

**Towards Gender Equality in China's Economic and Social Transformation:  
The Rise in Informal Employment and its Impact on Women  
During China's Economic Transition**

Project Report  
The Heinrich Boll Foundation (Beijing)

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April 2009

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## **Introduction:**

### **The Rise in Informal Employment and Its Impact on Women**

#### **During China's Economic Transition**

**Sarah Cook**

Over the past three decades China has experienced a dramatic transformation from a centrally planned economy to one in which goods are produced and allocated largely in response to market forces. It has also undergone structural transformations – from a largely agricultural to a more urbanised and industrialised economy; and from high to low fertility with implications for the demographic structure of its population. These multiple transformations have significant implications for what work people do and the remuneration they receive for their labour. By extension, they affect the incomes and welfare of workers and their families.

In this changing environment, China's labour allocation system has changed beyond all recognition: starting from a regime where jobs were distributed by the state, with limited mobility for rural labour out of agriculture, market forces now largely determine both the allocation of jobs and the returns to labour. With the dismantling of state welfare provisions that protected the urban workforce, labour is exchanged on an increasingly competitive market with limited social protections. A number of scholars have examined the process of labour market transition, exploring the extent to which Chinese labour markets have become more competitive, with returns to labour reflecting productivity and human capital. Some studies have examined the distributional outcomes of these changes, with increasing inequalities documented as a pervasive feature of China's recent development path.

Only recently have the consequences for rising urban poverty and the marginalisation of the urban poor become issues of scholarly and policy concern. A

significant body of literature has explored the exclusions of migrants from the urban labour market. Less researched has been the growth of poverty and exclusion among urban residents. Initially this was viewed as a transitional problem affecting those laid-off during the restructuring of state owned enterprises. Increasingly, however, the growth in unemployment and the insecurity of jobs among a wide-spectrum of workers including new labour market entrants, and particularly among those with low levels of education, has been recognised as a long term issue for policy concern. Reforms that have created more 'flexible' labour markets have also led to greater insecurity of jobs and incomes, with limited social protection, for many vulnerable workers. More research is needed to understand who these workers are, what jobs they do, their work conditions and the implications for themselves and their families.

Among those affected, it is likely that women are disproportionately disadvantaged by these processes. Plentiful evidence exists for the differential impacts of state sector restructuring on women, of women's declining formal labor force participation and emerging earnings gaps. We might therefore expect that women are disproportionately situated in more flexible, and ultimately more vulnerable, parts of the labour market, with implications for their earnings, working hours and conditions, and welfare. The lens of gender offers a powerful tool for understanding the differentiated impacts of these transformations. The reproductive role of women, a deeply entrenched gendered division of labour, together with gender biases in public policies and an emergence of discrimination within labour and other markets, all contribute to differential processes and outcomes for women and men. The implications of these processes for women's labour force participation, earnings, time use and access to social protection are important considerations for current policy discussions aimed at developing a comprehensive social protection system.

This report presents findings from a research project funded by the Beijing office of the Heinrich Böll Foundation designed to explore these issues. We aim to better

understand the gender consequences of China's economic transition through an investigation of the changing patterns of employment and their impacts on women. The papers presented here explore the extent to which changes in China's urban labour market have led to a rise in 'informal' employment, and its implications for different groups, particularly women. We ask to what extent have some jobs in urban China become less secure with limited if any social security or other protection; and whether women are more likely to be in such 'informal' employment?

A major challenge to answering these questions revolves around the data and definitions required to understand informality in the Chinese context. What set of criteria or indicators can best capture formality or informality of employment? Initial studies that attempt to address the issue of informalisation tend to fall into two categories: one set involves analyses of labour market trends using aggregate data which does not enable us to differentiate between types of employment or by worker characteristics including sex. A second are small-scale case studies, often involving the evaluation of community level employment creation programs which provide insights into particular circumstances, but tend to have limited value for assessing the general trends in employment even at a local level, and rarely provide comparable information on men.

The papers here use data from three surveys which provide a rich and high quality source of information on the work of individuals and household members. These are: the China Urban Labour Survey Round 2 (CULS2); the China Household Income Panel Study (CHIPS); and the China Health and Nutrition Survey (CHNS). While not specifically designed to examine questions of informality, reasonable definitions of informal employment status can be captured in the data.

The papers identify the level of informal employment, and its characteristics (earnings, hours worked, social security coverage) particularly disaggregated by gender. They examine the correlates or determinants of informality, including for example the role

of age, education and household demographic structure on employment outcomes. Understanding these issues helps to illuminate who bears the transitional costs of reform; and how women fare in this process relative to men; as well as the longer term processes of labour market development and how they are gendered. From a policy perspective, it is important to understand whether the observed informalisation is a short term transitional process associated with restructuring, or whether there is there evidence of newly emerging and persistent forms of informality and gender disadvantage.

The remainder of the report is organised as follows. Part 1 provides an overview of the literature on the changing nature of China's labour markets, the rise in informality and its implications for women. The paper critiques the conventional economic approaches to analysing China's transitional labour markets, and argues that these have contributed to a neglect of informal employment in the literature and by extension among policy makers. The paper highlights the importance of institutional factors which underpin real labour markets, and which affect distributional and welfare outcomes. The nature of gender relations and the gender division of labour are critical institutions which structure women's labour supply; these institutional arrangements need to be incorporated into analyses of labour market development.

The following three sections provide evidence from the household survey data. Part 2 by Sarah Cook and Ni Yuan uses a longitudinal data set to examine changes in women's employment over time, focusing on the question of whether women are more likely than men to shift from more to less formal employment, and why. The results point to an increase in informal employment, with women more likely to be employed informally. Gender pay gaps exist in both formal and informal work, but interestingly are larger in the informal sector – suggesting that even within informal employment men are able to access the higher paid or better jobs. Education is an important determinant of employment outcomes for both sexes. Improving education and skills may therefore assist workers in entering formal employment, and given women's lower education levels

overall this may be particularly beneficial to women. The paper also attempts to examine whether household demographic factors (including having a child or elderly family member) affects women's employment outcomes. While these variables do seem to influence whether or not a woman is in the labour force, they do not have a significant impact on being employed informally. An effort to explore whether the spouse's characteristics affected employment decisions suggests that the husband's characteristics (such as education and employment status) may affect the wife's, but that this does not happen in reverse.

Part 3 by Deng Quheng utilises the 2002 urban data from CHIP (China Household Income Project) to disaggregate informal employment in urban China into two mutually exclusive categories, informal wage work and self-employed. It analyzes the factors which lead individuals into different employment categories, and finds that worker characteristics do not fully explain entry into employment categories, suggesting barriers to formal employment, and an inefficient allocation of labour. A decomposition of the earnings gap among the employment categories lends support to this claim. Decomposition results indicate that the earnings differentials between formal and informal wage earners are primarily caused by unexplained factors, or market segmentation. However, differences in characteristics fully account for the earnings gap between formal wage earners and the self-employed. Women in informal employment have the lowest earnings levels. Female informal wage earners suffer most from segmentation while the poor labour market performance of self-employed women is attributed to their unfavourable characteristics, such as lack of education.

The final section, Part 4, by Sarah Cook and Meiyang Wang uses data from a 5 city study of employment undertaken in 2002 to examine similar questions of informality and women's work. The paper first identifies key aspects of informality commonly accepted in the literature, and explores to what extent these appear relevant to the Chinese context.

In the survey, a significantly higher proportion of women drop out of the labour market; fewer women have social security coverage, self-employed women work longer hours but hourly wages are lower. Examining differences between formal and informal work, we find that women under 25 are more likely to be in formal employment than men; however, as men increase their labour force participation this picture is reversed. Women with lower educational levels (primary and junior high) are more likely to be in informal employment; at higher education levels the difference between the shares of men and women in formal and informal employment disappears. Women work marginally fewer hours than men but earn significantly less – with the largest gap being found in informal employment. There is also a large gap in social security coverage between formal and informal workers; this applies to both men and women, with a relatively small gender gap for all types of insurance.

The results contained in these studies point to the need for public policies to address the constraints that women face in accessing productive and remunerative employment. This is important not only for women themselves, but for the welfare of their household members, for the education of their children and the care of the elderly. Women still face barriers to entry into formal employment; this occurs throughout their working life, and is not just associated with transition. As employment becomes increasingly informal and flexible, men are also entering this sector of the labour market leading to a large gender gap even within informal employment. The factors that underpin these processes are widespread and not unique to China. They need to be understood through improved data collection focused specifically on informal employment, as well as qualitative in-depth research focusing on the institutional arrangements that underpin how labour markets function, and particularly the constraints women face in balancing their reproductive roles and labour force participation.

These results are complemented by the associated study led by Xiao-yuan Dong (Dong et al. 2009) which focused on women's unpaid labour within the household, and

investigated the impact of labour market and demographic changes on women's roles as care-givers and care-recipients. Ultimately, the interactions between what is happening in both the paid and unpaid 'economies' are of particular significance. With the decline in the formal 'care economy' and the marketisation of services associated with household and social reproduction, there are inevitable impacts on women's labour supply and the kind of work they may seek. Women (particularly in low income households) may face pressures to work in more flexible ways in order to balance family needs for time and income.

These research findings are important for shaping the current reform priorities of the Chinese leadership – the development of a comprehensive basic social protection system. Such a system needs to cover low-income workers regardless of their type of employment or lack of social security contributions. It also needs to address the constraints on women's access to more remunerative employment through the rebuilding of socially provided institutional arrangements to support care of children, the sick and the elderly. Only through the integration of these key gender concerns into public welfare policies, together with efforts to improve education and training opportunities for women, and the removal of incentives to employers to discriminate against women in formal employment, can the situation of the deteriorating and disadvantaged labour force position of low income women be resolved.

The research team thanks the Heinrich Böll Foundation, Beijing Office, for their financial support, and especially Katrin Altemeyer, Zhu Yi and Kimiko Suda for their encouragement and assistance. We are grateful to Martha Chen, Rachel Connelly, Xiaoyuan Dong, James Heintz, Kalle Hirvonen and Margaret Maurer-Fazio for valuable comments and suggestions on different parts of the project.

## Part 1:

### Informality and Gender: Challenges to China's Labour Market Transition

Sarah Cook

#### Abstract

This paper examines, first, the ways in which China's reform process has led to an increasing informalisation of urban labour markets and, second, to what extent this process is gendered. The first part of the paper focuses on China's labour market transformation and discusses why the rise of informal employment has been so neglected in the literature. Based on macro data that point to the pervasiveness of informal employment in urban China, the challenges for conceptualising and measuring 'informality' in the Chinese context are explored. The second part of the paper focuses on the consequences of such informality through the lens of gender. A growing body of literature on the gender dimensions of labour market transition recognises that outcomes (in terms of access to employment, earnings and social security coverage) for women are generally inferior to those for men. By extension we might expect that women are more likely to be engaged in informal employment. Following a review of the existing evidence for women's growing informal activity, the paper concludes by discussing the potential policy implications of these informalisation and feminisation phenomena.

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#### Acknowledgements:

This paper is part of a project on **The rise of informal employment and its impact on women during China's economic transition** funded by the Heinrich Böll Foundation's Beijing Office. We are grateful to HBF for its financial support, and to Professor Xiao-yuan Dong for her support and collaboration on the project, and to other members of the research team, particularly Quheng Deng, Meiyan Wang and Ni Yuan. I am also grateful to Kalle Hirvonen for research assistance, and to participants at seminars at CASS, IDS and Nottingham University for helpful comments at various stages of the project.

## **1 Introduction**

Over the past three decades China's reform and development has accelerated at an unprecedented pace, taking the country from a centrally-planned economy, largely closed to foreign investment and international trade, to a remarkably open and globally integrated 'workshop of the world'. This process of liberalization has transformed the structure of the labour market and the nature of employment for millions of workers. In the state sector, reforms were initially slow, but speeded up rapidly from the mid-1990s when state enterprises were restructured, a process that has continued into the period following China's accession to WTO (Knight and Song, 2005; Meng, 2000). These changes most directly affected workers laid-off from bankrupt or down-sized enterprises. By extension new job entrants in urban areas, and the millions of migrants seeking work in cities have also seen changes in their work opportunities and conditions.

Academic and policy debates on China's labour system reforms have tended to focus on the extent to which the urban labour market has become more competitive, as assessed against a neo-classical model where wages reflect productivity and returns accrue to education and experience. Clearly China's labour markets are still far from 'perfect' by the standards of such models, with institutional constraints on mobility and limited portability of social security benefits. The dualism between rural and urban sectors - long enforced through the household registration system - continues to underpin these rigidities. Policy implications drawn from such studies tend to focus on the need for further liberalization and the removal of barriers to mobility. Calls for greater flexibility in employment are, however, often at odds with other policy priorities – the well-being of the population (*xiaokang*), the maintenance of social stability and achievement of a 'harmonious society' (*hexie shehui*). These goals are perceived to be threatened by laid-off workers protesting against the lack of benefits, by rising unemployment and by the weakness of the social security system in protecting the population against income or consumption shocks.

Despite some persistent labour market rigidities, increasing numbers of workers operate in a highly competitive environment. At one end, are highly trained, skilled and experienced workers, increasingly with overseas degrees and experience, entering the capital and skills intensive hi-tech and business sectors. Of primary concern for this paper are those at the other end of the earnings spectrum for whom employment has become increasingly insecure or hard to obtain: those laid-off from state sector jobs, new labour force entrants with limited qualifications or experience, and migrants from the countryside. Increasingly these groups compete for a range of low-wage jobs with limited if any social protection.

What happens in the labour market is critical to the social consequences of China's remarkable growth. Labour is the main asset of the working poor, and their access to employment is the principal route through which they can share in the benefits of economic development. In the absence of a comprehensive social security system, their livelihoods and the health and well-being of their families depend on the ability to earn a basic income. These social consequences can be analysed most powerfully by examining the gender differentiated impacts of these transformations. Women face multiple barriers in access to employment on equal terms with men. These include their reproductive role and a deeply entrenched gendered division of labour which an era of egalitarianism failed to fundamentally change; gender biases in public policies and an emergence of discrimination within labour and other markets.

This paper is divided into two main sections. The first part discusses the rise in informal employment and the challenges this creates for understanding China's labour market transformation and its economic and social consequences. The second section focuses on the gender dimensions of these labour market changes, examining the evidence for the extent to which women are moving into informal forms of employment, and outcomes in terms of earnings and social protection. In the conclusion I discuss the research and policy implications of both these phenomena – the informalisation of employment and the growing concentration of women in more marginal or informal types of employment.

## **2 The Challenge of Informality for China's Changing Labour Market**

### **2.1 Informal Employment and its Rise in Urban China**

China's transformation from a closed, planned economy to the leading global manufacturer of export products has entailed a restructuring of economic and social organisation on a massive scale. In the dominant economic development and growth literature, it is widely assumed that reforms aimed at securing free and flexible labour markets should generate the labour-intensive growth trajectories necessary for poverty reduction. At first glance China may appear to fit this pattern: it has experienced rapid growth, with an expansion of labour intensive production and a commendable rate of poverty reduction. However, the labour elasticity of growth has been relatively low. Furthermore, job creation alone may not be sufficient: the nature and quality of jobs, and their productivity, are critical for generating equitable development outcomes (Rodgers, 2008). An increase in insecure, low productivity jobs that generate low returns, in the absence of wider social protection mechanisms, may not guarantee even minimum livelihood security to workers and their families. Little is known, however, about the growth and extent of such employment in urban China.

By contrast, there is a vast literature on 'informal' employment in developing economies dating back to the 1970s. Labour employed in small scale enterprise, petty production and trade, activities with minimal barriers to entry, requiring little investment but with low returns, were initially viewed as part of the structural transformation from traditional, subsistence livelihoods to a modern economy where workers would find work in a 'formal' sector, with stable jobs and incomes, and some degree of social protection. Debates existed over the nature and function of the 'informal' sector – as a safety net providing basic livelihoods to 'surplus' rural labour, as a transitional mechanism smoothing the transformation to a modern society, or as a subsidy to the formal capitalist sector (Chen, 2008).

The conceptualisation of informal employment has continued to evolve: dualistic notions of formal and informal ‘sectors’ have been displaced by more nuanced analyses of complex employment relations, mobility between types of employment, and linkages between more and less formal work – through value chains, sub-contracting, or other organisational forms. Competing views have resurfaced in the past decade – over whether or not such employment reflects a voluntary choice for workers, or a last resort. Neo-liberal economists emphasise the benefits of labour market flexibility, and the rational choice of individuals and firms selecting ‘informality’ to avoid excessive state regulation; for them, the informal sector may be a dynamic source of job creation. To others, the persistence of large numbers employed in such low-productivity activities is an anomaly, contradicting predictions of development theory; while to others it is a persistent, structural feature of economies that needs to be recognised and analysed on its own terms.

Whatever the perspective, the reality increasingly seems to be that types of employment characterised as ‘informal’ – temporary and irregular, with low wages and productivity, and lacking any form of protection – are not decreasing, but rather are remarkably persistent and probably permanent (Chen, 2001). In many countries in Asia and Africa informal employment is as much as 80% of total employment (Chen, 2001:71). In countries affected by the 1998 Asian financial crisis formal employment fell. These trends have important implications at the micro-level for the livelihoods of millions of poor workers, both men and women, and their families. It may also affect the fiscal resource base and institutional arrangements of the state which are particularly important for the financing of social security.

In the case of China, the notion of informal employment has been largely absent from the labour market and development literatures. In the 1970s observers described the emergence of a ‘second economy’ consisting of small enterprises, sideline activities, petty production and exchange that had managed to survive or revive after the political turmoil of previous decades, operating within narrow limits tolerated by the state. Such activities

were sometimes part of the survival strategies of those living at the margins of a tightly controlled society; but were also evidence of nascent entrepreneurship pushing the limits of such controls, and later blossoming into China's private sector.

During the 1980s, reforms in rural organisation, an increasing demand for labour in cities and the gradual loosening of controls on mobility, created a situation where the rural population – no longer governed by the commune – could diversify its income-generating activities. A multitude of employment types emerged: household sidelines and individual household production (*getihu*), TVEs under collective or quasi-private 'red-hat' ownership; small private enterprises (*siying qiye*), etc. These activities and their related employment arrangements and relationships pushed at the limits of state sanctioned activity, but the state found ways to embrace some of them, gradually regulating and legitimising them, or incorporating them within law and policy.

New and diverse forms of economic activity, on the margins of what was officially sanctioned by the Plan, thus emerged out of the shadows as the state withdrew from some spheres of economic organisation. This can be seen most clearly in the case of migrants. A gradual relaxation of mobility restrictions on farmers enabled them to sell produce to urban residents. Rising incomes and the demand for new products created further opportunities for their labour: food preparation, repairs of shoes and bicycles, collection of bottles or other items for recycling, and petty trade, started to proliferate. Like informal work anywhere, such employment was characterised by ease of entry, low skills, limited capital requirements and minimal returns. Others moved into factories – enterprises that may have been 'formal' but where employment conditions for migrant workers offered none of the standard legal protections. By undertaking jobs in construction, street trading, garbage collection and other less desirable service work rejected by urban workers, the migrants themselves – rather than the work they did – became defined as 'marginal', even 'illegal'.

While the activities undertaken by migrants and other marginal workers readily lend themselves to the label of ‘informal’, this terminology was not widely adopted in China. Instead, a set of institutional arrangements that essentially protected the urban worker meant that the formal-informal dichotomy was less relevant than the rural-urban dualism which structured the types of employment, status, rights and recognition afforded to migrants or other marginal workers.

It was only once the urban workforce entered this arena of marginal jobs that we see incipient recognition of informal employment as a policy issue. This is most directly linked to the massive layoffs precipitated by Zhu Rongji’s state enterprise reforms from the mid-1990s. The radical restructuring created a level of unemployment not previously seen in the People’s Republic, which in turn generated worker protest and changing class identities, and a potential political challenge to the regime (Blecher, 2002; Lee, 2008). The government responded first with transitional measures to address the basic needs of workers directly affected by restructuring\* and to promote re-employment and job creation. New types of active labour policies were introduced, with massive programmes of skills training, the establishment of ‘labour exchanges’ to assist workers in finding jobs, and the creation of ‘community-based’ employment schemes. Many of the new ‘jobs’ created in this way were short term, part-time and designed to be transitional. Nonetheless, it soon became clear that high levels of unemployment would remain a feature of the reformed economy; that many working people were no longer earning enough to provide an acceptable living standard, and that job creation was insufficient to re-employ redundant workers and absorb new labour force entrants. This was part of a more fundamental recognition that ‘standard’ (*biaozhun*) employment with long term contracts and social security could not remain the sole or even perhaps the ‘ideal’ type of work.

