calculated this table using Chinese General Social Survey 2006.

marginal effects that are statistically significant. Males work around 11 hours per month more than females for both formal and informal employees. Higher educational attainment leads to shorter working hours for both formal and informal employees, and is more remarkable for informal employees.

It seems that monthly working hours do not differ for employees from different regions. Formal employees from big cities worked about 13 hours per month less than formal employees from smaller areas. For informal employees, immigrant employees

work more than 15 hours per month more than non-immigrants.

Firm size does not make much difference in monthly working hours for formal employees, but the situation is much different for informal employees working in firms employing fewer than 50 workers. These informal employees work around 20 hours more per month than informal employees working in firms employing more than 500 workers.

Occupations do not make much difference in monthly working hours for both formal and informal employees.

4.2.3 Decomposing the Observed Earning Differential

Following the methodology presented above, we use earning function and working hour function estimations to decompose earning differential into what comes from the pure difference-in-characteristics effect, the pure difference-in-employment effect, and the pure difference-in-hours-worked effect, with the latter two comprising the segmentation effect. Decomposition results are given in Table 4-3.

As can be seen from Table 4-3, the observed total earning differential between formal and informal employees comes from the difference-in-employment effect and the difference-in-hours-worked effect, rather than from the differences in characteristics.

Table 4-3**: Decomposition of Monthly Earning Differential between Formal and Informal Employees in Urban China (2006)**

Unit: RMB

	Mean monthly earnings		Observed differential	Effect on the observed earning differential of		
	Formal employees	Informal employees	Formal-Informal	Characteristics effect $H(F, \gamma_F) * W(F, \beta_F) - H(I, \gamma_F) * W(I, \beta_F)$	Segmentation effect	
					Employment effect $H(I, \gamma_F) * W(I, \beta_F) - H(I, \gamma_F) * W(I, \beta_I)$	Hours worked effect $H(I, \gamma_F) * W(I, \beta_I) - H(I, \gamma_I) * W(I, \beta_I)$
All employees	1808.6	1196.4	612.2	202.2 (33.0%)	454.4 (74.3%)	−44.4 (−7.3%)
Male employees	2038.1	1393.4	644.7	249.4 (38.7%)	466.6 (72.4%)	−71.3 (−11.1%)
Female employees	1414.2	1001.4	412.8	79.5 (19.3%)	410.8 (99.5%)	−77.5 (−18.8%)

Notes: Decompositions are based on regressions results presented in tables 4-1 and 2; Values refer to measured effects evaluated as earning differences in Chinese Yuan 2006; The data in parentheses refer to measured effects as a percentage of the observed total earning differential.

Only 33% of the earning differential between formal and informal employees can be explained by the differences in characteristics. In the remaining 67% segmentation effect, the pure employment effect dominates. In fact, longer hours worked by informal employees narrow the earning differential between formal and informal employees, meaning that informal employees work more but earn less. This result confirms that the

Chinese labor market is far from fully integrated, leading to high earning differential between formal and informal employees.

We also view the earning differential decomposition results by gender. For the male sub-sample, segmentation forces play a slightly less important role in explaining the earning differential between formal and informal employees. However, in the female sub-sample, segmentation forces account for nearly 80% of the earning differential between these two groups of employees suggesting that female informal employees suffer most from segmentation.

Chapter 5 Formal and Informal Employees' Job Satisfaction: Evidence from China

Even though different factors affecting employees' job satisfaction (such as gender, age) have been studied in European and other countries, and yielded fruitful findings. Nevertheless, considering the different characteristics between formal and informal employees, unexpectedly, there are still no studies have analyzed job satisfaction of formal and informal employees separately. As a result, whether or not the findings confirmed in the previous studies can be applicable to formal and informal employees separately and the extent to how the formal and informal employees differ from each other on job satisfaction remains basically unidentified.

Therefore this chapter mainly focus on the determinants of formal and informal employees' job satisfaction, to prove whether the findings confirmed in the previous studies can be applicable to formal and informal employees separately and the extent to how the formal and informal employees differ from each other on job satisfaction, using the data drawn from Chinese General Social Survey (2006). With respect to the different characteristics between formal and informal employees, analyzing job satisfaction of formal and informal employees separately shall make factors that affecting employees' job satisfaction more clear.

Locke (1976) defined job satisfaction as ‘a pleasurable or positive emotional state resulting from the appraisal of one's job or job experiences’. Job satisfaction has been studied among economists, and there are fruitful findings from the previous studies. Freeman (1978) showed that job satisfaction is a significant predictor of quits. Clark (1996) proposed that men, the well-educated workers have lower levels of job satisfaction. Borjas (1979) and Bender & Sloane (1998) found that non-union workers have higher job satisfaction than union member workers, and Clark, Oswald and Warr (1996) provided strong evidence for a U-shaped relationship between age and job satisfaction. Also, according to Clark (1997), job satisfaction is higher for women than men. It seems that job satisfaction differ greatly among different groups of workers.

Then, why we focus on the job satisfaction of formal and informal employees in China? Because in recent years, informalization of employment has become a significant phenomenon facing China’s labor market development. The informalization of the labor market is reflected by an increasing size of informal employment. In fact, informal employment has been experiencing a steady increase since the 1990s. If informal employment is defined as comprising nine types[4] of workers plus some

[4] According to Wu and Cai (2006), the following types of workers are categorized as informal: (1) Hired workers without formal contract not listed as formal employee; (2) Hourly-paid workers, domestic workers, dispatched workers; (3) Community service

part-time workers, the size of informal employment in urban China in 2002 was 124.06 million workers (Wu and Cai, 2006). Informal employees have grown up to a considerable size in the labor market, so how the informal employees satisfied with their jobs becomes an important issue while designing the labor policy.

This chapter analyses two measures of job satisfaction: the overall job satisfaction and wage income satisfaction, and investigates their relationship with individual and job characteristics for formal and informal employees separately. According to the International Statistical Standard Definition (ISSD) of informal employment, this study focuses on the 963 formal employees and 1182 informal employees in urban China.

The questions on job satisfaction in the survey is 'Overall how are you satisfied or dissatisfied with your job?' and 'In consideration of your ability and job condition, how do you think about your current income?' . The respondents are asked to answer on a scale of 1 to 4 that best described how satisfied or dissatisfied they were with their present job or wage income, in which 1 represents the lowest level of satisfaction and 4

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workers without formal contract; (4) Workers hired on basis of hourly pay, daily pay, weekly pay, and uncertain pay; (5) Paid helpers in the family business and self-employed business; (6) Workers hired by individual business; (7) Workers hired in formal units but identified as dispatched worker, hourly-based worker, and/or casual worker; (8) Workers engaged in agricultural sector are excluded in our consideration; (9) Individual business owners.

the highest.

As Table 5-1 shows, the most mode response for both measures of satisfaction is the 'satisfied' category. Over 50% of all the employees reported that they were satisfied. Formal employees are strongly more satisfied with both measures of job than their counterpart, informal employees. Nearly 67% of the formal employees are satisfied with overall job, but that for informal employees is 56%. Respective figures for dissatisfaction with overall job are about 24% and 31% for formal and informal employees respectively. It is noteworthy that dissatisfied employees are also substantial.

Table 5-1: Distribution of Reported Job Satisfaction and Wage Income Satisfaction

Unit: number of workers

	Formal employees		Informal employees	
	Overall Job Satisfaction	Wage income Satisfaction	Overall Job Satisfaction	Wage income Satisfaction
Levels				
Very dissatisfied	23(2.39)	66(6.85)	97(8.21)	104(8.80)
Dissatisfied	235(24.40)	344(35.72)	371(31.39)	455(38.49)
Satisfied	645(66.98)	540(56.07)	656(55.50)	609(51.52)
Very satisfied	60(6.23)	13(1.35)	58(4.91)	14(1.18)
mean	2.77	2.52	2.57	2.45
Total	963	963	1182	1182

Note: The data in parentheses are the percentage of that part of workers accounts for the whole group of formal and informal employees.