Supplementing these labour market measures, a second strand in the government’s response was the expansion of new forms of social insurance and protection. Contributory

pensions, unemployment and health insurance programmes were subsequently introduced for urban employees; and are now in some cases and places being expanded to dependents, self-employed and migrant workers. Social assistance or cash transfer programmes (notably the minimum living standard guarantee or *dibao*) were rolled out. More recently a number of new labour laws and policies have been introduced aimed at promoting employment and protecting workers through contractual relations.

Throughout this structural adjustment process the state-led terminology was focused on laid-off workers (*xiagang zhigong*) and reemployment (*zai jiuye*). The political sensitivity of rising unemployment (*shiye*) needed to be downplayed<sup>†</sup>; where laid-off workers were unable to get new jobs, this was often blamed (even by the workers themselves) on their low 'quality' (*suzhi*) and unsuitability for work in the new competitive labour market (Cook and Jolly, 2000; Blecher, 2002). While many of these workers found what can only be described as *informal work* to generate incomes, such activities went largely unobserved, often unrecognised as 'work' and therefore under-reported (Solinger 2001a; Lee, 2007).

## **2.2 Analysing China's Labour Market: 'Stylised Fact' or 'Theoretical Make-Believe'?<sup>‡</sup>**

Only recently has the terminology of informal employment (*feizhenggui jiuye*) entered the academic and policy discourse in China, and even now with very little prominence. Why has the notion of informality received so little attention? To a large extent, this lack of recognition is political. The challenges posed by labour market changes in a socialist economy included the threat to the political legitimacy of the worker state's; the ideological difficulty for the Party in accepting rapid private sector growth; and the

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\* For details of these transitional measures see for example Cook (1999), Solinger (2002).

<sup>†</sup> Results from a major survey of unemployment in 66 cities by MOLSS in 1999 were not released, and the data has not been fully analysed, due in part to sensitivity over the high levels of unemployment found.

<sup>‡</sup> As discussed by Heintz, 2008.

practical aspect of adapting a relatively inflexible administrative system to the new realities. Once the reality emerged, the government deliberately adopted the more positive term of ‘flexible’ employment (*linghuo jiuye*) rather than the negative sounding term ‘informal’ to refer to such part-time, often low paid and unprotected work. Two further explanations for the limited recognition of informality are proposed here: the first based in the theoretical approaches taken to analyse labour markets, and the second in the inability to capture in existing statistics these new employment forms and categories. Together the limits of theory and empirical analysis create a gap between the frameworks or models and the reality.

Two main economic approaches have dominated the analysis of labour markets in developing countries, and this applies also in China: these are simplistically characterised here as the ‘stylised facts’ of development economists, and the ‘theoretical make-believe’ of labour economists. Development economists building on Lewis’s initial insights focus on China’s structural transformation and the transfer of its vast supply of ‘surplus’ labour from agricultural to non-agricultural activities. At an aggregate level, economic restructuring has involved a rapid shift of labour out of low productivity agriculture, into off-farm rural employment and TVEs, and subsequently into the cities. This analysis is linked to a particular view of modernity through which industrialisation and the growth of manufacturing will provide jobs to absorb the rural labour force, putting countries on a path towards capital accumulation, investment and development. Such processes provide a major impetus for labour market transformation, as well as for deeper social and economic change in ‘real’ markets, with improvements in incomes, consumption and well-being.

The development literature on structural transformations in other parts of the world since the 1970s has tended to incorporate some analysis of informal employment as part of this process. The ‘dualist’ perspective saw informal employment as a stepping stone on the route towards more formal, ‘modern’ jobs. In China, however, the policy and academic debates were dominated by the more deeply entrenched institutional dualism of Chinese

society – the rural-urban divide. A huge body of research, policy and more recently activism has been devoted to aspects of rural urban migration. Development economists have focused on the structural economic and demographic transformations associated with this change, including the obstacles created by the household registration (*hukou*) system. This rural-urban division, or the distinction between migrant or peasant workers and urban workers, has thus been more significant in the Chinese context than the informal-formal dualism though mapping onto similar territory.

The second major analytic approach has been the work of applied labour economists who have examined the evolution of China's labour market since the 1980s as the system of labour allocation was relaxed, wage and price reforms and some degree of managerial autonomy over employees were introduced, and more diverse forms of ownership developed. A rich body of literature has emerged, exploring a central question of how far China's system of labour allocation and reward has moved towards a neo-classical, competitive 'labour market'? Researchers have documented moves towards a more competitive labour market in which the role of social networks and political connections has diminished, education and skills are increasingly rewarded, and productivity has increased. Overall, with some variation in results depending on data, the story is of a trajectory from allocated labour with low productivity and few rewards to one increasingly responsive to market signals and incentives, with greater rewards to education, and greater mobility for workers.

While these two bodies of literature contribute greatly to our understanding of transition processes, we are still left with the question 'transition to what'? What is the expected evolution of China's labour market? The rise of informality needs to be considered as part of this process, but does not easily fit within existing analytic frameworks. Instead, it leads us towards a stronger focus on the institutional underpinnings of 'real' markets, and an analysis of the broader social context in which labour markets are embedded.

### 2.3 Data and Measurement: How Big is Informal Employment?

The second argument for the invisibility of informal employment in debates in China is the nature of data which do not allow for easy identification of work types falling outside 'standard' definitions.<sup>§</sup> At an aggregate level, the main approach for calculating the extent of informality in the urban labour force is a 'residual' method, which calculates the difference between the total labour force (based on census and labour force survey data) and the administrative reporting by enterprises of registered employees. In 1995, just before enterprise restructuring started, urban employment was approximately 190 million, of which 144 million (76%) were state and collective employees; subtracting other reported private sector employees the 'gap' of unreported workers known to be in the labour force was just over 10%. These could loosely be classified as 'informal'. 1998-2003 saw the rapid decline in the share of reported employees. By 2004 state and collective employees had been reduced by half to around 66 million; registered ('formal') private sector employment grew more than three fold while total urban employment had increased to around 265 million. This meant that in 2004 approximately 105 million or just over 40% of workers were loosely classified as 'informal' (SSB, 2007; Wang, 2009). By 2006 using these calculations the number of missing workers remained about 105 million but as a reduced proportion of 37%. Also using SSB data, Zhu and Yao (2008) use different definitions and methods to provide an upper limit of 'flexible' employment, increasing from 51.7 million in 1997 to 156 million in 2004, and a lower limit rising from 56.13 million to 116.1 million.

A second method for estimating informality uses sample survey data to identify job characteristics. Various data sets have generated estimates of informal employment in the region of 35-50% of urban employment, and 80-85% of migrant employment (Wu and Cai, 2006; Cai et al., 2006), with some indication of a recent downward trend. Using a

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<sup>§</sup> Similar problems are also evident around estimates of China's unemployment rate: see for example Giles et al. (2005) and Solinger (2001b).

large 66 city survey collected by the Ministry of Labour and Social Security in 2002 Wu and Cai (2006) use three definitions for estimating informal employment in China which give results of 107.65 million, 120.57 million and 124.06 million workers respectively.

Despite the adoption in some surveys of ILO protocols designed to better capture informal work, current data and its interpretation is problematic. Questions do not fully reflect the Chinese context. Indicators of formality such as contracts and social security, for example, miss many public sector workers who have secure conditions though no formal contract. The residual approach captures a range of ‘non-standard’ forms of employment, which may be ‘informal’ to the extent that they do not conform to certain definitions and legal requirements, but may not be precarious, insecure or poorly paid. Highly-paid ‘freelance’ professionals may be categorised along with day contract labourers. We know from interviews that some of the most precarious forms of work – the activities of the most vulnerable people – are likely not to be considered ‘work’ and excluded from survey data. Thus biases could be either to under or over estimate the phenomenon. In general this combination of conceptual and measurement problems makes it difficult to understand the precise nature of the jobs, work conditions and social protection status of many workers. From a policy perspective, a clearer conceptualisation of the issues, improved definitions and more finely tuned ways of disaggregating employment types, are essential for a better understanding of China’s labour market and social protection needs.

#### **2.4 Real Markets, Institutions and Informal Employment**

Given the conceptual and methodological limitations described above, how should we attempt to understand the informalisation of labour in China, and what research gaps need to be filled? Returning to an earlier point, the institutional underpinnings of ‘real markets’ have been neglected features of most analyses. These often enter the analysis as the unexplained residual or evidence of market imperfections or failure.

For socialist states, creating market-based systems entails large and politically difficult adjustments of institutions, including the structure of economic production and the distribution of benefits to workers. These changes impact on the daily lives and livelihoods of tens of millions of Chinese workers. The renegotiation of social contracts associated with this transition, and the reconfiguration of relations between state, household and market, are all part of changing institutional arrangements within which real markets are embedded. In such contexts, social factors play a role in shaping markets, in determining who moves in and out of different forms of work, and the pathways along which entry and exit take place.

In the above discussion, entry into informal work has focused first, on factors related to economic transformation and rural to urban migration, with migrant labour entering the urban workforce and creating competitive pressures at least at the lower end of the income spectrum; and second, as a result of ‘shock’ reform measures which pushed ‘formal’ or protected workers in some cases into low income jobs previously done by migrants (service, petty trade, garbage collection). Another part of the story relates to growth: China’s strong export growth and the demand of factories for cheap labour; rapid urbanisation and infrastructure development requiring labour in construction; and increased incomes and consumer demand resulting in an increase demand for services. Within these activities we see different degrees of informality: the value chain for export manufacturers for example may include both formal and informal factory-based work with varying degrees of social protection, and highly informal and unprotected sub-contracting or out-sourcing arrangements. In construction, various arrangements for ‘contracting’ labour through middle-men or gang leaders (*baogongtou*) often leave workers vulnerable to abuse even to the extent of not being paid or becoming essentially bonded labour. In the service sector conditions of employment tend to be insecure and unprotected. The nature of informal work, and the types of vulnerability to which workers

are exposed, thus ranges along a spectrum with the least visible ‘workers’ often being the most vulnerable.

The degree of vulnerability faced by such workers is constructed both by the work they do, and by their status. Migrants are particularly vulnerable as they lack status and entitlements in their place of work, have limited if any claims to social protection from the local authorities and few mechanisms of recourse in the event of abuse. Changes in the household registration (*hukou*) arrangements and efforts to extend social insurance coverage may shift the problem from one associated with ‘migrants’ to one of the nature of employment. However, mechanisms for enforcement of standards set out in labour laws and other legislation will take time to take effect.

Another way of defining informality, or of understanding entry into the ‘sector’, is in terms of degrees of regulation and legality. For some, it is viewed as a ‘choice’ by employers or workers to avoid burdensome regulations or taxation. Informality may also arise in the absence of relevant institutions for enforcement of formal rules. In the Chinese context, there is a large volume of relevant laws and regulations, generally poorly enforced. Other regulations relating to registration, tax or other administrative issues may – in the absence of impartial courts or corrupt government systems – lead enterprises to avoid formality and reduce their relationship with the state. Thus a variety of formal and informal institutional arrangements influence the behaviour of entrepreneurs and workers, creating varying forms of informal employment.

An institutional approach that identifies the concrete realities of specific arrangements on the ground would provide both a better understanding of informal employment during a process of rapid structural transformation and help to illuminate the institutional dynamics underpinning market development. Questions should focus on understanding the different logics behind informality of employment (e.g. as subsistence or survival; to maximise returns; as means of shifting costs and risks, or avoiding legal obligations). Such an

approach would also call for understanding both formal institutions as well as the range of non-state and informal institutions or forms of regulation which shape labour relations and outcomes. Governments clearly play a key role in regulating the economy, both through when it chooses to intervene and enforce, and when it does not. Community and household organisation, including gender relations, as well as the relation between productive and reproductive activities are further examples of the institutional arrangements and social relations within which labour markets are embedded.

### **3 Gender and Informal Employment in Urban China**

#### **3.1 Women in Informal Work: Does it Matter?**

Almost universally, women are over-represented in informal employment. Where high and rising levels of informal employment are found, there is extensive evidence showing that women are more likely to be employed informally (Chen, 2001). Globally and over time, men's labour force participation rates are more stable than those of women. Much greater variation in labour force participation is found among women who move in and out of the labour market in response to different circumstances.

Such variation is due to a wide range of social, cultural and economic factors. Unlike some parts of Asia, China has few if any cultural and social constraints on women's participation, although these may apply in the case of certain types of employment, or among some ethnic groups. Female labour force participation rates are high, despite a decline in recent years (from around 65% in 1997 to 54% by 2002). While state rhetoric continues to place a high priority on core goals of gender equality, the post-reform story is one of women's labour being perceived by the state and socially as more disposable than that of men.

This relatively less stable position of women in the labour force raises several issues of concern. In general, there is significant evidence of the positive links between women's

work, the well-being of family members including the health and education of children, and economic development outcomes. Women's reduced labour force attachment reduces household incomes often at a time when investment in the younger generation may be compromised, with potential consequences of a transmission of poverty between generations. It reduces the incomes and related social security benefits for women themselves, often compromising their own health care and elderly support, as well as that of other household members.

Gender relations and social support for the reproduction of labour form part of the institutional arrangements within which labour markets are embedded, and which particularly influence women's labour market attachment. The remainder of this paper examines how labour market reforms have impacted on women, and particularly whether women are moving disproportionately into informal employment, or into employment with lower wages and worse conditions. Section 3.2 provides a review of literature on the situation of women working in China's transitional urban economy. The next section then presents evidence from survey data on gender differences in formal and employment informal employment, illustrating aspects of women's disadvantaged status and highlighting some policy implications.

### **3.2 Economic Transition and Women's Work in Urban China**

Any process of rapid development and modernization, such as we have seen in China over the past three decades, brings benefits but is also likely to aggravate pre-existing social and economic inequalities. China is no exception. While many women have benefited from these processes, and men can also be disadvantaged, patterns of relative disadvantage for women are found across most areas of economic, political and social life. In some spheres women have disproportionately borne the costs of reform. Evidence points to a feminization of agriculture and higher lay-offs among female state sector employees. Young female migrants (*dagongmei*) in factory jobs pay a high personal cost

for their contribution to China's manufacturing boom, while women shoulder a heavy dual burden of productive and reproductive work as socially provided care and services are withdrawn.

Under the centrally planned regime, women's labour force participation played a major role in the Chinese government's attempt to advance the status of women and promote gender equality in society, at least in urban areas. Almost all urban working-aged men and women joined the labour force, and the majority of the workforce were employed on a full-time basis in state-owned enterprises (SOEs). Their status as state employees gave men and women access to lifetime guaranteed employment and a wide range of welfare benefits including childcare, education, healthcare, housing, and pensions. Widely accessible childcare services significantly reduced the opportunity costs of women's labour force participation as well as the costs of early child development. These institutional factors made a major contribution to China's impressive achievements in gender equality, and to the broad-based education and health foundations on which economic growth was based. They also gave the urban population economic security for old age.

Among transition economies, China's reforms are seen as highly successful in producing impressive economic growth and reducing income poverty. At the same time, state sector restructuring caused large-scale layoffs and urban unemployment, and a sharp rise in income inequality and urban poverty. These outcomes have disproportionately impacted on women both in their productive roles - women were laid-off at much higher rates than men and experienced greater difficulty finding employment and reemployment; and in their reproductive role through the loss of socially provided services. The gender wage gap widened and labor force participation rates declined more sharply for women than men (for a survey of the literature, see Berik, Dong, and Summerfield, 2007).

The withdrawal of women from the labour force reflects a number of factors. Higher levels of redundancy and low chances of reemployment have resulted in a ‘discouraged worker’ effect. The increasing burden of domestic care may limit women’s employment choices and opportunities. More women thus leave the workforce, or experience shorter or more intermittent paid work careers, affecting their work experience and future job prospects, as well as their capacity to build independent entitlements to health care and retirement benefits (Chen and Standing, 2007). Overall, many women face reduced incomes throughout their lives and a possible loss of economic independence.

Women who cannot afford to leave the workforce face an increasing ‘double burden’ of household domestic responsibilities combined with longer hours for paid work (Dong, et. al, 2006). This ‘time poverty’ disadvantages women further in gaining access to education, training and social networks, widens gender gaps in job performance and wages, and may also damage women’s physical and mental health (Dong et al., 2009). For those without full-time employment, and with domestic responsibilities, the available earning opportunities may be limited to part-time, often insecure work without benefits – that is, informal employment.

In the context of rising informality, we might therefore expect to find women moving into more flexible, but vulnerable, sections of the labour market. This shift may also have been reinforced by government interventions to reemploy laid-off workers. Many of the community or neighbourhood level schemes designed for this purpose created jobs that are typically temporary or part-time, low paid, with few if any benefits and offering no development prospects of moving into better paid employment. For enterprises, competitive pressures and the high costs of adhering to China’s social security provisions, means that employers have increasing incentives to employ workers on a more informal, casual or flexible basis. Given that women tend to be concentrated in low income jobs it is reasonable to hypothesise that women would be disproportionately affected by this

process. In turn, a lack of formal employment reduces their access to social services and other benefits.

Given the limited research on the informalisation of employment, it follows that even less is known about the gender consequences of this process, and its impacts on the welfare of women and their families. Studies that attempt to estimate informal employment using aggregate employment data are usually unable to access sex-disaggregated data. Studies undertaken by the Women's Studies Institute of the All China Women's Federation (ACWF) on the economic status of women provide some indicative statistics. Jiang (n.d.) for example uses Census data to estimate the share of women in informal or irregular employment as 63.7% in 2004, 14.2% higher than for men.

Using the China Urban Labour Force Survey round 1 (CULS1) Giles et al. (2006) examine the categories of workers laid-off or otherwise dislocated by restructuring, disaggregated by gender. While not defining informal employment as a category, they point to the vulnerability of women in the labour market. They find that between 1996 and 2001 60.3% of men and 64.4% of women involuntarily left their jobs; that access to benefits was reduced for middle-aged women relative to men and that household and family characteristics may affect individual labour supply decisions, making it harder for women to re-enter formal employment.

Other studies which directly attempt to examine women in informal employment approach the issue through small-scale case studies, often involving the evaluation of community-level employment creation programmes. While these provide insights into particular contexts and circumstances, they tend to have limited value for assessing the general trends in employment even at a local level, and often do not provide comparable information about the employment of men. The process of informalisation of employment and its implications for women's work and well-being are therefore areas which require further research.

In addition to the data challenges of undertaking such research, however, are the conceptual issues of relating the consequences of unpaid household labour and the care economy to women’s labour market participation. The care economy is another issue which requires research (see Dong et al., 2009), while ultimately what is of concern are the interactions between the paid and unpaid ‘economies’, and their impact on women’s labour supply and labour market outcomes. In the current process of reforming China’s social security system, such research could be critical for integrating an informed analysis of gender concerns into key policy initiatives relating to women’s welfare and economic status. Addressing these issues through better data collection and analysis should help in obtaining a grasp of fundamental questions about the gender dimensions of labour market and other transformations.

### 3.3 Is women’s work increasingly informal, and why?

This section presents results from empirical studies undertaken as part of an initial attempt to address the issues raised above. Using a number of micro-level data sets, we summarise results from three studies on women’s position in the labour market, and specifically whether they are more likely to be in informal employment, why, and with what consequences? The three papers (see this report, Parts 3, 4 and 5) use different data sets and methodologies to examine related questions. The data sets are summarised in Table 1:

	<b>Cook and Yuan (C&amp;Y)</b>	<b>Cook and Wang (C&amp;W)</b>	<b>Deng</b>
<b>Name of the dataset</b>	China Health and Nutrition Survey (CHNS)	China Urban Labour Survey Round 2 (CULS2)	2002 Urban Household Survey Data from China Household Income Project (CHIP)
<b>Longitudinal Year(s)</b>	Yes 1997, 2000, 2004, and 2006	No 2005	No 2002
<b>Coverage</b>	9 provinces	5 cities	69 cities in 12 provinces
<b>Sample size</b>	5294 individuals (urban hhs only)	3500 households (urban residents only)	6835 households

All studies attempted to examine whether women were more or less likely to be in informal employment, and what accounts for the pattern found. The data sets are all of high quality, were designed with different objectives, and thus have relative advantages and limitations for addressing these questions. CHNS has the advantage of being able to explore changes over time since the start of major enterprise reforms. CULS2 has most in-depth data on employment using ILO standard employment definitions.

Each paper uses a slightly different definition of informal employment, depending on how questions were asked in the survey. While we explored various definitions (including using worker characteristic variables such as access to social security as key indicators) all papers ultimately used an ‘enterprise-based’ definition of employment status. (Table 2).

**Table 2      Definition and size of the informal sector**

<b>Method</b>	<b>Cook and Yuan</b> Uses employment status	<b>Cook and Wang</b> Uses employment status	<b>Quheng</b> Uses three different dimensions
<b>Definition: employment status</b>	<u>Informal:</u> Individual self-employment, temporary worker, Paid and unpaid family worker and Other <u>Formal:</u> Employers, permanent employees, employees with contract	<u>Informal:</u> Hired workers without contracts and self-employed <u>Formal:</u> Wage employees with contracts; employers	<u>Informal</u> Employees in private enterprises with less than 100 employees, employees in individual-owned enterprises, self-employed, employees without long-run contract
<b>Size</b>	22% in 1997, 23% in 2000, 33% in 2004, and 37% in 2005 of the total employment in the sample	40.5% (male: 38.4%; female: 43%)	22% of total urban employment in the sample

*Findings by gender*

All data sets have a larger proportion of employed women in informal employment, with women also more likely to drop out of the labour force. From the longitudinal CHNS data, C&Y find that in the formal sector men are older than women; there is no statistical

difference in education. In general (apart from 2006) there is no statistically significant difference in working hours. Monthly wages have been rising substantially during the focus period and men earn more than women; the gender pay-gap seems to have widened between 1997 and 2006. Within the informal sector there is no significant difference in age across genders apart from 2006 when male employees are statistically older than women. The difference in education levels between men and women in informal employment has been shrinking, possibly suggesting that more educated women may be moving into informal work. No gender differences are found in working hours apart from the year 1997, when men worked longer hours.

Comparing the results from the 2005 CULS2 data set, we find that women under 25 are more likely to be in formal employment than men; however, as men increase their labour force participation this picture is reversed. Women with lower educational levels (primary and junior high) are more likely to be in informal employment; at higher education levels the difference between the shares of men and women in formal and informal employment disappears. Women work marginally fewer hours than men but earn significantly less – with the largest gap being found in informal employment.

#### *Findings by formal and informal employment*

All studies find that formal hourly wages are higher than informal. C&Y find no significant difference in age between the two sectors. All three studies find that employees in the formal sector are more educated; this applies also to within gender comparisons. Monthly wages in the formal sector are higher, both for men and women. Informal working hours have been substantially longer through out the sample period of CHNS. Deng also finds that both informal workers and the self-employed work longer hours than formal workers. This finding is consistent also in within gender comparisons. From CULS2 we can also see a large gap in social security coverage between formal and informal workers; this applies to both men and women, with a relatively small gender gap for all types of insurance.

Deng also compared results across formal, informal, self-employed and unemployed categories. He found that the share of men was larger in the formal sector and also among self-employed workers. The share of women was greater in the informal and unemployment categories. His analysis concluded that men are more likely to work in formal employment and women in informal employment, and that women are more likely to be unemployed. Education plays a large role: higher education increases the likelihood for men and women of being in formal employment as against the other three categories. The probability of being in formal work increases with age, peaks at 44 and then declines. Younger people are likely to work in the informal sector, although the relationship is non-linear.

#### *Geographic variation*

CHIPS has the largest geographic coverage: Deng finds that informal wage earners tend to be concentrated in the eastern region while the central region has the highest share of unemployed people. The level of informal employment is generally higher in large cities. This is consistent with the findings from the 5 large cities covered in CULS2 (Fuzhou, Shanghai, Shenyang, Wuhan, Xi'an). In this sample, according to the definitions used, 40% of workers are found in informal employment – higher than those in the other samples. This may in part be explained by more detailed information relevant to identifying informal employment; but may also partially be a result of the sample cities. Among these cities, there is substantial variation between the dynamic coastal cities of Shanghai and Fuzhou, and those affected by state sector restructuring where both informal employment and unemployment are higher. Local employment also plays a role. As Deng finds, the higher the local employment rate, the more likely people are to be formal wage earners. Wage earners in the eastern region enjoy on average substantially higher hourly wages in formal and informal sectors than wage earners elsewhere; hourly wages are higher in large cities for both formal and informal workers, but not for the self-employed.

### *Regression results*

Summarising the results from regression analyses, we find similar results controlling for other variables. C&Y find that women and young people are more likely to work informally; as are those with lower education levels. Selectivity corrected wage regressions show a significant and substantial gender wage-gap which is accentuated in the informal sector. No statistical difference in pay is found for men between the formal and informal sector, but there is a significant sector pay-gap for women. That is, women earn less in both sectors relative to men; and they also earn significantly less in informal than formal employment.

C&Y also attempt to examine whether household demographic variables affect the labour supply of women. The results suggest that that education plays an important role in reducing the likelihood of the husband or wife or both working in informal employment. There are tentative indications that the husband's characteristics affect his wife's labour supply, but that the wife's education or other characteristics do not affect the husband. The CULS2 analysis suggests that demographic effects of having a child under 5 or elderly person in the household affect a woman's labour force participation, but not whether or not she is in formal or informal work.

Deng examined whether there is evidence of segregation between formal and informal employment, by decomposing earnings gaps among employment categories. He found no gender wage-gap in the formal sector. Schooling has a positive effect on hourly wage in formal and informal sectors on average but no effect for the self-employed. Decomposing by sector, Deng finds that one quarter of the earnings gap between formal and informal wage earners can be explained by worker characteristics. Longer working hours in the informal sector explain only a small fraction of the earning gap. For both men and women, a large part of the gap therefore is not explained and attributed to segmentation: for women, this part is much larger. The earnings gap between formal wage earners and self-

employed can be fully explained by the differences in characteristics, across the whole sample and between male and female sub-samples.

Decomposing earnings by gender, men earn more in the formal sector. Different characteristics explain 36 percent of the gap while 64 percent is due to segmentation or unexplained characteristics. Men also earn more in the informal sector but observed characteristics explain only 0.4 percent of the gap while 99.6 percent is attributed to segmentation. Similarly for self-employment, men earn more of which only 37 percent of the gap is explained by worker characteristics.

Overall then the decompositions indicate that the earnings differentials between formal and informal wage earners are primarily caused by unexplained factors. This is particularly true of women in informal employment, where earnings are lowest. This analysis is consistent with the results from other studies, and reinforces concerns about the employment of women particularly in low income and insecure jobs. While one set of recommendations may focus on improving the education and skills of workers, another may need to address barriers to women moving into better quality employment. First however these barriers need to be better understood. In particular, they may exist both on the demand side – in terms of forms of discrimination by employers; but they may also arise from unobserved household effects which constrain women's labour supply or other institutional arrangements.

From a policy perspective a focus on the younger generation and their access to education and formal employment opportunities may be particularly important for strengthening women's labour market attachment. The opportunities for women to move into better paid or formal opportunities appear to reduce quickly with age. While a large part of the processes we observe in terms of informalisation and the gender impacts may be a transitional process associated with restructuring, the evidence raises the concerns that these may persist as long term forms of gender disadvantage.

#### **4 Conclusion**

In conclusion, we are left with the puzzle of how to think about the informalisation of employment in the Chinese context: is it evidence of a better functioning, more competitive labour market? Or is it instead the emergence of something dysfunctional? Or is it yet another phase in an on-going process of transition (to what)? In some parts of the literature it is interpreted as evidence of greater competition, economic dynamism and the source of job creation (World Bank, 2007); in which case, how much 'informal' (flexible, unregulated and unprotected) employment is acceptable? Alternatively, it is presented (particularly by policy makers) as something undesirable, to be regulated and formalised. Given that the state socialist system has been rejected as inefficient, the capitalist market system does not yet function, and the 'real markets' of informal institutions and allocative mechanisms are seen as in some way inefficient, what would the institutional arrangements for an acceptable well-functioning labour market, with some level of labour protection, look like?

This raises a further question: how useful is the concept of informal employment in such a context? One perspective is that it is not helpful: the conditions of 'formality' (or excessive regulation) have been undermined and eroded to such an extent that the dualism implied by the terminology is irrelevant; it lacks predictive or explanatory power - it describes but does not explain. Nonetheless, informality remains a useful concept or category for making visible hidden areas of the economy and labour market. While it may have limited utility as an analytic construct, it is helpful at a descriptive level. It provides a way to distinguish certain features (though hiding others). The issue is to refocus on what is of concern, and what can/should be done about it. Going beyond the terminology, we need to recognise and understand real phenomenon in the economy, including the role of social structures and institutions, including those which determine gendered outcomes. In the Chinese context, it is necessary for example to distinguish between the different

pathways into informality, and different outcomes, for example, for migrants as opposed to urban laid-off workers, and for women and men.

From a gender perspective, informal employment appears to act as a ‘safety net’ absorbing household members – particularly women – who, whether because of observable characteristics or segmentation face obstacles to formal employment. Policy interventions need to focus both on the characteristics that can improve job prospects and opportunities for women; as well as identifying and reducing the constraints. Many of these may be found in the relation to the reproductive role of women, and imply an approach to social security reform which addresses the care economy and reduces the burden on women. Furthermore, given the high and probably still growing share of both women and men in informal employment, extending a basic social protection system independent of employment will also be critical for the welfare of low income or informal workers and their families.

In the context of globalisation, rapid growth and continued informalisation, it seems that the kind of jobs and welfare provisions aspired to as part of the ‘modern’ sector of developed economies may no longer be a realistic aspiration, nor necessarily an accepted part of the social contract at the state level. The Chinese government has accepted *flexible* employment (a term sometimes used interchangeable with informal) as a policy objective, part of the process of creating a more efficient labour market; at the same time it remains uneasy about informal employment, wanting to organise and in some way formalise it, creating regulations which in turn provide incentives for employers to retreat into informality. The problem remains that creating an ‘efficient’ market for labour as a commodity sits uncomfortably with the overriding political objectives of an equitable, stable and ‘harmonious’ society.

## References

- Berik, Gunseli, Xiao-yuan Dong, Gale Summerfield (2007), 'China's transformation and feminist economics' *Feminist Economics* 13(3-4) July/October:1-37
- Blecher (2002) 'Hegemony and workers' politics in China' *China Quarterly* 170: 283-303
- Cai, F., D. Yang and M. Wang, (2006), 'Marketization and/or Informalization? New Trends of China's Employment in Transition', mimeo, Institute of Population and Labor Economics, Chinese Academy of Social Sciences, Beijing
- Chen, M. (2008) 'Informality and social protection: Theories and realities' *IDS Bulletin* Vol. 39, No.2:18-27
- Chen, M. (2001) 'Women in the Informal Sector: A global picture, the global movement' *SAIS Review* XXI, No.1 Winter/Spring.
- Chen, L. and H. Standing (2007) 'Gender equity in transitional China's healthcare policy reforms' *Feminist Economics* Vol. 13, Nos. 3 and 4 July/October: 189-212
- Cook, S. (2008) 'The Challenge of Informality: Perspectives on China's Changing Labour Market' *IDS Bulletin* Vol. 39, No.2:48-56
- Cook, S. (1999) 'Readjusting labour: Enterprise restructuring, social consequences and policy responses in urban China', in M. Warner (Editor) *Changing Workplace Relations in the Chinese Economy: Beyond the Iron Rice Bowl*, London: Macmillan.
- Cook, S. and S. Jolly (2000). 'Unemployment, poverty and gender in urban China: Perceptions and experiences of laid-off workers in three Chinese Cities'. IDS Research Report 50, August 2000 Brighton: IDS.
- Dong, X. et al. (2009) 'Unpaid care for children and the elderly and its effects on women and children during China's economic transition' Project report to the Heinrich Boll Foundation, Beijing.
- Dong, Xiao-yuan, Jianchun Yang, Fenglian Du and Sai Ding. (2006) 'Women's Employment and Public-Sector Restructuring: The case of urban China' pp. 87-107 in Grace Lee and Malcolm Warner, eds. *Unemployment in China: Economy, Human Resources and Labor Markets* London: Routledge Contemporary China Series
- Giles, J., Park, A. and Zhang, J. (2005) 'What is China's true unemployment rate?' *China Economic Review* (16): 149-170
- Giles, John, Albert Park, and Fang Cai (2006), 'How has Economic Restructuring Affected China's Urban Workers?' *The China Quarterly*, 185 (March 2006): 61-95
- Heintz, J. (2008) 'Revisiting Labour Markets: implications for macro-economics and social protection'. *IDS Bulletin* Vol. 39, Issue 2, May 2008, Brighton: IDS.
- Jiang, Y-p, n.d. 中国妇女的就业状况 (Employment situation of Chinese Women) mimeo
- Knight, J. and L. Song (2005), *Towards a Labour Market in China*, New York and Oxford: Oxford University Press
- Lee, C-K. (2008) *Against the Law: Labor Protests in China's Rustbelt and Sunbelt* Berkeley: University of California Press
- Lee, C.-K. (2007). 'Mapping the terrain of Chinese Labor Ethnography' in Lee, C.-K. (ed) *Working in China: Ethnographies of labor and workplace transformation*. London and New York: Routledge.
- Meng, X. (2000). *Labour Market Reform in China*, Cambridge University Press.

- National Bureau of Statistics of China (NBS) (2007) *Statistical Yearbook of China*, Beijing: NBS
- Rodgers, G. (2008) 'The Goal of Decent Work', *IDS Bulletin Vol. 39, Issue 2, May 1008*, Brighton: IDS
- Solinger, D. (2001) 'Informalisation by fiat' mimeo.
- Solinger, D. J. (2001) 'Why we cannot count the 'unemployed'.' *The China Quarterly* 167: 671-688.
- Solinger, D. J. (2002) 'Labour market reform and the plight of the laid-off proletariat.' *The China Quarterly*:170, 304-326.
- World Bank (2007) 'China's modernizing labour market: Trends and emerging Challenges' Synthesis report for China Labor Market AAA Program (August)
- Wu, Y. and F. Cai, (2006) 'Informal employment in urban China: size and characteristics' (CASS, IPLE: mimeo)

**Part 2**  
**Female and Flexible? Gender and the Rise of Informal Employment  
in Urban China**

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**Abstract**

This paper uses a longitudinal data set to examine changes in women's employment over time, focusing on the question of whether women are more likely than men to shift from more to less formal employment, and why. There is now a relatively well-documented rise in 'informal' and flexible employment in urban China, arising both from an on-going process of transition to more competitive labour markets, and from the more radical enterprise restructuring of the late 1990s. In this context we explore the choices facing men and women between different employment options, and examine what determines employment outcomes. In doing so, we look beyond the usual market determinants to include the role that household demographic characteristics play in women's labour market outcomes. While the results are limited by the nature of available data, they shed light on aspects of labour force participation, barriers to mobility and supply side constraints which are often neglected in analysis of China's labour market transition, and which point to areas for further research and data collection.

Paper presented at International Association of Feminist Economics Annual Conference, Turin, June 19-21<sup>st</sup> 2008 and Chinese Economic Association meetings, Chongqing,

**Acknowledgements:** This paper is part of a larger project on *Gender and Informal Employment* funded by the **Heinrich Böll Foundation's** Beijing office We are grateful to HBF for its financial support, and to Professor Xiao-yuan Dong for her support and collaboration on the project.

## 1. Introduction

The complex interactions between the economic, social and demographic consequences of China's phenomenal growth, while often acknowledged, remain poorly understood. The lens of gender can potentially shed critical light on these interactions in the realm of market and household relations, and in particular as these affect women's labour force participation and labour market outcomes. International literature portrays women variously as a 'flexible' workforce, or as secondary earners in the household; as making a voluntary choice to withdraw from the labour force; as discriminated against in access to employment or in work status and rewards; or as constrained in supplying labour by their domestic and reproductive roles. In urban China it is clear that women (particularly in middle age) have disproportionately dropped out of formal employment over the past decade or more. This is explained both with reference to voluntary choice and involuntary redundancy, while a number of studies also point to discrimination underpinning gender differences in employment status and earnings ( Wang and Cai, 2008; Dong et al., 2006; Gustafsson and Li, 2000).

At the same time, there is clear evidence of increasing 'informalisation' in employment relations accompanying the transition towards more competitive labour allocation mechanisms and hastened by state sector restructuring in the late 1990s. Workers are increasingly unprotected by enterprise or state welfare provisions, many have insecure or no contracts<sup>5</sup>, and rely on the market for a wide range of social provisioning. Only recently have some scholars of China's labour market started to document and analyse the rise in informal and flexible labour arrangements made more visible by the radical enterprise restructuring of the late 1990s (Cai, Park and Zhao, 2008). This emerging area of research and policy discussion still lacks clear definitions or interpretations, and is

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<sup>5</sup> New employment legislation, in particular the new Labour Contract Law which took effect from January 2008, aims at protecting the rights and interests of employees, stipulating the nature of job contracts as well as strengthening the power of trade unions and other employee representative groups to bargain with employers on matters such as wages, work hours, training, insurance, and benefits.

driven largely by policy concerns. In official discussions, the term ‘informal employment’ (*feizhenggui jiuye*) is often used interchangeably with ‘flexible’ (*linghuo*) employment, to imply the absence of (or shorter and less secure) contracts, part-time work, and limited if any social security coverage.

The international literature on informal employment has moved beyond the earlier dualism of formal and informal ‘sectors’ to a more complex and nuanced understanding of different types of employment characteristics and relationships, with a distinction made also between informality of employment and of enterprises. Studies point to a spectrum or pyramid of workers and jobs ranging from more to less formal, with possibilities for mobility along this spectrum as well as complex linkages between categories (Chen, 2008; Kabeer, 2008). In the Chinese context, the limited research and lack of appropriate data make systematic definitions and statistical analysis of ‘informal’ employment difficult (Cook, 2008; Solinger, 2001), and this problem is further exacerbated when trying to examine these differences by gender. Economic or quantitative analyses of such employment tend to focus on jobs in relatively formal institutional settings for which data is more readily available (Fang Lee Cooke, 2006). Even within these empirical studies however the survey instruments used are generally not well-adapted to the realities of income generating activities that are irregular, bring low and uncertain returns, and are often not regarded even by the respondents as ‘work’ (Lee, 2007a; Cook and Jolly, 2000). These less formal occupations and work conditions are better documented through qualitative or ethnographic studies. For now, many forms of employment are excluded from data and policy analysis – and inevitably it tends to be the most precarious forms of work which are hidden from official view (Solinger, 2002).

In this context of growing informality, this paper explores the changing patterns of female employment. We ask whether women are more likely than men to shift to less formal work, and why. To what extent are differences in outcomes a result of market-based determinants such as human capital, or do gendered constraints on the supply side – such

as household demographic composition, the gender division of labour and the need to care for children, the sick or the elderly – play a role? Answering these questions is important for understanding changing patterns of work, insecurity and inequality in urban China. Household characteristics and intra-household relationships are part of a changing labour market story, albeit poorly understood. Documented employment inequalities may be part of a transitional process of moving towards a more competitive market in which ultimately opportunities increase and discrimination is reduced. Alternatively, groups who are losing out in the transition process may find themselves disadvantaged in the longer term with the potential for the inter-generational transfers of this disadvantage. For women in particular, there is clear evidence of a ‘cohort’ effect in terms of current labour market marginalisation. Whether this will be overcome by a younger generation, or reproduced, is an important issue for policy makers to understand and if necessary take measures to address.

In the next section, we discuss the context and the challenges of definition, measurement and data for studying informal employment in China. We then present descriptive statistics and analysis of gender differences in employment using data from a longitudinal survey. In section four we analyse the determinants of different types of employment, and particularly of informality. In doing so, we look beyond the usual market determinants, and explore in particular the role that household demographic characteristics play in determining women’s labour market outcomes. We conclude by discussing the contribution of the analysis for understanding China’s changing labour market. While the results are in many respects preliminary, we believe that they identify key channels for further research, as well as shedding light on aspects of segmentation, barriers to mobility and supply side constraints which are often neglected in conventional labour market analysis.

## **2. Informal work and gender in China: Challenges to conventional analysis**

The phenomenon of informality sits uneasily with the main precepts of neo-classical economics and competitive markets. Standard models of the labour market do not easily accommodate the institutional realities of employment that is often marginally productive and embedded in local social and political contexts (family and kin networks, community ties or patron-client relations). One set of institutional structures which profoundly shapes the labour market relates to gender – the gendered structure of preferences and constraints, including the division of labour, which extends from the private realm of the household to affect the social reproduction of labour, access to the labour market and the terms of integration into paid employment.

In the Chinese context, rapid and multi-dimensional transformations in the structure of the economy and its population adds complexity to understanding the path of labour market transition. One key element in this transition for the urban workforce has been the re-commodification of labour alongside the dismantling of social security systems (Lee, 2007b). This changes the burden of reproduction with a shift in responsibility from state to family, and ultimately for the most part to women. These processes have been relatively neglected in the mainstream analysis of China's labour market transition. A growing literature documenting the shift towards more competitive markets has identified growing gender gaps in earnings and other employment outcomes, and focused largely on explanations in terms of productivity differences and rising discrimination (Gustafsson and Li, 2000; Maurer-Fazio et al., 1999). Here we aim to go beyond this work in examining the hypothesis that on the supply side household factors also affect women's employment outcomes, and this may be particularly true for low income workers in marginal forms of employment.