Source: The author calculated this table using Chinese General Social Survey 2006.

At the same time, both formal and informal employees seem to be less satisfied with their wage income but more satisfied with their job by the measures of overall job satisfaction, just as British workers (Gazioglu et al., 2006).

Table 5-2 cross-tabulates the two satisfaction measures with various individual and job characteristics. It reports the means of the variables for the categories of 'satisfied' and 'very satisfied' for the two job satisfaction measures. Findings in this table will be discussed along with the ordered probit estimation results in the next section.

5.1 Methodology

As the dependent variable job satisfaction is a four category ordered measures, it is proper to use ordered probit model. Ordered probit model can be explained as follows. Suppose the underlying relationship to be characterized is

$$y^* = X'\beta + \varepsilon$$

where y^* is the exact but unobserved dependent variable (in this study is the level of job satisfaction); **x** is the vector of independent variables, and β is the vector of regression coefficients which we wish to estimate, and the residual ε has the standard normal distribution N(0,1). Further suppose that while we cannot observe y^*, we instead can only observe the categories of response:

Table 5-2: Means of Satisfied and Very Satisfied Employees of the Variables

Unit: %

	Overall job satisfaction		Wage income satisfaction	
	Formal	Informal	Formal	Informal
Male	73.87	61.25	56.76	52.89
Female	72.30	59.46	58.33	52.50
Age 18-29	77.21	64.49	67.69	64.49
Age 30-39	71.06	55.62	55.87	48.31
Age 40-49	71.49	60.42	48.09	46.73
Age 50-59	74.39	64.46	53.66	49.59
Age 60-69	33.33	47.06	66.67	41.18
Health	75.45	63.81	58.80	55.13
Education primary or blow	61.11	41.41	44.44	36.36
Education junior	59.56	46.27	41.53	41.79
Education senior	73.51	62.70	53.77	54.00
Education university or above	80.11	78.46	69.50	67.85
Lowest wage tercile	58.13	42.15	38.25	33.76
Middle wage tercile	78.06	68.17	62.23	54.66
Highest wage tercile	84.59	76.00	73.77	74.57
Working hour <40	60.00	55.56	55.00	45.37
Working hour =40	77.58	69.00	59.13	56.25
40< Working hour <60	72.06	58.89	55.87	54.44
Working hour >=60	60.71	50.45	54.76	46.43
Long time work frequently	68.21	52.63	52.50	45.08
Long time work sometimes	73.01	61.34	58.59	56.96
Long time work seldom	77.31	68.91	60.22	57.42
Services	75.21	63.80	59.08	52.95
Economic status not reported	83.33	61.54	66.67	53.85
Economic status - low	65.34	49.93	44.83	38.96
Economic status - middle	82.39	77.89	72.84	74.81
Economic status – high	95.12	74.42	92.68	79.07
Hard physical work frequently	62.71	40.30	36.44	37.31
Hard physical work sometimes	72.19	56.90	63.31	48.71

Hard physical work seldom	75.30	66.89	59.62	58.08
Interpersonal relationship	75.17	63.35	57.51	54.17

Source: The author calculated this table using Chinese General Social Survey 2006.

$$y = \begin{cases} 0 \text{ if } y^* \leq 0, \\ 1 \text{ if } 0 < y^* \leq \mu_1, \\ 2 \text{ if } \mu_1 < y^* \leq \mu_2 \\ \vdots \\ N \text{ if } \mu_{N-1} < y^*. \end{cases}$$

Then the ordered probit technique will use the observations on *y*, which are a form of censored data on *y**, to fit the parameter vector.