### *Informality and China*

Another neglected aspect of China's labour market transformation has been the rise of informality in urban employment relations. In contrast to the conditions which initially gave rise to the concept of the 'informal sector' in the early 1970s<sup>6</sup>, the starting point in urban China was a largely formal, secure and well-protected work force. For low income economies, the 'informal sector' was initially viewed as a temporary phenomenon associated with the transition from subsistence agriculture to the modern, urban economy. Key characteristics included ease of entry and limited capital requirements into highly competitive sectors with low returns to labour. This transitional nature in turn meant that little attention was given to the collection of statistics on informal employment, or to theorising about informality within conventional labour market models. In subsequent decades, however, it became increasingly apparent that informal employment was neither temporary nor transitional, but rather was developing into an important source of employment and income, in some cases for the majority of the labour force, and contributing considerably to the domestic product of many countries (Hans Bekkers and Wim Stoffers, 1995).

Efforts were subsequently made internationally to develop better definitions and measurement instruments.<sup>7</sup> A definition adopted in 1993 focused on workers in small and unregistered enterprises, paid and unpaid workers in these enterprises, and casual workers without fixed employers. More recently a 'job-centered' approach is being used to replace the increasingly inadequate former definition, emphasizing job characteristics such as lack of social security or a labour contract and poor working conditions as indicators of informal employment (ICLS, 2003). These definitions have not however made the task of

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<sup>6</sup> The term 'informal sector' was popularised during the 1970s following a number of ILO employment missions to developing countries. Coined by Hart (1971) based on work for the ILO employment missions in Africa, it appeared in an official ILO report in 1970 and has spawned a large literature and debates about its definition, measurement and significance.

<sup>7</sup> For example, the measurement of employment in the informal sector was discussed at the Thirteenth and Fourteenth International Conferences of Labour Statisticians (ICLS) in 1982 and 1987.

collecting of accurate statistics on informal employment, or of integrating informality into employment models, much easier. Due to its diversity and the wide range of activities it encompasses, informal employment data continues to be difficult to collect.

In China, there is clear evidence of the growth of employment that can best be described as informal. From the early reform period rural migrants moved to urban areas and undertook a range of activities such as petty trade, repairs, and recycling. With the restructuring of state enterprises, urban workers who lost the security of formal employment also started turning to a range of marginal income generating activities to make a living. These non-standard employment activities are however relatively invisible in official statistics. A range of estimates based on different methods suggest that up to 50% of the urban work force could now be classified as 'informal' in terms of being unregistered, and lacking social protection (Cook, 2008). Within this, there is limited evidence on the specific nature of the activities being undertaken.

#### *Women's labour market choices and constraints*

Given the evidence of increasing informalisation of labour in urban China, how might we expect women's outcomes to differ from those of men? A number of factors are expected to affect women's labour force participation. First, there is considerable evidence that the radical period of restructuring disproportionately affected women, with more leaving the labour market through redundancy or early retirement, and those laid off finding it harder to access new employment than men (Cook and Jolly, 2000). Second, as noted above, several studies point to forms of demand side discrimination, with women being disadvantaged relative to men in the labour market given equal qualifications. Thirdly, and less well-researched, are the range of constraints associated with the gender division of labour within the household. Evidence in the immediate context of state enterprise restructuring suggested the pressures on women to find incomes in order to provide for the household led to them undertaking a wide range of short term informal work while men

tended to spend time looking for more formal employment (Cook and Jolly, 2000); much work undertaken in this context (whether by men or women) was not considered ‘work’ and therefore goes unreported. At the same time, the dismantling of structures of care (health, education, children and the elderly) tends to place a large burden on women, thus potentially reducing their time for regular, formal employment (Dong et al., 2006).

The employment choices faced by both men and women have generally been characterised as paid employment, seeking work or withdrawing from the labour force, with paid employment generally assumed to encompass all forms of employment. In reality, many forms of ‘informal’ employment may not be adequately captured by existing data. Differences by gender in who undertakes more ‘informal’ forms of labour, and who is more likely to be hidden from standard labour force statistics, are even harder to expose. In this paper, we model employment choices between working formally, working informally, and not working (including unemployment, seeking work and leaving the labour force). Our main purpose is to test the hypotheses that both supply and demand side constraints mean that women are more likely than men to enter informal employment; and that household level factors (including the employment status of the husband, and family composition) affect women’s labour supply decisions but may not affect those of their husbands. We use this analysis to consider the ways in which ‘real’ labour markets are shaped by wider institutions of social provisioning and household gender relations within which workers are embedded.

### **3. Data and descriptive statistics**

#### ***The CHNS Data***

The data used in this paper come from the China Health and Nutrition Survey (CHNS), a longitudinal survey which covers both urban and rural areas in nine provinces (Liaoning, Heilongjiang, Jiangsu, Shandong, Henan, Hubei, Hunan, Guangxi and Guizhou). These provinces vary substantially in geography, levels of economic development and public

resources. Sampling was done through a multistage, random cluster process. Counties in the nine provinces were stratified by income (low, middle, and high) and a weighted sampling scheme was used to randomly select four counties in each province. In addition, the provincial capital and a lower income city were selected where feasible. Villages and townships within the counties, and urban and suburban neighbourhoods within cities, were selected randomly. The first round of the CHNS data, collected in 1989, included household, community, and health/family planning facility information. Six additional panels were collected in 1991, 1993, 1997, 2000, 2004, and 2006.

As noted above, a major challenge exists in analysing informal employment given the nature of available data. The CHNS survey was designed to look primarily at issues of health and nutrition, rather than labour force participation or types of employment, and therefore also has limitations for the current analysis. Nonetheless, unlike most available labour force data, it has a couple of major advantages which we exploit in this paper. First, although not a complete panel due to changes in the sample over time, the data cover a long period of time over critical years when the labour market underwent rapid transformation. We thus have an opportunity to trace changes over time and to identify longer trends as against the one-off ‘shock’ of enterprise restructuring. Second, the data contain information on household structure, demographic characteristics, health and nutrition, which enables us to undertake analysis of supply side factors and their impact on women’s employment.

The remainder of this section discusses and justifies the choice of variables and definitions used in the subsequent analysis. The data is first used to examine changing patterns of labour force participation, types of employment (by sector and occupation) and conditions (including earnings, hours worked, contracts and social security) for men and women. Based on our analysis of descriptive statistics, we choose indicators of ‘employment status’ (*diwei*) (which categorise workers as employers, employees, self-employed, etc.) as the best available proxy for informality. We then use logit and

multinomial logit models, and a two-stage Heckman selection model, to estimate first, the likelihood of being in informal employment for men and women, and second, the determinants of wages. While we attempt through these methods to control for selection out of the workforce, we recognise that there are likely to be biases arising from the under-reporting of 'informal' employment. This may be true for both men and women, though given the larger number of women who report having withdrawn from the labour market we might expect proportionately more women to be engaged in some form of unreported income generating activity. Finally, we run a series of regressions to examine whether household employment and demographic factors (including employment of the spouse, and the presence of elderly household members or children) affect the likelihood of informal employment.

*Descriptive statistics: initial findings and comparisons*

We start by examining labour force participation in the survey as compared with national survey data.<sup>8</sup> Table 1 presents labour force participation rates (defined as the proportion of those 16 and older declaring an attachment to the labour market) obtained from the CHNS. Urban labour force participation rates declined dramatically during the period 1989-2006, from 89.54 to 65.47 per cent for men and 82.93 to 44.35 per cent for women. These declining economic activity rates thus started well before the radical period of restructuring, and applied to both men and women. The overall female participation rate fell more rapidly than that for men—a difference of 14.51 percentage points. Comparing labour force participation rates in the two time periods 1989-1997 and 1997-2006 presents a quite different picture. From 1989-1997, the reduction for men is heavily concentrated in the extreme age groups. The sharp decline in the participation rate of the youngest group (16-25) is partly a reflection of the expansion of higher education opportunities and possibly the sensitivity of educational participation rates to the state of the labour market. However, the changes in female economic activity rates are more evenly spread across all

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<sup>8</sup> In this paper we use only the CHNS urban sample.

age groups. The decline in labour force participation rates for women between 16-25 is also very high, but lower than for men, perhaps suggesting that pre-1997 school-age males were more likely to stay out of the labour force to acquire higher education than their female counterparts. Possibly reflecting gender inequality in access to educational opportunities, from 1991 to 2000, the female labour force participation rate was higher than the male rate for 16-25 year olds. This explanation is consistent with the data in table 2: among those not in employment aged between 16-25 before 1997, the proportion of students is much higher among males. Using 1997 and 2002 Urban Labour Force Survey data, Dong et al. (2006) found similar results.

Compared to the previous decade, urban labour force participation rates declined slowly between 1997 and 2006, from 76.82 to 65.47 per cent for men and 61.3 to 44.35 per cent for women. The overall female participation rate fell more rapidly than the male – a difference of 5.6 percentage points. The largest drop in the participation rate for women is observed among those aged between 36-45, while the reduction for men is heavily concentrated in the 46-55 age group. Women experience a more rapid decline in labour force participation in all age groups up to 45, while the per cent decline for women in the 26-35 age group is almost double that of men, a marked contrast to the pre-1997 situation when male participation declined more rapidly.

If education opportunities and preferences explain part of the differences in the early years, differences in labour force participation between men and women in the older age groups can be explained in part by China's gender differentiated retirement policy. Government policy stipulates that the retirement age for white-collar employees is 60 for men and 55 for women; and for blue-collar workers is 55 for men and 50 for women. During restructuring, the practice of 'early retirement' was widespread, allowing workers to retire (or be retired by their enterprises) up to five years earlier than the official retirement age. Thus female (blue collar) workers could retire at 45 and male workers at 50. Mandatory

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premature retirement hurts women more than men given the existing retirement age differential combined with possible disrupted labour force participation for child-bearing. Women are essentially being pushed out of the labour market at potentially their more productive and higher earning years - and consequently lowering their wages and potential for advancement in employment and earnings, as well as their pension income (Dong, et al., 2006).

Generally these results are consistent with data from other surveys and studies. For example, using 1997 and 2002 Urban Labour Force Survey data, Dong et al.(2006) found urban labour force participation rates declined from 78.6 to 71.6 per cent for men and 64.6 to 54.1 per cent for women during 1997-2002. Using the NBS national urban household survey for 2003, the World Bank (2007) found that women were less likely to be in the labour force, and the difference increased with age controlling for other factors. Although labour force participation rates declined dramatically in the past two decades, there is evidence of some improvement from 2004. Urban labour force participation rates declined more slowly during the period 2004-2006, from 66.57 to 65.47 per cent for men and 45.12 to 44.35 per cent for women.

The picture of women leaving the labour force in disproportionate numbers needs to be taken into consideration in when analysing the story of informality. One hypothesis is that, as women are disproportionately pushed out of formal employment, particularly at ages when they are still capable of economic activity, they may want or need to find alternative sources of income which are likely to be less formal (and thus less easily captured in existing data). However, it is possible that many of these women are making a choice to remain out of the labour force, in which case this needs to be controlled for in considering the determinants of formal vs. informal employment.

### *Types of work: Defining Informality*

The challenges of definition and data have already been noted. Our data allow us to explore a range of variables and select the most appropriate. In terms of occupation, the categories suggest certain occupations that are more or less likely to be formal. However, many of the occupations on which data is collected could include either (or both) formal and informal employment (service workers, drivers, unskilled workers etc.) We suggest that employment status (*diwei*) provides a clearer distinction between formal and informal work, relating to the ILO definition, so we use this as the best available way of delimiting relatively informal employment relations. The categories include employers, permanent employees and employees with contracts – groups that are considered formal; and individual self-employed, temporary workers, paid and unpaid family workers, and ‘other’ – which we classify as informal. Based on this variable, table 3 shows the shares of informal and formal employment by gender.

Following this definition, 22.24 per cent of urban workers were in informal employment in 1997 and this increased to 36.50 per cent in 2006. This figure conforms to other studies that use other definitions. For example, using the China Urban Labour Survey (CULS1 and CULS2) and taking lack of a labour contract as the definition of informality, the size of informal employment in 2005 was 32.6 per cent for native urban residents, up from 18.5 per cent in 2002 (Du, Cai, and Wang, 2006). We also see that women are more heavily represented in the informal sector than men – a picture that is consistent with studies of informal employment globally. For example, in India and in Indonesia, informal employment accounts for nine out of every ten women working outside agriculture. In ten Latin American and four East Asian countries, for which data are available, half or more of the female non-agricultural workforce is in the informal sector (UN, 2000; Chen, 2001). Taking this categorisation of formal and informal by employment status but noting the caveats, we further explore differences among these categories both in terms of individual characteristics (age and education) and employment terms and conditions (hours, earnings

and other aspects associated with formality such as having social insurance). (See Tables 4 to 7).

Table 4 shows that female workers are younger than male workers (consistent with the earlier retirement and labour force withdrawal noted above). Workers in informal jobs tend to have fewer years of schooling than those in formal employment. It is notable that female workers are generally slightly more educated than their male counterparts (except for year 1997) in formal employment, but the situation in informal employment is reversed (except for year 2006). This may again be explained by the earlier withdrawal of older women (who tend to have less education<sup>9</sup>).

Comparisons of income and benefits between the formal and informal sectors are difficult due to data constraints. Wages and hours for irregular, part time or self-employment tends to be badly recalled and reported which will particularly affect informal employment data. Wages may be supplemented by unobserved payments in kind, such as social benefits for formal workers or food and lodging for informal workers (World Bank, 2007). Looking at monthly wages alone (Table 5), both men and women in informal employment earn less than their formal counterparts. As would be expected, the human capital endowment of informal workers is lower than those in formal employment, which could be an important determinant of earnings. Nonetheless, in general it would appear that the relatively low earnings and the insecurity of work for informal workers are significant features of the informalization phenomenon (Du, Cai and Wang, 2006).

While the wages of both men and women are lower in informal employment than in formal employment, interestingly the gender gap in wages appears higher in informal employment than in formal employment. For comparisons between male and female labourers, we look at the earnings ratio of these two groups of people and take the female

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<sup>9</sup> If we look at education by age category, we see that the younger generation are more educated than the older generation, especially for women.

groups as 1. In 1997, the ratio was 1.17 in formal employment compared with 1.34 in informal employment. Doing the same calculation for 2006, the ratio was 1.11 in formal employment and 1.56 in informal employment.

Some changes over time in terms of wages disparities are worth highlighting: (1) disparities between earnings for formal and informal workers increased, (2) disparities between male and female workers in informal employment are also increasing, while (3) disparities between male and female workers in the formal sector are relatively stable.

Working longer hours is another prominent feature of informal work. Informal workers tend to work more hours than those in formal jobs with men generally reporting longer hours than women (Table 6). We also see a large difference in medical insurance coverage. According to the CHNS data, 76.93 per cent of formal workers and 34.53 per cent of informal workers had medical insurance in 2006. We also find that the proportion of workers with medical insurance increased for all workers after 2004, but especially for informal workers — from 19.10 to 33.2 per cent for men and 25.75 to 36.22 per cent for women (Table 7). This may be explained by new government policies on medical insurance.<sup>10</sup>

#### **4. Determinants of informal work and wages**

In order to explore the factors that determine informality for women and men, we first present the results of analyses which model the likelihood of being in informal employment. We estimate a logit model to obtain the likelihood of being in formal versus informal employment for men and women. As we see in Table 8a, young people are more likely to work informally but the relationship is not linear. Female labourers are more

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<sup>10</sup> From 1998, the China State Council began to set up a basic medical insurance system for staff members and workers in cities and towns. In 2003, State Council guidelines were proposed to extend basic medical insurance to workers in 'flexible' employment. ("Guiding Opinion of the State Council about Medical Insurance for Urban Flexible Employment Workers") and in 2008 a basic medical insurance scheme was extended to dependents of workers.

likely to work informally, and the marginal effect is statistically significant at the 10 per cent level. Given other conditions, the likelihood of female workers working in an informal job is 2.78 per cent higher than for men. Less educated people are more likely to work informally and one additional year of schooling reduces the probability of entering informal work by about 5.19 per cent. Holding other factors constant, this suggests that improving education and skills may assist workers in entering formal employment, and given women's lower education levels overall this may be particularly beneficial to women. However, as the results also show, other factors work in the opposite direction. The demographic structure of the household, and specifically having school age children, increases the likelihood of women working informally (The odds ratio is significant, but the marginal effects of variable children are not significant—see table 8a and 8b).

We next explore the differences in earnings among men and women in formal and informal jobs. Table 9 presents the estimates from a series of wage regressions. The first column presents the wage regression for all workers. The coefficient of age is positive and the coefficient of age squared is negative, confirming the expectation from human capital theory that the experience effect should be concave. It also suggests that women's average wage is about 16.3 per cent ( $[\exp(-17.8)-1]*100\%$ ) less than men's, all else being equal. The estimated return in wages to years of schooling is 3.97 per cent. If we run the wage regression for the most recent year (2006) only, we find that the returns to education are 6.9 per cent. This figure is consistent with the calculation of returns to schooling in China in other studies, several of which document an increase in the returns to schooling (Park, Song, Zhang and Zhao, 2005). The recent World Bank Poverty Assessment (World Bank, 2007) estimates the raw return to a year of schooling (not controlling for any other factors) at 11.6 per cent in 2003. After controlling for other factors, the return to a year of schooling falls to 6.9 per cent, which is still high by international standards. The coefficient on the variable for informal employment is negative and statistically

significant at the 1 per cent level. This indicates that, other things being equal, workers in informal employment earn 8.89 per cent less than workers in formal employment.

We also estimate the wage regressions for formal and informal employment separately. As can be seen in the table, women consistently earn less than men; however, the estimate of the gender dummy variable (absolute value) is much bigger in informal employment than that in formal employment. In the formal sector, women workers earn 13.3 per cent ( $[\exp(-14.3)-1]*100\%$ ) less than male workers, but in informal employment, this figure increases to 30.1 per cent ( $[\exp(-35.8)-1]*100\%$ ). The returns to education in formal employment are slightly higher than in informal employment.

#### *Incorporating selection out of employment*

The above model assumes only a choice between formal and informal employment, ignoring the selection out of the labour force. Similarly, the wage equations do not control for possible selection bias of those selecting out. We therefore ran additional models incorporating this choice. First, a multinomial logit was run to estimate the likelihood of being in formal, informal or no employment. Second, a two-stage Heckman selection model was run to estimate the wage equations. These results are presented in Appendix 1 and 2.

Compared with binomial logit, including the category of 'not working' provides similar results. Women are considerably more likely to be in the not working category relative to men (likelihood). As with the previous model, having school age children increases a woman's chance of working informally. Good individual reported health status reduces the likelihood of not working or of working informally.

Using a Heckman model to control for selection out of employment, the significant results suggest that the wage differential between working formally and informally takes a different pattern for men and women: for men the gap is small and insignificant (informal employment reduces wages for men by 2.2%) compared to working formally. For women

this gap between working formally and informally is 20.7%. Women in informal employment earn 32.9% less than men in informal employment (as found initially in the descriptive statistics). Comparing wages in men's formal employment with women in informal employment gives a difference of 35%.

*The supply side: Household characteristics and women's employment*

We now turn to examine further the effects that household demographic factors have on the labour supply and employment of women. We do this by looking more closely at the sample of household with couples who both work (either formally or informally), in order to explore whether the individual characteristics or employment of one spouse influences the employment of the other. Table 10 shows that for most couples, husband and wife both work either formally or informally. Where only one works informally, it tends to be the wife. Of 344 couples that have only one spouse working informally, in 240 (69.8 per cent of) cases it is the wife.

To better understand the role of the spouse in determining women's employment outcomes, we consider the following two questions:

- 1) In the sub-sample of households with a couple both working, what is the likelihood of at least one spouse working informally?
- 2) Of all households that have at least one spouse working in informal employment, what is the likelihood of both husband and wife working informally?

To answer the first question, a linear probability model is regressed to analyze the likelihood of one spouse working informally (table 11). The results show that education coefficients are negative and statistically significant: the likelihood that at least one member works in informal employment decreases by 3.36 percentage points when the *husband* has one more year of education and by 4.89 percentage when the *wife* has one more year of education. The age variables are negative but not statistically significant.

The coefficient on children under 6 (absolute value) is big, suggesting that the presence of dependent children is of critical importance to the working decision of husbands and wives, raising the likelihood of at least one spouse in informal employment by 4.6%. The variables of reported health status are negative but not statistically significant.

Turning to the second question, of all households that have at least one spouse working informally, the proportion of both spouses working informally is very high (76.23 per cent, in year 2006). From the Linear Probability Model result (table 12), we also see that education coefficients are negative and statistically significant. Holding other variables constant, the likelihood of both spouses working informally decreases by 2.86 percentage points when the husband has one more year education and 2.02 percentage when the wife has one more year education respectively. In general, the results suggest that the characteristics of the husband affects whether both spouses work informally. The age variable for the husband is negative and statistically significant, but the age variable for the wife is not statistically significant. The possibility of both spouses working informally decreases by 4.5 per cent if the husband's self-reported health status is good.

## **5. Discussion and conclusions**

The findings of this analysis support our main hypotheses. Women appear more likely to enter informal employment than men. They have lower earnings in both sectors, but interestingly the gap is wider in informal employment. Education is a key determinant of employment outcomes for men and women. At a household level, the characteristics of the husband appear to have a significant impact on female employment choice, while those of the wife do not have such an effect. It is also worth noting that among households with one partner in informal work, there is a high probability of both partners being in such employment; but where *only* one works informally, it is most likely to be the wife.

While not conclusive, the analysis points to links between household composition and employment outcomes for women. They also point to a gendered segmentation of labour

market opportunities and rewards. While one explanation for many results is the ‘cohort’ effect of middle aged women with lower levels of education leaving the labour market, this cannot explain the extent of the results which are not limited to this cohort. This issue gets to the heart of the longer term implications of informalisation: if younger women are also disproportionately pushed into informal employment, what are the implications for their employment status, income and well-being into the future? And what does this mean for the next generation? In other words, what may have emerged largely as a short-term transitional phenomenon in the context of radical labour market restructuring may turn out to have longer term persistent impacts on women in the labour market. When these employment factors and potential segmentation are reinforced by changes in the care economy, placing higher burdens on family members for the care of dependents, women are likely to be still further disadvantaged in the labour market.

The rising level of informality in itself needs further research both as an empirical issue and from a policy perspective. Current data collection efforts (whether through small sample or national labour force or household surveys) do not yet incorporate questions which capture the range of employment types and relations that have emerged in the transitional economy. From a policy perspective, the rise in informal employment raises challenges for government taxation and social security policies. Evidence from regions such as Latin America with strongly bifurcated labour markets (between protected and non-protected workers) suggests that high levels of informality make it harder to expand social security coverage (Mesa-Lago, 2008). The challenge for labour market regulation is to find mechanisms for raising labour standards and providing some level of protection to workers without raising incentives to evade regulation and thus expanding informal and unprotected labour.

These are important contemporary policy debates in a context where rapid growth benefits the majority principally through the employment channel. The creation of employment is seen as critical to on-going welfare improvements, the reduction of urban poverty and the

maintenance of social stability. While the 'informal' economy is presented by some as a dynamic source of job creation, this growing sphere of largely unregulated, unregistered enterprises, with employees whose employment conditions are often precarious, also has implications for poverty, inequality and welfare. When combined with the increasing costs of commercialised care (for children, the sick and elderly), the implications for women's labour force attachment, and as a result their access to incomes and social security benefits, will be critical in determining the economic status and well-being particularly of more vulnerable female workers.

## References

- Cai, Fang, Albert Park and Yaohui Zhao (2008) 'The Chinese Labor Market in the Reform Era', Chapter 6 in Loren Brandt and Thomas G. Rawski (Eds.), *China's Great Transformation*, Cambridge University Press.
- Charmes, Jacques (1998) 'Informal Sector, Poverty and Gender: A Review of Empirical Evidence', Background paper for World Bank, *World Development Report 2000*, Washington, D.C.
- Chen, Martha (2001) 'Women in the Informal Sector', *SAIS Review*, Vol. XXI. No.1 Winter-Spring 71-82.
- Chen, Martha (2008) 'Informality and Social Protection: Theories and Realities', *IDS Bulletin*. Vol.39. No.2. May 2008.
- Cook, Sarah (1999) 'Readjusting labour: Enterprise restructuring, social consequences and policy responses in urban China' in M. Warner (Editor) *Changing Workplace Relations in the Chinese Economy: Beyond the Iron Rice Bowl*, London: Macmillan.
- Cook, Sarah (2008) 'The Challenge of Informality: Perspectives on China's Changing Labour Market', *IDS Bulletin*, Vol.39. No.2. May 2008.
- Cook, Sarah and Susan Jolly (2000) 'Unemployment, Poverty and Gender in Urban China: Perceptions and Experiences of Laid Off Workers in Three Chinese Cities', *IDS Research Report 50*, Brighton UK.
- Dong, Xiao-yuan, Jiang-chun Yang, Fenglian Du and Ding Sai (2006) 'Women's Employment and Public-Sector Restructuring: The Case of Urban China' in Grace Lee and Malcolm Warner, eds. *Unemployment in China: Economy, Human Resources & Labor Markets*, RoutledgeCurzon, pp. 87-107, 2006.

- Du, Yang, Cai, Fang and Wang, Meiyan (2006) 'Marketization and/or Informalization: New Trends of China's Employment in Transition', paper prepared for the WB Labour Markets Development Program.
- Fang Lee, Cooke (2006) 'Informal Employment and Gender Implications in China: the nature of work and employment relations in the community services sector', *Human Resource Management*, 17:8 August, 1471-1487.
- Giles, John, Albert Park, and Fang Cai (2006) 'How has Economic Restructuring Affected China's Urban Workers?', *The China Quarterly*, 185, pp. 61-95.
- Gustafsson, B. and Li S. (2000) 'Economic transformation and the gender earnings gap in urban China', *Journal of Population Economics*, 13, Vol. 2, pp. 305-29.
- Hans Bekkers and Wim Stoffers (1995) 'Measuring informal sector employment in Pakistan: testing a new methodology', *International Labour Review Articles*, January.
- Hussmanns, Ralf (2004) 'Measuring the informal economy: From employment in the informal sector to informal employment', Working Paper No. 53, International Labour Organization.
- Kabeer, Naila (2008) *Mainstreaming gender in social protection for the informal economy* London: Commonwealth Secretariat.
- Lee, Ching Kwan (2007a) 'Mapping the terrain of Chinese labor ethnography' in Ching Kwan Lee (Ed) *Working in China: Ethnographies of labor and workplace transformation*, London and New York, Routledge.
- Lee, Ching Kwan (2007b) *Against the Law: Labor protests in China's Rustbelt and Sunbelt* University of California Press.
- Margaret Maurer-Fazio, T.G. Rawski and Wei Zhang (1999) 'Inequality in the Rewards for Holding up Half the Sky: Gender Wage Gaps in China's Urban Labor Markets, 1988-1994', *The China Journal*, January 1999, Vol. 41, pp.55-88.
- Mesa-Lago, Carmelo (2008) 'Informal employment and Pension and Healthcare Coverage in Latin America', *IDS Bulletin*, Vol. 39, No. 2 May pp.79-86.
- Ministry of Labour and Social Security (2001) 'Skills training in the informal sector in China'.
- Park, Albert, Song, Xiaoqing, Zhang, Junseng and Zhao, Yaohui (2005) 'Economic Returns to Schooling in Urban China, 1988 to 2001', *Journal of Comparative Economics*, 33, pp. 730-752.
- Sethuraman, S.V. (1998) 'Gender, Informality, and Poverty: A Global Review', Background paper for World Bank, *World Development Report 2000*, Washington, D.C.

- Solinger, Dorothy (2001) 'Why we cannot count the 'unemployed' ', *China Quarterly*, **167**, pp. 671-688.
- Solinger, Dorothy (2002) 'Labour market reform and the plight of the laid-off proletariat', *China Quarterly*, 170, pp. 304-326.
- United Nations(2000) 'The World's Women 2000: Trends and Statistics', New York: UN Statistical Division.
- Wang, Meiyang and Fang Cai (2008) 'Gender Earnings Differential in Urban China', *Review of Development Economics*,: Vol. 12, Issue 2, pp. 442-454, May 2008.
- World Bank (2007) 'China's Modernizing Labour Market: Trends and Emerging Challenges', Synthesis Report for the ESW Component of the China Labour Market AAA Program World Bank, Beijing.
- Wu, Y. and F. Cai (2006) 'Informal employment in urban China: size and characteristics', CASS, IPLE: mimeo.

**Table 1 Urban Labor Force Participation Rates by Gender and Age**

	1989		1991		1993		1997		change(1989-1997)	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
Overall	89.54	82.93	83.76	75.06	82.28	72.00	76.82	61.30	-12.72	-21.63
by age:										
16-25	90.20	86.89	75.00	80.91	74.49	77.83	64.52	65.49	-25.68	-21.4
26-35	98.04	96.1	97.91	91.67	95.7	93.43	97.08	91.72	-0.96	-4.38
36-45	98.04	98	98.61	94.38	97.81	90.36	95.68	84.38	-2.36	-13.39
46-55	94.97	73.01	93.14	68.27	92.50	69.48	92.2	53.67	-2.77	-19.34
56-65	66.24	52.00	56.82	29.65	55.80	25.94	41.04	10.29	-25.20	-41.71
66 and above	37.41	32.43	27.63	15.14	23.91	13.38	8.9	5.35	-28.51	-27.08
Total	1,758	1,882	1,627	1,713	1,297	1,322	1,382	1,481		

	1997		2000		2004		2006		change(1997-2006)	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
	76.82	61.30	71.45	55.55	66.57	45.12	65.47	44.35	-11.35	-16.95
by age:										
16-25	64.52	65.49	51.75	56.38	68.15	64.60	66.42	61.86	1.90	-3.63
26-35	97.08	91.72	92.91	83.59	90.79	72.98	90.15	77.73	-6.93	-13.99
36-45	95.68	84.38	96.79	79.70	86.94	65.09	85.62	66.08	-10.06	-18.3
46-55	92.20	53.67	84.03	54.79	71.83	39.47	74.62	41.76	-17.58	-11.91
56-65	41.04	10.29	35.27	10.19	31.67	12.93	33.09	8.50	-7.95	-1.79
66 and above	8.90	5.35	7.14	3.64	5.54	3.02	4.58	1.18	-4.32	-4.17
Total	1,382	1,481	1,544	1,629	1,554	1,668	1,522	1,631		

**Table 2 Unemployed people aged between 16-25**

	1991		1993		1997	
	Male	Female	Male	Female	Male	Female
Seeking work	18.89	29.67	26.74	31.58	25.98	19.19
House work	4.44	12.09	0	2.63	0	6.06
Disabled	2.22	0	2.33	0	0.79	0
Students	74.44	58.24	68.60	60.53	70.08	72.73
Others	0	0	2.33	5.26	3.15	2.02
N	90	91	86	76	127	99
	2000		2004		2006	
	Male	Female	Male	Female	Male	Female
Seeking work	23.29	25.52	31.25	25.00	45.00	35.19
House work	0	3.45	2.50	7.69	0	11.11
Disabled	1.37	0.69	1.25	1.92	0	1.85
Students	70.55	67.59	50.50	51.92	40.00	42.59
Others	4.79	2.76	14.50	13.46	15.00	9.26
N	146	145	80	52	80	54

**Table 3 Proportion of Formal and Informal Employment by Gender**

	1997			2000			2004			2006		
	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
Formal	79.46	75.99	77.76	78.60	72.55	76.66	67.58	65.34	66.59	66.12	60.07	63.50
Informal	20.54	24.21	22.24	21.40	27.45	23.34	32.42	34.66	33.41	33.88	39.93	36.50
Total	886	764	1650	869	725	1594	731	577	1308	738	566	1304

**Table 4 Basic Characteristics of Workers by Formal and Informal Employment**

Formal		Age(years)			Years of schooling (years)		
Year	Male	Female	Total	Male	Female	Total	
1997	38.78 (11.05)	35.35 (9.42)	37.23 (10.48)	10.40 (3.20)	10.10 (3.20)	10.26 (3.21)	
2000	40.30 (10.73)	37.42 (9.50)	39.06 (10.32)	11.13 (3.10)	11.16 (3.03)	11.14 (3.07)	
2004	41.78 (10.53)	38.43 (9.86)	40.33 (10.37)	11.39 (2.81)	11.65 (2.90)	11.50 (2.85)	
2006	42.37 (11.11)	38.91 (9.83)	40.95 (10.73)	11.71 (3.14)	12.16 (3.23)	11.89 (3.18)	
Informal		Age(years)			Years of schooling (years)		
Year	Male	Female	Total	Male	Female	Total	
1997	37.75 (13.54)	36.98 (14.22)	37.38 (13.87)	8.09 (3.29)	7.12 (3.78)	7.63 (3.57)	
2000	38.59 (11.74)	37.01 (11.60)	37.80 (11.67)	8.78 (3.23)	8.41 (3.50)	8.60 (3.27)	
2004	40.95 (11.56)	39.33 (10.47)	40.28 (11.10)	8.88 (3.10)	8.47 (3.14)	8.71 (3.11)	
2006	42.94 (11.16)	40.43 (9.56)	41.84 (10.50)	8.80 (2.95)	9.03 (3.26)	8.90 (3.10)	

Note: Standard deviations are in parentheses.

**Table 5 Monthly Wages of Workers by Formal and Informal Employment**

Year	Formal				Informal			
	Male	Female	Total	N	Male	Female	Total	N
1997	453.80 (255.67)	388.99 (213.34)	424.46 (239.53)	1226	423.85 (743.72)	316.29 (190.15)	371.65 (581.21)	136
2000	730.49 (906.61)	622.88 (767.16)	684.08 (851.12)	1099	695.8 (750.64)	523.60 (461.54)	611.66 (630.46)	176
2004	1029.94 (814.87)	895.16 (631.34)	972.25 (744.45)	799	926.54 (1347.18)	717.54 (876.69)	834.69 (1165.34)	157
2006	1436.61 (2072.55)	1293.28 (4483.09)	1377.59 (3284.76)	765	1045.96 (817.56)	668.33 (378.85)	867.18 (673.60)	207

Note: Standard deviations are in parentheses.

**Table 6 Working Hours Per Week of Workers by Formal and Informal Employment**

Year	Formal			Informal		
	Male	Female	Total	Male	Female	Total
1997	41.81 (9.55)	41.03 (7.95)	41.46 (8.87)	50.15 (20.33)	44.34 (18.33)	47.31 (19.53)
2000	41.14 (10.27)	40.56 (9.85)	40.89 (10.09)	49.10 (17.32)	47.24 (14.90)	48.16 (16.13)
2004	43.22 (12.95)	43.14 (11.37)	43.19 (12.28)	53.52 (20.27)	51.34 (20.42)	52.42 (20.33)
2006	44.08 (13.15)	42.46 (8.79)	43.41 (11.57)	49.98 (20.19)	52.33 (18.67)	51.01 (19.54)

Note: Standard deviations are in parentheses.

**Table 7 Proportion of Having Medical Insurance of Workers by Formal and Informal Employment**

Year	Formal			Informal		
	Male	Female	Total	Male	Female	Total
1997	70.93	67.55	69.40	19.10	25.75	22.32
2000	65.70	65.70	65.62	20.12	19.16	19.76
2004	71.02	65.78	68.75	19.92	16.96	18.67
2006	75.20	79.41	76.93	33.20	36.22	34.53

**Table 8a Marginal Effect of Logit Model of Determination of Entrance to Informal Employment**

	All	Male	Female
Years of schooling	-0.0519*** <i>0.0021</i>	-0.0468*** <i>0.0027</i>	-0.0573*** <i>0.0033</i>
age	-0.0191*** <i>0.0052</i>	-0.0176*** <i>0.0066</i>	-0.0264*** <i>0.0087</i>
age square	0.0002*** <i>0.0001</i>	0.0001* <i>0.0001</i>	0.0003*** <i>0.0001</i>
marriage(1=married)	0.0392 <i>0.0437</i>	0.0563 <i>0.0939</i>	0.0049 <i>0.0195</i>
female(1=female)	0.0278** <i>0.0137</i>		
old(1=elderly above 65)	0.0406 <i>0.0374</i>	0.0512 <i>0.0526</i>	-0.0435 <i>0.0315</i>
children_1(below 6)	-0.0161 <i>0.0336</i>	0.0112 <i>0.0898</i>	-0.0180 <i>0.0941</i>
children_2(6-12)	0.0549 <i>0.0431</i>	-0.0015 <i>0.0027</i>	0.0991 <i>0.0666</i>
children_3(12-18)	0.0483 <i>0.0304</i>	-0.0567 <i>0.0928</i>	0.1030 <i>0.1598</i>
health(1=good)	-0.0399** <i>0.0193</i>	-0.0371* <i>0.0211</i>	-0.0454* <i>0.0261</i>
wave_2000	0.0591*** <i>0.020</i>	0.0266 <i>0.0235</i>	0.0898*** <i>0.0319</i>
wave_2004	0.2025*** <i>0.0211</i>	0.1820*** <i>0.0281</i>	0.2186*** <i>0.0337</i>
wave_2006	0.2606*** <i>0.0022</i>	0.2211*** <i>0.0344</i>	0.3055*** <i>0.0334</i>
Log likelihood	-2685.554	-1430.109	-1244.683
Pseudo R2	0.1381	0.1327	0.1468
N	5294	2914	2380

Note: Italics are standard errors.

\*\*\*: significantly different from 0 at 1% level, \*\*: significantly different from 0 at 5% level,

\*: significantly different from 0 at 10% level.

**Table 8b Logit Model of Determination of Entrance to Informal Employment**

	All	Male	Female
Informal	Odds Ratio	Odds Ratio	Odds Ratio
Years of schooling	0.752*** <i>0.009</i>	0.758*** <i>0.013</i>	0.747*** <i>0.013</i>
age	0.900*** <i>0.026</i>	0.901*** <i>0.035</i>	0.874*** <i>0.039</i>
age square	1.001*** <i>0.0003</i>	1.001* <i>0.0005</i>	1.001*** <i>0.0006</i>
marriage(1=married)	1.252 0.180	1.430* 0.277	1.025 0.225
female(1=female)	1.164** 0.086		
old(1=elderly above 65)	1.237 <i>0.170</i>	1.329* <i>0.203</i>	0.792 <i>0.262</i>
children_1(below 6)	0.914 <i>0.122</i>	1.067 <i>0.203</i>	0.911 <i>0.177</i>
children_2(6-12)	1.330** <i>0.164</i>	0.991 <i>0.270</i>	1.607*** <i>0.247</i>
children_3(12-18)	1.287** <i>0.168</i>	0.689 <i>0.202</i>	1.629*** <i>0.260</i>
health(1=good)	0.807*** <i>0.059</i>	0.807** <i>0.082</i>	0.797** <i>0.085</i>
wave_2000	1.366*** <i>0.136</i>	1.167 <i>0.165</i>	1.547*** <i>0.218</i>
wave_2004	2.696*** <i>0.261</i>	2.586*** <i>0.344</i>	2.740*** <i>0.391</i>
wave_2006	3.490*** <i>0.344</i>	3.108*** <i>0.418</i>	3.974*** <i>0.584</i>
Log likelihood	-2685.554	-1430.109	-1244.683
Pseudo R2	0.1381	0.1327	0.1468
N	5294	2914	2380

Note: Italics are standard errors.

\*\*\*: significantly different from 0 at 1% level, \*\*: significantly different from 0 at 5% level,

\*: significantly different from 0 at 10% level.

**Table 9 Determination of Wage Earnings in Urban China**

Log of wage	All years	All years	2006	Formal	Informal
Age	0.020 <sup>***</sup> <i>0.007</i>	0.021 <sup>***</sup> <i>0.007</i>	0.029 <sup>***</sup> <i>0.0145</i>	0.0201 <sup>***</sup> <i>0.007</i>	0.015 <i>0.018</i>
Age square	-0.0002 <sup>**</sup> <i>0.00008</i>	-0.0002 <sup>*</sup> <i>0.0000</i>	-0.0003 <sup>*</sup> <i>0.0002</i>	-0.0002 <sup>*</sup> <i>0.00008</i>	-0.0002 <i>0.00021</i>
Marriage(1=married)	0.050 <i>0.034</i>	0.045 <i>0.034</i>	-0.023 <i>0.080</i>	0.016 <i>0.035</i>	0.278 <sup>**</sup> <i>0.111</i>
Sex(1=female)	-0.178 <sup>***</sup> <i>0.017</i>	-0.149 <sup>***</sup> <i>0.019</i>	-0.254 <sup>***</sup> <i>0.037</i>	-0.143 <sup>***</sup> <i>0.018</i>	-0.358 <sup>***</sup> <i>0.052</i>
Years of schooling	0.040 <sup>***</sup> <i>0.003</i>	0.040 <sup>***</sup> <i>0.003</i>	0.069 <sup>***</sup> <i>0.006</i>	0.040 <sup>***</sup> <i>0.003</i>	0.036 <sup>***</sup> <i>0.008</i>
Old(1=elderly above 65 in the household)	-0.066 <sup>*</sup> <i>0.035</i>	-0.069 <sup>*</sup> <i>0.035</i>	-0.121 <i>0.078</i>	-0.080 <sup>**</sup> <i>0.037</i>	-0.009 <i>0.108</i>
Child(1=children below 6 in the household)	-0.033 <i>0.031</i>	-0.033 <i>0.031</i>	0.006 <i>0.077</i>	-0.013 <i>0.032</i>	-0.134 <i>0.100</i>
self report health status(1=good)	0.048 <sup>***</sup> <i>0.019</i>	0.048 <sup>***</sup> <i>0.019</i>	0.056 <i>0.038</i>	0.046 <sup>*</sup> <i>0.019</i>	0.054 <i>0.055</i>
Informal	-0.089 <sup>***</sup> <i>0.025</i>	0.002 <i>0.033</i>	-0.151 <sup>***</sup> <i>0.045</i>		
Informal*female		-0.202 <sup>***</sup> <i>0.047</i>			
wave 2000	0.318 <sup>***</sup> <i>0.022</i>	0.318 <sup>***</sup> <i>0.022</i>		0.332 <sup>***</sup> <i>0.023</i>	0.139 <sup>*</sup> <i>0.078</i>
wave 2004	0.681 <sup>***</sup> <i>0.024</i>	0.681 <sup>***</sup> <i>0.024</i>		0.709 <sup>***</sup> <i>0.025</i>	0.420 <sup>***</sup> <i>0.078</i>
wave 2006	0.848 <sup>***</sup> <i>0.024</i>	0.850 <sup>***</sup> <i>0.024</i>		0.895 <sup>***</sup> <i>0.025</i>	0.540 <sup>***</sup> <i>0.074</i>
Cons	5.089 <sup>***</sup> <i>0.125</i>	5.068 <sup>***</sup> <i>0.125</i>	5.495 <sup>***</sup> <i>0.281</i>	5.042 <sup>***</sup> <i>0.134</i>	5.437 <sup>***</sup> <i>0.336</i>
Adj R-squared	0.361	0.366	0.214	0.3961	0.2244
N	4154	4154	926	3565	589

Note: Italics are standard errors.