5.2 Empirical Results

Table 5-3 reports the results estimated from the maximum likelihood ordered probit. The discussion of each explanatory variable separately is provided below.

Gender

The cross-tabulation in Table 5-2 shows that the proportion of men who report satisfied and very satisfied overall job satisfaction is a bit higher than women for both formal and informal employees, but women is more satisfied with their wage income than men. However, when other control variables are introduced into the regressions in Table 5-3, both groups' satisfaction are not correlated with gender, and there are no

Table 5-3: Maximum Likelihood Ordered Probit Estimates of Job Satisfaction

	Overall job satisfaction		Wage income satisfaction	
	Formal	Informal	Formal	Informal
Male(d)	0.18	0.09	-0.02	-0.00
	(0.21)	(1.22)	(-0.24)	(-0.05)
Age	0.05	-0.01	-0.07	-0.08
	(1.46)	(-0.63)	(-2.29)**	(-3.54) ***
Age2	-0.00	0.00	0.00	0.00
	(-1.54)	(0.70)	(1.93)**	(2.96)***
Health(d)	0.36	0.48	0.11	0.23
	(3.02)***	(4.82)***	(0.91)	(2.23)**
Education Junior (d)	0.03	-0.14	0.04	-0.09
	(0.11)	(-0.98)	(0.14)	(-0.61)
Education Senior (d)	0.18	-0.05	0.26	-0.11
	(0.58)	(-0.35)	(0.85)	(-0.70)
Education University+	0.12	0.00	0.46	-0.14
(d)	(0.38)	(0.01)	(1.42)	(-0.75)
Log wage income	0.50	0.26	0.68	0.60
	(6.23)***	(3.98)***	(8.32)***	(8.52)***
Comparison wage	-0.05	0.13	-0.54	-0.07
income	(-0.30)	(1.10)	(-3.61) ***	(-0.59)
Log working hour	0.10	-0.05	0.04	0.15
	(0.64)	(-0.42)	(0.28)	(1.18)
Long time work	-0.09	-0.06	-0.03	-0.11
frequency	(-2.17)**	(-1.67)*	(-0.62)	(-2.85)***
Services(d)	-0.01	0.17	-0.06	-0.15
	(-0.13)	(2.17)**	(-0.71)	(-1.78)*
Economic Status	0.19	0.27	0.30	0.41
	(3.93)***	(6.81)***	(6.33) ***	(9.71)***
Hard physical work	-0.06	-0.10	-0.01	-0.03
frequency	(-1.35)	(-2.70)***	(-0.31)	(-0.72)
Relationship(d)	0.66	0.38	-0.07	0.07
	(4.00)***	(3.43)***	(-0.44)	(0.60)

Notes: ***/**/* significant at the 1%/5%/10% level, respectively; (d) Dummy variables.

statistical significant gender differences about job satisfaction between formal and informal employees.

This result of overall job satisfaction is on contrary to the previous studies (Clark, 1997; Chiu, 1998). Clark (1997) found that women report higher levels of job satisfaction than do men. And neither the different jobs that men and women does, their different work values, nor sample selection account for the gender satisfaction differential, but because women's expectations are argued to be lower than men's.

However, because the thought of the equality of men and women has deep-seated in China and influenced Chinese society for a long time, Chinese think naturally that women and men have equal right to work, and most women keep on working after they got married. In this way, Chinese women have a long history of more nearly equal labor force participation (80.0% in 2000[5]) and the same expectations from work as men, so there are no gender differences on job satisfaction.