\*\*\*: significantly different from 0 at 1% level, \*\*: significantly different from 0 at 5% level,

\*: significantly different from 0 at 10% level.

**Table 10**

	At least one spouse working informally (%)				Both husband and wife working formally (%)	Total No.
	Both husband and wife working informally	Only husband working informally	only wife working informally	Total		
1997	41.52 <i>77.36</i>	3.37 <i>6.28</i>	8.78 <i>16.36</i>	53.67 <i>100</i>	46.33	831
2000	41.48 <i>77.53</i>	2.77 <i>5.18</i>	9.25 <i>17.29</i>	53.5 <i>100</i>	46.5	757
2004	42.02 <i>70.43</i>	6.51 <i>10.91</i>	11.13 <i>18.66</i>	59.66 <i>100</i>	40.34	476
2006	45.99 <i>76.23</i>	5.06 <i>8.39</i>	9.28 <i>15.38</i>	60.33 <i>100</i>	39.66	474
Total	42.43 <i>75.78</i>	4.1 <i>7.32</i>	9.46 <i>16.9</i>	55.99 <i>100</i>	44.01	2538

**Table 11*****Linear Probability Model:******informal=1: either husband or wife working informally or both working informally;******informal=0: both husband and wife working formally***

	Coef.	Std. Err.
Schooling years of husband	-0.0336***	0.0031
Schooling years of wife	-0.0489***	0.0028
Age of husband	-0.0043	0.0029
Age of wife	-0.0008	0.0030
Old(1=elderly above 65 in the household)	-0.0056	0.0259
children_1(below 6)	0.0464	0.0326
children_2(6-12)	0.0647***	0.0251
children_3(12-18)	0.0450*	0.0245
Self report health status of husband(1= good)	-0.0481**	0.0194
Self report health status of wife(1= good)	-0.0263	0.0188
Wave 2000	0.0418**	0.0220
Wave 2004	0.1946***	0.0232
Wave 2006	0.1934***	0.0237
Cons	1.4376	0.0710
N	2369	
Adj R-squared	0.399	

\*\*\*: significantly different from 0 at 1% level, \*\*: significantly different from 0 at 5% level,

\*: significantly different from 0 at 10% level.

**Table 12***Linear Probability Model:****bothinformal=1: both husband and wife working informally ;******bothinformal=0: only husband or wife working informally***

	Coef.	Std. Err.
Schooling years of husband	-0.0286***	0.0042
Schooling years of wife	-0.0202***	0.0038
Age of husband	-0.0078*	0.0040
Age of wife	0.0047	0.0042
Old(1=elderly above 65 in the household)	-0.0309	0.0367
children_1(below 6)	0.0150	0.0482
children_2(6-12)	0.0870**	0.0367
children_3(12-18)	0.0549	0.0352
Self report health status of husband(1= good)	-0.0450*	0.0262
Self report health status of wife(1= good)	0.0274	0.0261
Wave 2000	0.0058	0.0323
Wave 2004	0.0166	0.0327
Wave 2006	0.0695**	0.0331
Cons	1.2093***	0.1035
N	1265	
Adj R-squared	0.1	

Note:\*\*\*: significantly different from 0 at 1% level, \*\*: significantly different from 0 at 5% level,

\*: significantly different from 0 at 10% level.

**Appendix 1 Multinomial Logit Estimation**

	All		Male		Female	
	Informal	Not working	Informal	Not working	Informal	Not working
	RRR	RRR	RRR	RRR	RRR	RRR
Years of schooling	0.755*** <i>0.008</i>	0.775*** <i>0.008</i>	0.759*** <i>0.012</i>	0.816*** <i>0.011</i>	0.744*** <i>0.012</i>	0.746*** <i>0.011</i>
age	0.854*** <i>0.023</i>	0.571*** <i>0.012</i>	0.867*** <i>0.032</i>	0.545*** <i>0.016</i>	0.808*** <i>0.034</i>	0.567*** <i>0.019</i>
age square	1.002*** <i>0.000</i>	1.007*** <i>0.000</i>	1.001*** <i>0.000</i>	1.008*** <i>0.000</i>	1.003*** <i>0.001</i>	1.008*** <i>0.000</i>
marriage(1=married)	1.336** <i>0.190</i>	0.934 <i>0.118</i>	1.524** <i>0.290</i>	0.874 <i>0.155</i>	1.065 <i>0.230</i>	1.072 <i>0.197</i>
female(1=female)	1.122** <i>0.061</i>	2.469*** <i>0.152</i>				
old(1=elderly above 65)	1.381** <i>0.183</i>	1.565*** <i>0.202</i>	1.503*** <i>0.222</i>	1.904*** <i>0.283</i>	0.793 <i>0.254</i>	1.103 <i>0.280</i>
children_1(below 6)	0.868 <i>0.114</i>	0.692*** <i>0.091</i>	1.020 <i>0.191</i>	0.594** <i>0.144</i>	0.905 <i>0.172</i>	0.835 <i>0.139</i>
children_2(6-12)	1.398*** <i>0.168</i>	1.084 <i>0.131</i>	0.989 <i>0.263</i>	1.539 <i>0.453</i>	1.771*** <i>0.269</i>	1.162 <i>0.167</i>
children_3(12-18)	1.369** <i>0.173</i>	1.187 <i>0.145</i>	0.680 <i>0.196</i>	1.330 <i>0.352</i>	1.812*** <i>0.282</i>	1.222 <i>0.178</i>
health(1=good)	0.841** <i>0.060</i>	0.761*** <i>0.047</i>	0.820*** <i>0.082</i>	0.765*** <i>0.070</i>	0.858 <i>0.088</i>	0.748*** <i>0.065</i>

wave_2000	1.351***	2.107***	1.159	2.108**	1.516***	2.196**
	<i>0.131</i>	<i>0.185</i>	<i>0.162</i>	<i>0.277</i>	<i>0.207</i>	<i>0.266</i>
wave_2004	2.559***	5.358***	2.507***	5.801***	2.585***	5.174***
	<i>0.240</i>	<i>0.463</i>	<i>0.326</i>	<i>0.739</i>	<i>0.355</i>	<i>0.626</i>
wave_2006	3.361***	5.526***	3.033***	5.275***	3.844***	6.116***
	<i>0.319</i>	<i>0.490</i>	<i>0.398</i>	<i>0.682</i>	<i>0.538</i>	<i>0.773</i>
Pseudo R2	0.217		0.207		0.226	
Log likelihood	-7064.3		-3458.2963		-3526.26	
N	8786		4308		4478	

Note: The reported results are the relative risk ratios. Working formally is taken as the norm, against which each other groups are compared.

Italics are standard errors. \*\*\*: significantly different from 0 at 1% level, \*\*: significantly different from 0 at 5% level, \*: significantly different from 0 at 10% level.

**Appendix 2 Determination of Wage Earnings in Urban China with Heckman Selection**

	Coef.	Std. Err.	Coef.	Std. Err.
Wage Equation: dependent variable=log of monthly wage				
Age	0.016**	0.007	0.016**	0.007
Age square	-0.0001	0.000	-0.0001	0.000
Years of schooling	0.032***	0.004	0.032***	0.004
Sex(1=female)	-0.169***	0.020	-0.144***	0.021
Informal(1=informal)	-0.108***	0.025	-0.022	0.034
Female*informal			-0.185***	0.048
Health(1=good)	0.041**	0.019	0.041**	0.019
Wave_2000	0.319***	0.023	0.320***	0.023
Wave_2004	0.680***	0.024	0.680***	0.024
Wave_2006	0.850***	0.024	0.850***	0.024
Cons	5.303***	0.153	5.279**	0.153
Heckman Selection				
Age	-0.044***	0.002	-0.044***	0.002
Marriage(1=married)	1.252***	0.066	1.252***	0.066
Years of schooling	0.099***	0.005	0.099***	0.005
Female	-0.588***	0.034	-0.588***	0.034
Health	0.163***	0.035	0.163***	0.035
Children_1(below 6)	-0.043	0.077	-0.043	0.077
Children_2(6-12)	0.288***	0.070	0.288***	0.070
Children_3(13-18)	0.319***	0.068	0.319***	0.068
Old(1=elderly above 65)	0.267***	0.078	0.267***	0.078
Cons	0.219**	0.094	0.219**	0.094
lambda	-0.079**	0.035	-0.072**	0.035
N	7404		7404	

Note: \*\*\*: significantly different from 0 at 1% level, \*\*: significantly different from 0 at 5% level, \*: significantly different from 0 at 10% level.

### Part 3

## Informal Employment in Urban China: Heterogeneity and Selectivity\*

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#### Abstract:

This paper disaggregates informal employment in urban China into two mutually exclusive categories, informal wage work and self-employed, analyzes the role of self-selection in choosing specific employment categories, and decomposes the earnings gap among those employment categories. Utilizing the 2002 urban data from CHIP (China Household Income Project), this paper finds negative, positive and no self-selection among formal wage earners, informal wage earners and the self-employed, respectively, suggesting an inefficient allocation of labor force. The approach proposed by Bourguignon et al. (2001) is applied to decompose the earning gap among those employment categories, which lends support to this claim. Decomposition results indicate that the earnings differentials between formal and informal wage earners are primarily caused by unexplained factors. However, differences in characteristics fully account for the earnings gap between formal wage earners and the self-employed. Female with informal employment have the lowest earnings levels. Female informal wage earners suffer most from segmentation while the poor labor market performance of female self-employed is caused by their unfavorable characteristics.

Keywords: informal employment, self-selection, earnings gap, decomposition

JEL classifications: J16, J21, J61, J31

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\* Financial support from the Heinrich Böll Foundation's Beijing office is gratefully acknowledged. Special thanks go to Sarah Cook and Kalle Hirvonen for helpful comments. The usual disclaimer applies.

## 1. Introduction

As a special feature of labor markets in developing and transition countries, informal employment also experienced steady increase in urban China. Although definitions on informal employment differ among authors, previous literature reveals a common trend of rising informal employment. If informal employment is defined as working without a labor contract, the proportion of informal employment in total employment for native urban residents rises from 18.5% in 2002 to 32.6% in 2005, based on surveys in several cities (Du et al., 2008). Defining informal employment as urban residents working in private and individual enterprises and rural migrants not covered by the official statistics, Hu and Zhao (2006) report that this proportion increased from 19.69% in 1995 to 58.69% in 2004.

Previous literature holds different views on informal employment.<sup>11</sup> Many believe that informal employment is a disadvantaged part of the dualistic labor market, reflected by the earning gap between formal and informal workers with identical characteristics (Harris and Todaro, 1970). This pessimistic view on informal employment is challenged by Maloney (1999), among others, who regards informality as the desirable option for those falling into this category.

These opposite views have different implications for the rise of informal employment in urban China. If informal employment is inferior to formal employment, the increase in informal employment means the large distortion and efficiency loss in the labor market. Active labor market policies and programs are then called for. If the optimistic view is right, on the contrary, the expanding informality suggests the existence of a well-functioning labor market with efficiency and flexibility.

Decompositions of earning gaps provide clues to judge the existence of labor market segmentation (Dickens and Lang, 1985), which provide answers to the opposite views to informal employment. Following Bourguignon et al. (2001), this paper decomposes the earnings gap into endowment effect, employment effect and working intensity effect; the latter two comprise the segmentation effect. To implement the decomposition approach developed by Bourguignon et al. (2001) (hereafter, the BFG approach), hourly wage and working hours functions have to be estimated. To correct for the possible selectivity bias, we adopt the Lee (1983) approach to obtain the consistent estimate of hourly wage.

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<sup>11</sup> A large body of previous literature focuses on informal sector, the enterprise-based informality. However, their discussions and implications still apply here.

Utilizing the 2002 urban household survey data from CHIP (China Household Income Project), this paper intends to check whether the informal employment is segregated from formal employment. In recognition of the heterogeneity within informal employment, this paper disaggregates informal employment into two mutually exclusive categories, informal wage work and self-employed.

This paper finds formal and informal wage earners are negatively and positively self-selected, respectively. For the self-employed, there is no selectivity bias. Decomposition results indicate that the earnings differentials between formal and informal wage earners are primarily caused by unexplained factors. However, differences in characteristics fully account for the earnings gap between formal wage earners and the self-employed. Female with informal employment have the lowest earnings levels. Female informal wage earners suffer most from segmentation while the poor labor market performance of female self-employed is caused by their unfavorable characteristics.

The remainder of this paper is organized as follows. Section 2 presents background information about the urban labor market in China and surveys previous studies. Section 3 provides introduction to the data, the definition of informal employment and descriptive statistics. Section 4 describes the estimation method and decomposition framework. Section 5 discusses estimation and decomposition results. Concluding remarks are given in Section 6.

## **2. Background and previous studies**

Informality was defined as employment in the informal sector, excluding those working informally in the formal sector. Compared to the enterprise-based definition of informality, informal employment, a work-based definition with increasing acceptance, seems to more accurately capture the stylized facts of informality - ease of entry, flexibility, lack of protection, etc. Although defining informal employment is easy in theory, Ruffer and Knight (2007) state that there is no right definition of the informal sector labor market, independent of economic and institutional context and underlying objectives.

A strand of literature views informality as an inferior part of the dualistic market, acting as a makeshift in time of unemployment, economic restructuring or recession (for instance, Harris and Todaro, 1970). However, informalization is found to be a desirable option in Latin America (Carneiro and Henley, 2001; Maloney 1999; Marcouiller et al., 1997; Saavedra and Chong, 1999). People choose to end up with informality and accept the lower wage, resulting from their less favorable characteristics.

It is noteworthy that informal sector has heterogeneous components. House (1984) disaggregates the informal sector into a dynamic entrepreneurs and the community of the poor. However, his categorization is based on the difference in income. Thus those self-employed with little income are included into the latter group. Utilizing the 1994 Turkish Household Expenditure Survey, Tansel (2002) distinguishes informal wage earners from the self-employed and addresses the differences in these two subgroups.

As in other developing and transitional countries, informality is a special feature of the labor market in urban China. Several factors are responsible for the growing informality in the Chinese context, including the large scale lay-off occurred in the late 1990s, the gradually marketized allocation of labor force, and the inflow of migrants. With the loosening migration constraints, migrants flood into cities. In 2004, the number of rural-urban migrants amounted to about 120 million (State Council, 2006, pp. 4). Migrants in cities are always left with low-end jobs, including heavy labor and dirty jobs, such as construction, domestic services, and some self-employed service jobs (Meng and Zhang, 2001). However, migrants are often ineligible for formal status. About 80-90% of laid-off workers engaged in self-employment or joined private and small businesses, by which most of jobs created are informal (World Bank, 2007). The gradually marketized allocation of labor force reflects in part the rise of small business and in part people's voluntary choice of working informally. Since our data do not include migrants, the first cause is irrelevant in this paper.

Decompositions are widely used by previous studies to determine the existence and extent of segmentation (Dickens and Lang, 1985), and specifically in studies on informal employment (Tansel, 2002; Du et al. 2008). While Tansel (2002) notices the heterogeneity within informal employment, Du et al. (2008) treat informal employment as homogeneous, a strong assumption this paper will relax later.

There is also gender earnings gap in urban China, though the magnitude is relatively small through an international comparison (Gustafsson and Li, 2000). However, the unexplained part of gender earnings gap increased from 1988 to 1995 (Gustafsson and Li, 2000). Démurger et al. (2007) introduce the role of ownership in gender earnings gap. However, these studies do not explicitly take into account the informal employment while decomposing earnings gap.

### **3. Data, definition and descriptive statistics**

The data used in this paper comes from the 2002 wave of CHIP (China Household Income Project) data. The survey was conducted by Institute of Economics, Chinese Academy of

Social Sciences, with the assistance of National Bureau of Statistics (NBS). The data was drawn from the larger sample framework of NBS. It covers Beijing, Shanxi, Liaoning, Jiangsu, Anhui, Henan, Hubei, Guangdong, Chongqing, Sichuan, Yunnan, and Gansu, from which a sample of 6835 households living in 69 cities was obtained.

As is well-known, defining informal employment is not an easy task, given its heterogeneous nature. Fortunately, the CHIP data contains rich information in employment characteristics, which makes it possible to work out a feasible, though imperfect, definition of informal employment. In line with previous studies and in consideration of the strength and limitation of data, informal employment in this paper is defined along three dimensions. The first definition of informal employment is based on the ownership of employment. We treat those working in private and individual-owned enterprises as informal employed. Individual-owned enterprises are restricted to have fewer than 8 employees in law, which is similar with the threshold, 5 employees, set in the 15<sup>th</sup> ICLS. However, private enterprises tend to have a larger employment size. To minimize the error of misclassification of informal employment, employment size of private enterprises has to be taken into account. Although the survey does not provide information about the exact number of employees in private enterprises, a dichotomous measure on employment size is available, varying from 1-100, 101-500, 501-1000, over 1000. Employment in private enterprises having fewer than 100 employees is thus treated as informal. While the first definition is enterprise-based and actually measures workers in informal sector instead of informal employed, the other 2 definitions are job-based, consistent with the ILO definition. The second definition utilizes information on occupations and owners of individual enterprise are regarded as informal employed. The third definition views informal employment as those without tenure or fixed contract.<sup>12</sup> These definitions of informal employment are not mutually exclusively. See Table 1 for the overlap of the informal employment by different definitions. Figures in the *i*th row and the *j*th column represent the proportion of IE(*i*) in IE(*j*). For instance, the figure in the intersection of IE(1) and IE(3), 97.36%, indicates that among those working in individual household production or small private enterprises, only 2.01% of them have long-term contract.

/\* Table 1 about here \*/

Combining three kind of informal employment by different definitions, we obtain an overall measure of informal employment, as shown in Table 1. Table 2 indicates that informal employment comprises 22.13% of total urban employment in 2002, which is higher than

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<sup>12</sup> There are, undoubtedly, other ways to define informal employment, such as lack of social security, which are not supported by the data at hand, however.

18.5%, the estimate provided by (Du et al., 2008). Descriptive statistics by employment status for the whole sample, the male and female sub-samples are also provided in Table 2.

*/\* Table 2 about here \*/*

It is easy to notice that gender distribution across different employment status is not even. Male are overrepresented in formal wage earners and self-employed workers, while female accounts for the majority of informal wage earners and the unemployed. For formal wage earners, informal wage earner and the unemployed, the proportions of Han majority are relatively the same. However, Han is underrepresented in self-employed workers. The proportion of Communist Party members is the highest in formal wage earners, followed by informal earners, the unemployed and the self-employed. Education differs a lot among people with separate employment status. Formal wage earners have the highest education level, followed by informal wage earners. The proportion of those attended college in formal and informal wage earners are 38.97% and 19.21%, respectively. However, the proportion of those having completed senior high school is higher in formal wage earners than that in informal wage earners, which narrows the education gap between these two groups. The mean schooling years of formal and informal wage earners are 11.78 and 10.71, respectively. It is noteworthy that the unemployed received slightly higher education than self-employed workers. Parents of formal wage earners also received a higher education, reflected by the higher proportion of completing higher school education. Formal wage earners are older than the other three groups while informal wage earners are youngest.

Turning to demographic structure, those self-employed have the heaviest burden of raising children, followed by formal wage earners, informal wage earners and the unemployed. The elderly with pension is less likely to be a kind of burden than the elderly without pension. Specifically, the elderly with pension benefit the household from the financial perspective. The unemployed have the largest number of the elderly, while formal wage earners have the least. Household size is relatively the same across four groups of people with different employment status.

There is a clear geographic pattern of the distribution of employment status. Informal wage earners tend to be concentrated in eastern region while middle region has the highest unemployment rate. However, middle region also has the highest proportion of formal wage earners in economically active persons. Large cities seem to be the biggest provider of informal wage jobs. The proportion of self-employed workers is lower in large cities than that in small and medium-sized cities.

Formal wage earners enjoy the highest level of earnings. Earning levels of informal wage earners and self-employed workers are 65.89% and 76.68% of that of formal wage earners, separately. However, self-employed workers have the strongest working intensity. Formal and informal wage earners work 31.63% and 25.44% less than self-employed workers. Taking hours worked into consideration, formal wage earners are still on the top. However, informal wage earners have a higher level of hourly wage than self-employed workers, which highlights the role of working hours in explaining earning gap among worker with different employment status. In the next section, we will present an analytic framework proposed by Bourguignon et al. (2001) to disentangle the earning gap into differences in characteristics, differences in working hours and pure employment differences.

#### 4. Analytic framework

Decomposition of earnings differential between two groups is the common practice in the field of labor economics. Oaxaca-Blinder decomposition approach is widely adopted to disentangle the earnings differential into two parts, explained parts due to characteristics and unexplained parts due to coefficients. However, Oaxaca-Blinder approach cannot be applied to decomposing earnings differential into three components, difference-in-characteristics, employment difference and difference-in-hours-worked. To conduct such decompositions, the extension of Oaxaca-Blinder approach is proposed by Bourguignon et al. (2001), which is later utilized to analyze segmentation by ownership in urban China in Chen et al. (2005).

As the first step, earning functions for formal and informal workers are estimated, separately. Let the subscript F represents formal workers and L informal workers. Earnings of informal worker  $i$  can be written as:

$$y_i^i = h_i^i \times w_i^i = H(z_i^i, \eta_i^i; \gamma_i) \times W(x_i^i, \varepsilon_i^i; \beta_i) \quad (1)$$

where  $y_i^i$ ,  $h_i^i$ ,  $w_i^i$  stands for earnings, working hours and hourly earning of informal worker  $i$ , respectively. Working hours can be modeled as:

$$h_i^i = H(z_i^i, \eta_i^i; \gamma_i) \quad (2)$$

where  $z_i^i$ ,  $\eta_i^i$  are individual observable and unobservable characteristics, separately.  $\gamma_i$  is the coefficients estimated.

Hourly earning can be estimated using the function,  $w_i^i = W(x_i^i, \varepsilon_i^i; \beta_i)$ , with individual observable characteristics ( $x_i^i$ ), unobservable characteristics ( $\varepsilon_i^i$ ), and parameters  $\beta_i$  as arguments.

Similarly, earnings of formal worker equals hourly earnings times working hours:

$$y_F^i = h_F^i \times w_F^i = H(z_F^i, \eta_F^i; \gamma_F) \times W(x_F^i, \varepsilon_F^i; \beta_F) \quad (3)$$

Earnings differential between formal and informal workers can be decomposed as three parts:

(i) Pure difference-in-characteristics effect:

$$H(z_F^i, \eta_F^i; \gamma_F) \times W(x_F^i, \varepsilon_F^i; \beta_F) - H(z_I^i, \eta_I^i; \gamma_F) \times W(x_I^i, \varepsilon_I^i; \beta_F) \quad (4)$$

(ii) Pure employment effect:

$$H(z_I^i, \eta_I^i; \gamma_F) \times W(x_I^i, \varepsilon_I^i; \beta_F) - H(z_I^i, \eta_I^i; \gamma_F) \times W(x_I^i, \varepsilon_I^i; \beta_I) \quad (5)$$

(iii) Pure difference-in-hours-worked effect:

$$H(z_I^i, \eta_I^i; \gamma_F) \times W(x_I^i, \varepsilon_I^i; \beta_I) - H(z_I^i, \eta_I^i; \gamma_I) \times W(x_I^i, \varepsilon_I^i; \beta_I) \quad (6)$$

Note that both pure employment effect and pure difference-in-hours-worked effect are caused by the differential treatment, reflected by the differences in coefficients, thus these two can be combined as segmentation. It should be pointed out that the decomposition result is not unique. Depending on the reference groups and decomposition sequences, different decomposition results may be obtained, which is the commonly known index number problem. Following Chen et al. (2005), we report the minimum, maximum and mean of alternative decomposition results.

When estimating functions of hourly earnings and working hours, the problem of selectivity bias may arise, due to non-random distribution of workers among different employment status, which leads to inconsistent estimators. Since the choice of employment status here is not binary, the approach proposed by Heckman (1979) is no longer applicable. Later studies, including Lee (1983), Dubin and McFadden (1984), Dahl (2002) and Bourguignon et al. (2007), extend the work of Heckman (1979) to correct for the selectivity bias in the case of multiple choices. Placing different assumptions on either the linearity of the error terms or the covariance structure, these methods have their pros and cons (Bourguignon et al. 2007). In theory, the Dahl, Dubin-McFadden, BFG approaches are preferred over the Lee approach as the latter places more restrictions.<sup>13</sup> However, the Lee approach is simple to implement and, more importantly, performs well in small samples. In consideration of the small sample size of the self-employed in our data, we decide to adopt the Lee approach to estimate the selectivity-corrected earnings functions, although it assumes that unobservables in the earnings and probability functions correlate in the same direction for all status of employment. The problem of selectivity bias could also arise when estimating working hours. However, in our data, it is hard to find exclusion restrictions that affect the choice of employment status but do not correlate with working intensity. Thus OLS is used to estimate hours worked.

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<sup>13</sup> BFG is the shorthand for the approach suggested by Bourguignon et al. (2007). For detailed discussion on these approaches, please see Schmertmann (1994) and Bourguignon et al. (2007).

Formally, the Lee (1983) approach can be explained as follows, with estimating earnings functions as an example. The choice of employment status can be estimated as a probability model:

$$I_s^* = \gamma_{0s} + \gamma_s Z_s + \eta_s \quad (7)$$

where  $s=1, 2, 3, 4$ , represents four mutually exclusive employment status, i.e. formal wage earners, informal wage earners, the self-employed and unemployed, respectively.  $I_s = 0$ , i.e. employment  $s$  will be chosen, if and only if  $I_s^* > \text{Max}I_j^*$ , where  $j=1, 2, 3, 4$ , and  $j \neq s$ .

Write the earnings function as:

$$y_s = \beta_{0s} + \beta_s X_s + u_s \quad (8)$$

$s \neq 4$  in (8), since those unemployed have no earnings.

For those working with employment status  $s$ , the conditional expectation of earnings is:

$$E(y_s) = E(\beta_{0s} + \beta_s X_s + u_s | I_s^* > \text{Max}I_j^*) \quad (9)$$

Let  $\varepsilon_s = \text{Max}I_j^* - \eta_s$ , then

$$E(y_s) = E(\beta_{0s} + \beta_s X_s + u_s | \varepsilon_s < \gamma_s Z_s) \quad (10)$$

$\varepsilon_s$  is further transformed into a standard normal random variable with  $\varepsilon_s^* = \Phi^{-1}F_s(\varepsilon)$ . It

follows that

$$E(y_s) = E(\beta_{0s} + \beta_s X_s + u_s | \varepsilon_s^* < \Phi^{-1}F_s(\gamma_s Z_s)) \quad (11)$$

Assume  $\eta_s$  ( $s=1, 2, 3, 4$ ) are independently and identically distributed with the type I extreme-value distribution, the earnings function turns out to be

$$y_s = \beta_{0s} + \beta_s X_s - \sigma_s \rho_s \phi[\Phi^{-1}F_s(\gamma_s Z_s)] / F_s(\gamma_s Z_s) + v_s \quad (12)$$

where  $F_s(\gamma_s Z_s)$  is the probability of working with the employment status  $s$ .  $\rho_s$  is the correlation coefficient of  $u_s$  and  $\varepsilon_s^*$ .  $-\phi[\Phi^{-1}F_s(\gamma_s Z_s)] / F_s(\gamma_s Z_s)$  is the so-called selection term  $\lambda_s$ . Estimating (6) with OLS, consistent estimates can be obtained.

## 5. Empirical results

As argued in previous sections, employment status is not distributed among laborers randomly. Actually, people choose to be unemployed or work with specific employment status according to their utility maximization. Thus OLS lead to inconsistent estimation results. We use the Lee approach to deal with the self-selectivity bias when estimating hourly

wage functions. To apply the Lee approach, a multinomial logit model for explaining the decision of people regarding working has to be estimated at the first stage. With estimates from the first stage probability model, selection terms can be obtained and added in hourly wage functions at the second stage.

*/\* Table 3 about here \*/*

Table 3 reports marginal effects of the first stage multinomial logit model. Clearly, the probability of becoming formal wage earners for male is 9.6 percentage points higher than female. Male are also a little more likely to be self-employed than female. However, male are less likely to be informal wage earners and unemployed. Ethnic status has some power in explaining the choice of employment status. Han majority increases and decreases the probabilities of becoming informal wage earners and self-employed laborers, respectively. As for formal wage earners and those unemployed, ethnic status has no significant effect. Education seems to be strong predictors of probabilities of choosing specific employment status. In line with the conventional wisdom, education significantly increases the probability of becoming formal wage earners. On contrary, as years of schooling increase, the probability of becoming informal wage earners, self-employed and unemployed will decrease. Besides own educational attainment, parental education also has strong impact on employment status. The probability of working as formal wage earners is higher for those having at least one parent having attended high school. For children of less educated parents, the probability of unemployed, self-employed and working as informal wage earners is high. Age also influences the probability of choosing specific employment status. The probability of becoming formal wage earners increases with age, peaks at age 44 and then declines. Age have negative effects on the probability of becoming informal wage earners and unemployed but have no effect on self-employed. Household demographic structure seems to play negligible roles in explaining the probability of being informal wage earners and self-employed. However, for formal wage earners and unemployed, demographic structure seems to matter. Communist party members are more likely to be employed and become formal wage earners while those without CPC membership are more likely to be informal wage earners and self-employed.

Even after controlling for several personal and household characteristics, regional effects are still significant. People in middle and western regions are more likely to be formal wage earners but less likely to be informal wage earners than those in eastern region. As expected, the employment rate in the local city significantly reduces the probability of being unemployed. It increases and decreases the probability of taking formal and informal jobs,

respectively. People in middle region are more likely to be unemployed than the reference group even after the local employment rate is controlled. There are, undoubtedly, other factors at the city level which affects the probability of employment choice, suggested by the significant coefficients of the large city dummy. People in large cities are more likely to be employed and work as informal wage earners.

*/\* Table 4 about here \*/*

For the purpose of comparisons, Table 4 provides estimation results of hourly wage function with OLS. After standardizing, male still enjoy a higher level of hourly wage for formal and informal wage earners. However, the coefficient of male for self-employed workers is not statistically different from zero. Education plays an important role in explaining hourly wage for all three types of laborers. The coefficient of education is largest for formal wage earners, followed by informal wage earners and those self-employed. Working experience and its square term also affect hourly wage significantly. Hourly wage increases with working experience, then peaks and thereafter declines. The peak points are 34.67, 26.67 and 19.50 years for formal wage earners, informal wage earners and those self-employed, respectively. Hourly wage is highest in eastern region for all laborers with different employment status. Formal and informal wage earners in large cities have higher hourly wage than their counterparts in small and medium-sized cities. For those self-employed, the size of city does not affect their hourly wage. The likelihood ratio test suggests the coefficients of hourly wage equations are systematically different from each other, which lends support to estimating hourly wage equations separately for formal wage earners, informal wage earners and self-employed workers.

*/\* Table 5 about here \*/*

To correct for the selectivity bias in earnings functions, the selection term has to be constructed from the first stage probability model. Then the selection term is inserted into hourly wage functions as one of independent variables in earnings functions at the second stage. Consider first the hourly wage function for formal wage earners, estimation results listed in Table 5. After correcting for the selectivity bias, male does not earn more per hour than female, which is contrary to the finding from OLS estimations. A possible explanation could be that the male are more likely to be self-selected to be formal earners than the female, leading to the significant coefficient of the male dummy in OLS estimates. If self-selectivity bias is corrected, i.e., the male and the female are drawn randomly to be formal wage earners, the coefficient of the male dummy loses significance, controlling for other characteristics.

Schooling has significant effects on hourly wage for formal wage earners with the positive sign. Working experience appears to have significant effect on hourly wage for formal wage earners, exhibiting an inverted-U shape. However, calculations suggest the maximum point is reached at 54, evidently higher than the maximum length of working experience in the sample. Thus the effect of working experience on hourly wage is simply increasing. Region and city dummies, however, still affect hourly wage for formal wage earners with the same pattern revealed by OLS estimations.

For informal wage earners, the male still enjoy a premium of hourly wage. Schooling significantly increases hourly wage for informal wage earners, although in a smaller magnitude compared with formal wage earners. Working experience decreases hourly wage through a quadratic way. Similar to the OLS estimates, region and city dummies have significant effects on hourly wage for informal wage earners. For self-employed laborers, however, there is no other significant variable except the dummy variable indicating western region, working experience and its squared term.

Estimates of selection terms are of special interest, from which we can detect the direction of bias in the hourly wage estimates. However, estimates of selection terms should be interpreted with much care. Since  $\rho_s$  measures the correlation of  $u_s$  and  $\varepsilon_s^*$ , the positive coefficient of  $\rho_s$  means individuals are negatively self-selected into employment status  $s$ . By construction, the selection term  $\lambda_s$  is negative, thus the positive coefficient of  $\rho_s$  suggests hourly wage for employment status  $s$  is underestimated. For self-employed, there is no selectivity bias in estimates of hourly wage. However, the coefficient of selection term is significantly positive for formal wage earners, reflecting a negative self-selection. To be specific, those with less favorable unobserved characteristics become formal wage earners, leading to the underestimate of hourly wage. Had people been randomly assigned with formal wage jobs, hourly wage would be higher. On the contrary, informal wage earners are positively self-selected and their hourly wage is overestimated. This tells an interesting story. As can be seen, formal wage work is a prioritized category, reflected by higher returns to human capital, such as schooling and working experience. But people with unfavorable unobserved characteristics flowed into this category while those with favorable unobserved characteristics are kept out of formal wage work, a sign of inefficient allocation of labor force. There must be barriers to entry for formal wage work so that those with favorable unobserved characteristics have to stay with informal wage jobs.

*/\* Table 6 about here \*/*

Estimation of working hours is required before applying the BFG decomposition framework. Since it is hard to find exclusion restrictions, we choose to estimate hours worked with OLS, although the selectivity bias may also arise. Table 6 presents the estimation results. Male formal and informal wage earners work longer than their female counterparts. However, there is no significant difference in working hours between male and female self-employed laborers. Among wage earners, education lessens the working intensity. For those self-employed, education plays an opposite view; high school graduates work more than the reference group, those with the education level of at most primary school. Age affects working hours for formal wage earners but does not affect working hours for informal wage earners and the self-employed. Household demographic structure seems have no effect on working intensity for all workers.

*/\* Table 7 about here \*/*

Decompositions of earnings among different employment categories are reported in Table 7. As can be seen from Table 7, one quarter of the earnings gap between formal and informal wage earners can be explained by differences in characteristics. The remaining three fourths of the earnings gap is not explainable, in which pure employment effect dominates. In fact, longer hours worked by informal wage earners narrows the earning gap between formal and informal wage earners. For the male sub-sample, segmentation forces play a less important role in explaining the earnings gap between formal and informal wage earners. However, in the female sub-sample, segmentation forces account for more than 90% of the earning gap between these two groups of wage earners, suggesting that female informal wage earners suffer most from segmentation. This claim is confirmed by Table 8, in which we decompose the gender earnings gap across employment category. It clear that segmentation plays the overwhelmingly dominant role in the gender earnings gap fro informal wage earners.

*/\* Table 8 about here \*/*

In sharp contrast, the earnings gap between formal wage earners and those self-employed is totally explained by their differences in characteristics across the whole sample, the male and female sub-samples. We can also decompose the earnings differentials between self-employed and informal wage earners. Results indicate that segmentation is fully responsible for the earnings differentials between these two groups of informal workers. A closer look indicates the earnings gap among informal workers is primarily caused by their differences in working hours.

## 6. Concluding remarks

Unlike previous studies on informal employment in urban China, this paper disaggregates those informally employed into informal wage earners and the self-employed, in recognition of the heterogeneity inside the informal employment. Based on the 2002 urban data from CHIP (China Household Income Project), we estimate functions of hourly wage, working hours, the determination of employment category. To correct for the possible selectivity bias, we utilize the approach developed by Lee (1983) to obtain the consistency estimate of hourly wage. This paper finds negative, positive and no self-selection among formal wage earners, informal wage earners and the self-employed, respectively, suggesting an inefficient allocation of labor force.

This paper further decomposes the earnings gap among formal wage earners, informal wage earners and the self-employed. The approach proposed by Bourguignon et al. (2001) makes it possible to decompose the earnings gap into endowment effect, employment effect and working intensity effect; the latter two comprise the segmentation effect. Decomposition results indicate that the earnings differentials between formal and informal wage earners are primarily caused by unexplained factors. However, differences in characteristics fully account for the earnings gap between formal wage earners and the self-employed. Female with informal employment have the lowest earnings levels. Female informal wage earners suffer most from segmentation while the poor labor market performance of female self-employed is caused by their unfavorable characteristics.

Different policies are needed to improve the labor market performance of informal wage earners and the self-employed. For informal wage earners, moving barriers to entry of formal wage jobs can help most, especially for female informal wage earners. For the self-employed, in contrast, emphasis of government programs and policies should be put on fostering favorable characteristics, which, again, benefits female self-employed asymmetrically.

## References:

1. Bourguignon, François, Martin Fournier and Marc Gurgand, 2001, "Fast Development with a Stable Income Distribution: Taiwan, 1979-1994", *Review of Income and Wealth*, Vol. 47, No.2, pp. 139-163.
2. Bourguignon, François, Martin Fournier and Marc Gurgand, 2007, "Selection Bias Corrections Based on the Multinomial Logit Model: Monte-Carlo Comparisons", *Journal of Economic Surveys*, Volume 21, Number 1, pp. 174-205.

3. Cai, Fang, 2004, "Consistency of China's Statistics on Employment: Stylized Facts and Implications to Public Policies", *Chinese Journal of Population Sciences*, No. 3, pp. 2-10, in Chinese.
4. Carneiro, Francisco and Andrew Henley, 2001, "Modelling Formal Versus Informal Employment and Earnings: Microeconomic Evidence for Brazil", mimeo.
5. Chen, Yi, Sylvie Démurger and Martin Fournier, 2005, "Earnings Differentials and Ownership Structure in Chinese Enterprises", *Economic Development and Cultural Change*, Vol. 53, No. 4, pp. 933-958.
6. Dahl, Gordon, 2002, "Mobility and the Returns to Education: Testing a Roy Model with Multiple Markets", *Econometrica*, Vol. 70, pp. 2367-2420.
7. Démurger, Sylvie, Martin Fournier and Yi Chen, 2007, "The Evolution of Gender Earnings Gaps and Discrimination In Urban China, 1988-95", *The Developing Economies*, Vol. 45(1), pages 97-121.
8. Démurger, Sylvie, Martin Fournier, Li Shi and Wei Zhong, 2008, "Economic Reform and Labor Market Segmentation in China", *Chinese Journal of Population Sciences*, No.2, pp. 2-11, in Chinese.
9. Dickens, William and Kevin Lang, 1985, "A Test of Dual Labor Market Theory", *American Economic Review*, Vol. 75, No. 4, pp. 792-805
10. Dimova, Ralitza and Ira N. Gang, 2007, "Self-Selection and Wages during Volatile Transition", *Journal of Comparative Economics*, Volume 35, Issue 3, pp. 612-629.
11. Du, Yang, Cai Fang and Wang Meiyang, 2008, "Marketization and/or Informalization? New Trends of China's Employment in Transition", Working Paper No. 63, Institute of Population and Labor Economics, Chinese Academy of Social Sciences.
12. Dubin, Jeffrey and Daniel McFadden, 1984, "An Econometric Analysis of Residential Electric Appliance Holdings and Consumption", *Econometrica*, Vol. 52, pp. 345-362.
13. Gustafsson, Björn and Li Shi, 2000, "Economic Transformation in Urban China and the Gender Wage Gap", *Journal of Population Economics*, 13, 305 - 329.
14. Harris, John and Michael Todaro, 1970, "Migration, Unemployment and Development: A Two-Sector Analysis", *American Economic Review*, Vol. 60, No. 1, pp. 126-142
15. House, William, 1984, "Nairobi's Informal Sector: Dynamic Entrepreneurs or Surplus Labor?", *Economic Development and Cultural Change*, Vol. 32, No. 2, pp. 277-302.
16. Hu, Angang and Zhao Li, 2006, "Informal Employment and Informal Economy in the Economic Transformation in the Process of Urbanization in China (1990-2004)", *Journal of Tsinghua University(Philosophy and Social Sciences)*, No. 3, pp. 111-119.
17. Lee, Lung-Fei, 1983, "Generalized Econometric Models with Selectivity", *Econometrica*, Vol. 51, pp. 507-512.
18. Maloney, William, 1999, "Does Informality Imply Segmentation in Urban Labor Markets?"