Age

Except for workers in their sixties, we observed a U-shaped non-linearity relationship between age and the two measures of job satisfaction in Table 5-2 for both formal and

5 International Labor Office, "World labor report 2000", China labor and Social Security Publishing House, 2001.

informal employees, which is in consist with the previous studies Clark (1996) and Clark et al. (1996). These two previous studies report a statistically significant U-shaped pattern in age for both overall job satisfaction and satisfaction with pay. According to the results in Table 5-2, those in their thirties are the least satisfied with overall job and those in their forties are the least satisfied with wage income. On contrary to previous studies which report that those in their sixties are the most satisfied (e.g. Clark, 1996), the tabulation in Table 5-2 shows that workers in their sixties are the least satisfied with both measures of job satisfaction, except for the formal employees' wage income satisfaction.

In the ordered probit results in Table 5-3 where other variables are controlled for, different picture emerges. Here, evidence for the U-shaped relationship between age and overall job satisfaction observed in Table 5-2 does not exist for both formal and informal employees. However, a statistically significant U-shaped relationship is observed for wage income satisfaction for both formal and informal employees.

People in their sixties feel the least satisfied may be because they are retired from job, and although some of them found another job after retirement, but most of these jobs are informal jobs, which make them feel less satisfied than before, and this is supported by our data that 17 out of the 20 people in their sixties are informal

employees. Second, even they are not retired and working as formal employees, they may not as powerful as before; this also can make them feel dissatisfied.

As for wage income satisfaction, young workers feel satisfied may because they have just begun work not long, and have little experience to judge their wage income, comparing with no wage income old days they are satisfied. With some years of work experience, wage income satisfaction drops in during the middle ages. As argued by Clark et al. (1996), older workers may have reduced aspirations as they realize that they face limited alternative choices.

Health

The survey question asks how the employees are satisfied with their health. The cross-tabulation in Table 5-2 shows that more than half of the employees who are satisfied with their health report high levels of satisfaction for both formal and informal employees. When other variables are controlled for in the regressions, in Table 5-3 we observe a statistically significant positive relationship between health satisfaction and overall job satisfaction, indicating that satisfaction of health lead to higher levels of overall job satisfaction for both formal and informal employees. Similar results are reported by Clark (1996), in his paper Clark found a strongly significant positive

relationship between self-reported physical health and job satisfaction. At the same time, good health leads to informal employees' much higher overall job satisfaction than formal employees. However, different from formal employees, health is also an important indicator of wage income satisfaction for informal employees. Unlike formal employees, informal employees' wage income depends on how much they can work. The results indicate that health is much important for informal employees than formal employees.

Education

A strong negative relationship between job satisfaction and education was found by Clark (1996). The results in the cross-tabulation of Table 5-2 do indeed indicate that there is unambiguously strong relationship between job satisfaction and education, but of the opposite sign for both formal and informal employees. For both measures of job satisfaction, the percentage of those claiming to be satisfied or very satisfied is the greatest for the group with the highest level of education. However, when other explanatory variables are included, Table 5-3 shows that no significant relationship between job satisfaction and education levels could be observed for both groups. Maybe because in recently years, the unemployment problem is serious in China, the labour

market is crowded with workers who are satisfied so long as they are employed, no matter his/her education level is high or low.

Wage income and comparison wage income

Wage income is strongly correlated with both measures of job satisfaction, as can be observed both from Table 5-2 and 3. Higher level of wage income is associated with higher levels of job satisfaction for both formal and informal employees. Table 5-3 includes the logarithm of wage income. The coefficients estimated are positive and statistically significant, confirming that higher wage income is associated with higher job satisfaction. Clark (1996) and Clark et al. (1996) also reported the same results. The relationship between wage income and overall job satisfaction is almost two times for formal employees than informal employees, indicating that formal employees are much more satisfied with wage income than informal employees for jobs overall.

Clark et al. (1996) has found that comparison wage income is shown to be strongly and negatively correlated with overall job satisfaction. Following Hamermesh (1977) and Clark (1997), we used a wage equation, based on a range of individual and job characteristics, to predict the 'comparison wage income' for each individual. Considering the possible selection bias, we use Heckman (1979) model to estimate the

wage equation. However, our results show that comparison income is uncorrelated with overall job satisfaction, but significantly negatively correlated with formal employees' wage income satisfaction. Formal employees expect their wage income to be equal to their counterparts, higher comparison income definitely will make them less satisfied. Informal employees' wage income satisfaction is uncorrelated with comparison wage income; maybe because informal jobs are of various types, the workers cannot simply compare their selves with others. Our results indicate that both measures of job satisfaction are more depended on absolute income other than comparison income, which is opposite to Clark et al. (1996).

Work hour

The cross-tabulation in Table 5-2 shows that employees who were working 40 hours per week have the highest level of job satisfaction for both formal and informal employees. Less than 40 or more than 40 hours of work per week are associated with lower levels of satisfaction. It seems that Chinese are most satisfied with the work five days per week, 8 hours per day for both formal employees and informal employees.

Clark (1996) found that hours of work are strongly negatively related with satisfaction with pay and less strongly with overall job satisfaction. On contrary, Table

5-3 shows that hours of work are unrelated to both measures of job satisfaction.

However, the variable ‘Long time work frequency’ is significant for formal and informal employees’ overall job satisfaction and informal employees’ wage income satisfaction. The question is ‘How often are you running into long time work?’. The answers are on a scale of 1 to 5, with 1 representing never and 5 always. Long time work frequency is negatively related with formal and informal employees’ overall job satisfaction, long time work frequently shall make employees dissatisfied with overall job. And it is negatively related with informal employees’ wage income satisfaction, probably because they work long time frequently but get less wage income than expected, which shall make them dissatisfied with wage income.

Industrial composition

With regard to the industrial composition, the cross-tabulation in Table 5-2 shows that the services sector workers are more satisfied for both groups. However, Table 5-3 indicates that industrial composition is not correlated with formal employees, but significantly correlated with informal employees’ job satisfaction. Informal employees in the services sector is more satisfied than the manufacturing sector for overall job, but are less satisfied with wage income. It seems that informal employees in the services

sector are satisfied with other aspects of job other than wage income, such as the actual work itself.

Economic status

The cross-tabulation in Table 5-2 shows that better economic status is associated with higher job satisfaction for both formal and informal employees. This result is mostly confirmed in Table 5-3 that wage income satisfaction is positively related with economic status for both groups, but good economic status makes informal employees more satisfied than formal employees.

Other job related variables

'Hard physical work frequently' leads to low levels of job satisfaction for both measures in Table 5-2. Statistically it is negatively related with overall job satisfaction for informal employees group, but not for the formal employees group. Probably because of formal employees' work characteristics, their work is not related with heavy manual work in general. Satisfaction with interpersonal relationship leads to higher levels of job satisfaction for both measures in Table 5-2, and statistically it is positively related to overall job satisfaction, but unrelated with satisfaction with wage income. The

results indicate that interpersonal relationship is an important indicator of job satisfaction for both formal and informal employees. At the same time, good interpersonal relationship makes formal employees much more satisfied with overall job than informal employees.

Chapter 6 Conclusion and Policy Implications

The importance of a study on informal employment in China using International Statistical Standard Definition (ISSD) is confirmed by our findings that informal employment represents the majority of workers in China and that these informal employees receive lower wages than their formal counterparts. Workers engaged in informal employment accounted for 70.99% of all people employed, which means that informal employment was the main way of obtaining employment in China in 2006. Furthermore, informal employees have a much lower mean wage than that of formal employees. The mean wage ratio of formal to informal employees is 1.44, which verifies the conclusion of International Labour Organization (ILO) (2002) that informal workers' incomes are very low in general. Therefore, informal employment carries serious policy implications.

Unfortunately, there have been few empirical studies on the details of informal employment to provide data for policy makers. Therefore our aim in this thesis was to provide much-needed, more accurate, and widely acceptable documentation on informal employment in China based on the basis of ISSD adopted by the 17th International Conference of Labour Statisticians (ICLS), which is introduced in Chapter 2.

In Chapter 3, to accomplish the goal mentioned above, we relied on the CGSS

2006 data and used the Lee (1983) model to ascertain the employment status probabilities and the determinants of monthly wages of formal and informal employees in China. Our findings show that employment status probabilities are mainly determined by gender, age, experience, ethnic status, education, region, and migrant status, while gender, education, region, firm size, city size, and migrant status are important indicators affecting informal employee's monthly wages.

Based on our results, we shed light on the differences of probability of employment status and determinants of monthly wages between formal and informal employee. The main implications drawn from our analytical results are as follows.

First, our results provide evidence that there is not only gender wage discrimination but also gender employment status discrimination in China for all employees. An "equal pay for equal work" policy should be promoted to decrease gender wage discrimination; and policies (e.g. reward system) encouraging enterprises to provide formal employment opportunities to individuals without regard to sex can be implemented to decrease gender employment status discrimination.

Second, our results show that education has a positive effect on the probability of becoming formal employees, and plays an important role in explaining monthly wages for both formal and informal employees. It implies that the educational environment can

be optimized to promote individual education levels, which could improve not only people's monthly wages, but also their employment status. Furthermore, the wage gap decomposition results show that education accounts for a large percentage of the wage gap, so promoting education among workers will also contribute to reducing the wage income inequality.

Third, both probability of employment status and employees' monthly wages differ significantly among regions, which implies an imbalance in regional development in China. The considerably expanded development gap between the east and the rest of the regions could become a long-term problem and affect China's labour policy. Fundamentally, the central government should create more formal employment opportunities and improve the income level in the middle and west regions. For example, the Western Development project should be promoted more effectively to put more state investment into these two regions to develop the infrastructure, ecological environment and education.

Finally, it is evident that domestic migrant workers were more discriminated against on the basis of employment status than their non-migrant counterparts, although they can earn higher monthly wages by working much longer hours. This finding suggests that even for migrant workers who can move throughout the country to seek

employment, domestic migrant workers cannot integrate into the societies they moved into. The Hukou system has been modified greatly to provide flexibility; however, it should be abolished to realize the true equal labour movement.

In Chapter 4, we employed the approach of Bourguignon et al. (2001) to decompose the earning differential between formal and informal employees in urban China into characteristics, employment and working hour effects with the latter two comprising the segmentation effect, the possible selection bias problem is corrected by using the Lee model. The main conclusions are that informal employees are suffering from segmentation, and they worked more but earn less, meaning that the earning differential should be bigger if they work the same hours as formal employees. This is especially true for the female informal employees. Employment policies to incorporate segmentation issues; e.g., gender segmentation, are needed in urban China. The segmentation, which prevents individuals from taking advantage of economic opportunities, must be identified and its adverse effects minimized. However, because we only have the 2006 data in hand, this research could not make clear how the situation has changed from 2006. This will be a future research theme.

In Chapter 5, the ordered probit model is employed to estimate the factors affecting formal and informal employees' overall job satisfaction and wage income satisfaction.

Based on the results we found in this thesis, we can conclude that the findings come from previous studies are applicable to formal and informal employees in different ways, and the informal employees in China are not as satisfied as their comparisons, their job satisfaction differ in several aspects, e.g. health; wage income and comparison wage income; long time work frequency; industrial composition; economic status; interpersonal relationship, calling for different policy to make the formal and informal employees more satisfied with their jobs, especially the informal employees.

As mentioned above, empirical analyses and interpretations provided in this thesis only rely on one set of cross-section data (CGSS 2006); therefore, this thesis does not fully capture the complexity of informal employment; however, access to more recent quality data is still very much restricted. It is thus difficult to draw inferences for the most recent period and reflect the dramatic changes in the labour market conditions, and this is an area for future research. Nevertheless, the results we present in this thesis represent an important first step in exploring informal employment issues in China.

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