- Evidence from Sectoral Transitions in Mexico”, *World Bank Economic Review*, 13, 275–302.
19. Marcouiller, Douglas, Veronica Ruiz de Castilla and Christopher Woodruff, “Formal Measures of the Informal-Sector Wage Gap in Mexico, El Salvador, and Peru”, *Economic Development and Cultural Change*, Vol. 45, No. 2, pp. 367-392
  20. Mazumdar, Dipak, 1983, “Segmented Labor Markets in LDCs”, *American Economic Review*, Vol. 73, No. 2, Papers and Proceedings, pp. 254-259.
  21. Meng, Xin and Zhang, Junsen, 2001, “The Two-Tier Labour Market in Urban China - Occupational Segregation and Wage Differentials between Urban Residents and Rural Migrants in Shanghai”, *Journal of Comparative Economics*, Vol. 29, pp. 485 - 504.
  22. Portes, Alejandro and Richard Schauffler, 1993, “Competing Perspectives on the Latin American Informal Sector”, *Population and Development Review*, Vol. 19, No. 1, pp. 33-60.
  23. Research Division of State Council, 2006, “General Report on Migrant Workers,” *Survey Report on Migrant Workers in China*, China Yanshi Press, in Chinese.
  24. Ruffer, Tim and John Knight, 2007, “Informal Sector Labour Markets in Developing Countries”, mimeo.
  25. Saavedra, Jaime, and Alberto Chong, 1999, “Structural Reform, Institutions and Earnings: Evidence from the Formal and Informal Sectors in Urban Peru”, *Journal of Development Studies*, 35, 4, 95-116.
  26. Schmertmann, Carl, 1994, “Selectivity Bias Correction Methods in Polychotomous Sample Selection models”, *Journal of Econometrics*, Vol. 60, pp. 101-132.
  27. Tansel, Aysit, 2002, “Wage Earners, Self-Employment and Gender in the Informal Sector in Turkey”, mimeo, World Bank.
  28. World Bank, 2007, “China’s Modernizing Labor Market: Trends and Emerging Challenges”, Synthesis Report for the ESW Component of the China Labor Market AAA Program.

Table 1. The definition of informal employment

%	IE(1)	IE(2)	IE(3)	IE
IE(1)	-	88.84%	46.28%	46.91%
IE(2)	33.87%	-	17.76%	17.88%
IE(3)	97.36%	97.99%	-	98.68%
Observations	1175	448	2472	2505
Share in total employment	10.38%	3.96%	21.83%	22.13%

Note: Figures in the  $i^{\text{th}}$  row and the  $j^{\text{th}}$  column represent the proportion of IE(i) in IE(j),  $i, j=1, 2, 3$ .

IE(1): those working in individual household production or small private enterprises. However, the survey does not provide information about the exact number of employees in small private enterprises. Instead, the number of employees in small private enterprises is dichotomous, varying from 1-100, 101-500, 501-1000, over 1000, which is utilized here.

IE(2): self-employed

IE(3): those do not have long-term contract

IE: IE(1)+ IE(2)+ IE(3)

Table 2. Descriptive statistics for the whole sample

	Formal wage earners	Informal wage earners	Self-employed	Unemployed
Male (%)	58.30	45.60	57.37	42.71
Han (%)	95.87	96.99	91.07	96.18
Married (%)	90.81	76.91	93.30	85.42
Primary school and below (%)	1.92	4.23	8.93	5.54
Junior high school (%)	20.02	30.06	45.09	44.03
Senior high school (%)	39.09	46.50	39.29	42.00
College and above (%)	38.97	19.21	6.70	8.43
At least one parent attended high school (%)	21.94	13.76	14.06	12.70
CPC membership (%)	34.97	11.47	7.37	10.37
Age	41.15	37.51	39.55	41.09
Have children younger than 6 (%)	12.06	13.32	19.20	8.42
Have children aged 7-16 (%)	21.52	19.20	26.34	16.06
Have the elderly with pension (%)	8.58	12.30	9.82	13.41
Have the elderly without pension (%)	4.66	4.81	5.58	4.52
Eastern region (%)	34.81	50.02	35.04	33.13
Middle region (%)	37.45	25.28	35.49	40.06
Western region (%)	27.74	24.70	29.46	26.81
Large cities (%)	39.24	51.43	24.78	41.08
Local employment rate	0.676	0.669	0.672	0.649
Schooling	11.78	10.71	9.37	9.80
Working experience	21.41	16.61	16.73	
Earnings	12606.24	8306.08	9665.94	
Hourly wage	6.15	3.95	3.43	
Working hours	2150.17	2344.63	3144.80	
Observations	7311	2057	448	1283

Table 3. Marginal effects from multinomial logit model:

	Formal wage earners	Informal wage earners	Self- employed	Unemployed
Male	0.096*** (0.009)	-0.044*** (0.008)	0.005** (0.002)	-0.057*** (0.006)
Han	-0.030 (0.022)	0.044*** (0.016)	-0.024*** (0.008)	0.009 (0.013)
Married	0.034 (0.021)	-0.053*** (0.018)	0.011*** (0.003)	0.008 (0.012)
Years of schooling	0.038*** (0.002)	-0.018*** (0.001)	-0.004*** (0.0004)	-0.016*** (0.001)
At least one parent attended high school	0.042*** (0.012)	-0.022** (0.010)	-0.005* (0.003)	-0.015** (0.007)
CPC membership	0.183*** (0.010)	-0.088*** (0.008)	-0.023*** (0.002)	-0.072*** (0.006)
Age	0.044*** (0.005)	-0.018*** (0.004)	-0.001 (0.001)	-0.025*** (0.003)
Age squared	-0.0005*** (0.00006)	0.0002*** (0.00005)	2.12e-06 (0.00002)	0.0003*** (0.00003)
Have children younger than 6	0.003 (0.016)	0.017 (0.014)	0.008* (0.005)	-0.028*** (0.008)
Have children aged 7- 16	-0.011 (0.013)	0.013 (0.011)	0.006* (0.003)	-0.008 (0.008)
Have the elderly with pension	-0.049*** (0.016)	0.002 (0.012)	-0.002 (0.003)	0.049*** (0.011)
Have the elderly without pension	0.015 (0.021)	-0.002 (0.017)	-0.002 (0.004)	-0.011 (0.012)
Eastern region				
Middle region	0.081*** (0.010)	-0.096*** (0.008)	-0.002 (0.002)	0.017** (0.007)
Western region	0.060*** (0.011)	-0.059*** (0.008)	-0.001 (0.003)	0.0003 (0.007)
Large cities	-0.041*** (0.010)	0.064*** (0.008)	-0.013*** (0.003)	-0.010* (0.006)
Local employment rate	0.720*** (0.074)	-0.126** (0.061)	-0.028* (0.016)	-0.566*** (0.044)
Pseudo R-squared	0.1258			
Observations	10643			

Note: Standard errors are in parenthesis. \*\*\*, \*\*, \* represents statistical significant at the 1%, 5%, 10% levels, respectively.

Table 4. Estimation of Hourly wage functions by OLS

	Formal wage earners	Informal wage earners	Self- employed
Male	0.280*** (0.102)	0.960*** (0.172)	0.346 (0.655)
Schooling	0.416*** (0.018)	0.300*** (0.032)	0.287** (0.126)
Working experience	0.208*** (0.023)	0.160*** (0.031)	0.312** (0.143)
Working experience squared	-0.003*** (0.001)	-0.003*** (0.001)	-0.008** (0.004)
Eastern region	-	-	-
Middle region	-2.323*** (0.120)	-1.901*** (0.215)	-0.203 (0.768)
Western region	-1.728*** (0.127)	-1.670*** (0.213)	-1.449* (0.798)
Large cities	0.684*** (0.105)	0.323* (0.180)	0.225 (0.793)
Constant	-0.742** (0.345)	-0.431 (0.472)	-1.213 (1.850)
Adjusted R-squared	0.1583	0.1303	0.022
Observations	7144	1889	329

Table 5. Hourly wage functions with selectivity bias corrected

	Formal wage earners	Informal wage earners	Self- employed
Male	-0.086 (0.115)	0.640*** (0.175)	0.377 (0.893)
Schooling	0.236*** (0.028)	0.174*** (0.035)	0.265 (0.205)
Working experience	0.107*** (0.025)	0.045 (0.030)	0.315* (0.178)
Working experience squared	-0.001** (0.001)	-0.002** (0.001)	-0.008* (0.004)
Eastern region	-	-	-
Middle region	-2.593*** (0.136)	-2.985*** (0.329)	-0.198 (1.101)
Western region	-1.968*** (0.145)	-2.375*** (0.258)	-1.431*** (0.464)
Large cities	0.972*** (0.126)	0.984*** (0.212)	0.139 (0.664)
Selection term	2.737*** (0.347)	-3.119*** (0.597)	-0.264 (0.813)
Constant	4.137*** (0.710)	-1.611*** (0.552)	-1.542 (3.513)
Adjusted R-squared			
Observations	7144	1889	329

Note: Bootstrapped standard errors (200 replications)

Table 6. Estimating hours worked by employment status

	Formal wage earners	Informal wage earners	Self- employed
Male	76.871*** (10.216)	180.630*** (33.752)	-17.036 (94.131)
Primary school and below	-	-	-
Junior high school	-125.873*** (37.019)	-20.878 (90.569)	318.381** (160.433)
Senior high school	-157.969*** (36.410)	-186.186** (89.519)	413.942** (166.555)
College and above	-193.264*** (36.547)	-278.921*** (95.089)	129.136 (292.733)
Age	2.598 (5.667)	33.659** (17.086)	-15.866 (51.050)
Age squared	-0.071 (0.067)	-0.477** (0.215)	0.352 (0.635)
Married	38.787 (23.922)	101.337 (72.041)	-114.071 (217.138)
Have children younger than 6	-5.224 (17.957)	0.390 (58.801)	-30.649 (137.786)
Have children aged 7-16	-14.25 (13.634)	4.376 (47.811)	-159.429 (114.244)
Have the elderly with pension	3.162 (17.886)	-83.312 (51.894)	94.418 (158.423)
Have the elderly without pension	4.091 (23.406)	40.072 (79.410)	-52.192 (217.065)
Constant	2254.188*** (111.738)	1774.024*** (301.520)	3092.109*** (939.422)
Adjusted R-squared	0.0145	0.044	0.0437
Observations	7144	1889	329

Table 7. Decomposition of earnings gaps among employment categories

	Formal earners vs. Informal earners	wage vs. wage	Formal earners vs. Self- employed	wage vs. Self- employed	Self-employed vs. Informal wage earners
<u>The whole sample:</u>					
Due to characteristics	23.23%		142.55%		-83.85%
Segmentation	76.77%		-42.56%		183.85%
of which,					
Pure employment	97.97%		163.65%		10.35%
Working hours	-21.2%		-206.21%		173.50%
Total	100%		100%		100%
<u>Male sub-sample:</u>					
Due to characteristics	34.01%		95.47%		-164.74%
Segmentation	65.99%		4.53%		264.74%
of which,					
Pure employment	107.65%		217.45%		-47.20%
Working hours	-41.66%		-212.92%		311.94%
Total	100%		100%		100%
<u>Female sub-sample:</u>					
Due to characteristics	9.03%		196.21%		-93.40%
Segmentation	90.97%		-96.22%		193.40%
of which,					
Pure employment	101.97%		116.22%		36.89%
Working hours	-11.00%		-212.44%		156.51%
Total	100%		100%		100%

Table 8. Decomposition of the gender earnings gap by employment category

Male vs. Female	Formal earners	wage	Informal earners	wage	Self-employed
Due to characteristics	35.64%		0.36%		37.04%
Segmentation	64.36%		99.64%		62.96%
of which,					
Pure employment	36.58%		75.24%		69.68%
Working hours	27.78%		24.40%		-6.72%
Total	100%		100%		100%

Appendix

Table A1. Descriptive statistics for the male sub-sample

	Formal wage earners	Informal wage earners	Self- employed	Unemployed
Han (%)	96.06	96.48	92.22	94.89
Married (%)	91.72	75.27	93.39	79.01
Primary school and below (%)	2.25	3.41	8.95	5.67
Junior high school (%)	21.72	31.98	43.97	44.97
Senior high school (%)	35.74	43.60	38.13	38.39
College and above (%)	40.28	21.00	8.94	10.97
At least one parent attended high school (%)	19.40	11.19	12.45	10.04
CPC membership (%)	41.81	12.79	9.34	16.97
Age	42.57	37.81	40.31	42.75
Have children younger than 6 (%)	11.78	13.43	19.84	5.84
Have children aged 7-16 (%)	20.25	19.19	26.07	11.13
Have the elderly with pension (%)	8.21	12.58	12.06	15.33
Have the elderly without pension (%)	4.90	4.90	5.45	5.47
Eastern region (%)	35.59	50.11	36.58	35.04
Middle region (%)	37.47	25.16	38.13	36.68
Western region (%)	26.94	24.73	25.29	28.28
Large cities (%)	40.61	49.47	23.74	43.25
Local employment rate	0.674	0.667	0.667	0.647
Schooling	11.78	10.76	9.51	9.95
Working experience	22.87	17.32	18.23	
Earnings	13332.97	9742.78	10870.03	
Hourly wage	6.39	4.48	3.68	
Working hours	2177.06	2426.51	3144.68	
Observations	4262	938	257	548

Table A2. Descriptive statistics for the female sub-sample

	Formal wage earners	Informal wage earners	Self- employed	Unemployed
Han (%)	95.61	97.41	89.53	97.14
Married (%)	89.54	78.28	93.19	90.20
Primary school and below (%)	1.44	4.92	8.90	5.45
Junior high school (%)	17.64	28.44	46.60	43.32
Senior high school (%)	43.78	48.93	40.84	44.69
College and above (%)	37.14	17.71	3.66	6.54
Age	39.15	37.26	38.53	39.85
At least one parent attended high school (%)	25.48	15.91	16.23	14.69
CPC membership (%)	25.42	10.37	4.71	5.44
Have children younger than 6 (%)	12.46	13.23	18.32	10.34
Have children aged 7-16 (%)	23.29	19.21	26.70	19.73
Have the elderly with pension (%)	9.08	12.06	6.81	11.97
Have the elderly without pension (%)	4.33	4.74	5.76	3.81
Eastern region (%)	33.72	49.96	32.98	31.70
Middle region (%)	37.42	25.38	31.94	42.59
Western region (%)	28.86	24.66	35.08	25.71
Large cities (%)	37.32	53.08	26.18	39.46
Local employment rate	0.680	0.671	0.679	0.650
Schooling	11.79	10.66	9.17	9.69
Working experience	19.37	16.00	14.73	
Earnings	11579.93	7084.55	8104.51	
Hourly wage	5.82	3.51	3.12	
Working hours	2112.52	2276.13	3144.96	
Observations	3049	1119	191	735

Table A3. Marginal effects from multinomial logit model for the male sub-sample

	Formal wage earners	Informal wage earners	Self- employed	Unemployed
Han	0.006 (0.027)	0.025 (0.019)	-0.021** (0.011)	-0.010 (0.016)
Married	0.048 (0.029)	-0.031 (0.023)	0.012*** (0.004)	-0.029 (0.019)
Years of schooling	0.028*** (0.002)	-0.014*** (0.002)	-0.004*** (0.001)	-0.011*** (0.001)
At least one parent attended high school	0.043*** (0.015)	-0.027** (0.012)	-0.003 (0.004)	-0.013 (0.009)
CPC membership	0.168*** (0.011)	-0.097*** (0.009)	-0.023*** (0.003)	-0.048*** (0.007)
Age	0.032*** (0.006)	-0.007 (0.005)	-0.002 (0.002)	-0.023*** (0.003)
Age squared	-0.0003*** (0.00007)	0.00002 (0.00006)	0.00001 (0.00002)	0.0003*** (0.00003)
Have children younger than 6	0.014 (0.019)	0.012 (0.016)	0.008 (0.006)	-0.033*** (0.009)
Have children aged 7- 16	-0.005 (0.016)	0.010 (0.013)	0.006 (0.004)	-0.012 (0.009)
Have the elderly with pension	-0.060*** (0.021)	-0.011 (0.013)	0.005 (0.005)	0.066*** (0.016)
Have the elderly without pension	0.036 (0.022)	-0.020 (0.018)	-0.003 (0.005)	-0.013 (0.012)
Eastern region	-	-	-	-
Middle region	0.075*** (0.013)	-0.081*** (0.009)	-0.002 (0.003)	0.007 (0.008)
Western region	0.039*** (0.013)	-0.043*** (0.009)	-0.002 (0.003)	0.007 (0.008)
Large cities	-0.001 (0.012)	0.028*** (0.010)	-0.015*** (0.003)	-0.011* (0.006)
Local employment rate	0.580*** (0.090)	-0.129** (0.072)	-0.049** (0.021)	-0.402*** (0.052)
Pseudo R-squared	0.1304			
Observations	5782			

Table A4. Marginal effects from multinomial logit model for the female sub-sample

	Formal wage earners	Informal wage earners	Self- employed	Unemployed
Han	-0.073** (0.036)	0.066** (0.027)	-0.029** (0.013)	0.036* (0.020)
Married	-0.008 (0.032)	-0.048* (0.028)	0.010** (0.005)	0.046*** (0.016)
Years of schooling	0.052*** (0.003)	-0.023*** (0.002)	-0.004*** (0.001)	-0.024*** (0.002)
At least one parent attended high school	0.037** (0.019)	-0.013 (0.016)	-0.007** (0.004)	-0.017 (0.012)
CPC membership	0.207*** (0.017)	-0.078*** (0.015)	-0.022*** (0.003)	-0.107*** (0.009)
Age	0.076*** (0.009)	-0.047*** (0.007)	3.21e-07 (0.00003)	-0.029*** (0.005)
Age squared	-0.001*** (0.0001)	0.0006*** (0.00008)	0.0006 (0.000)	0.0004*** (0.00007)
Have children younger than 6	-0.018 (0.027)	0.024 (0.023)	0.009 (0.007)	-0.016 (0.016)
Have children aged 7- 16	-0.032 (0.021)	0.026 (0.018)	0.005 (0.005)	0.001 (0.013)
Have the elderly with pension	-0.034 (0.025)	0.015 (0.020)	-0.009** (0.004)	0.029* (0.017)
Have the elderly without pension	-0.013 (0.037)	0.027 (0.032)	-0.001 (0.007)	-0.012 (0.022)
Eastern region				
Middle region	0.084*** (0.017)	-0.114*** (0.013)	-0.002 (0.004)	0.032*** (0.012)
Western region	0.083*** (0.018)	-0.077*** (0.013)	0.001 (0.004)	-0.007 (0.012)
Large cities	-0.090*** (0.017)	0.107*** (0.014)	-0.009** (0.004)	-0.008 (0.010)
Local employment rate	0.904*** (0.120)	-0.124 (0.101)	0.001 (0.023)	-0.780*** (0.074)
Pseudo R-squared	0.1241			
Observations	4861			

Table A5. Estimation of Hourly wage functions by OLS for the male sub-sample

	Formal wage earners	Informal wage earners	Self- employed
Schooling	0.410*** (0.022)	0.377*** (0.057)	0.099 (0.122)
Working experience	0.217*** (0.030)	0.181*** (0.054)	0.184 (0.133)
Working experience squared	-0.003*** (0.001)	-0.003** (0.001)	-0.005 (0.003)
Eastern region	-	-	-
Middle region	-2.128*** (0.152)	-2.394*** (0.378)	-1.107 (0.683)
Western region	-1.676*** (0.162)	-2.135*** (0.376)	-1.759** (0.732)
Large cities	0.722*** (0.132)	0.378 (0.319)	0.358 (0.712)
Constant	-0.595 (0.443)	-0.466 (0.859)	2.387 (1.883)
Adjusted R-squared	0.1584	0.1205	0.0244
Observations	4186	866	183

Table A6. Estimation of Hourly wage functions by OLS for the female sub-sample

	Formal wage earners	Informal wage earners	Self- employed
Schooling	0.426*** (0.030)	0.244*** (0.034)	0.440* (0.234)
Working experience	0.198*** (0.039)	0.152*** (0.034)	0.464 (0.286)
Working experience squared	-0.003*** (0.001)	-0.003*** (0.001)	-0.013 (0.009)
Eastern region	-	-	-
Middle region	-2.603*** (0.195)	-1.503*** (0.232)	0.739 (1.563)
Western region	-1.810*** (0.203)	-1.303*** (0.230)	-1.145 (1.549)
Large cities	0.631*** (0.171)	0.301 (0.195)	0.056 (1.579)
Constant	-0.614 (0.561)	0.172 (0.489)	-3.981 (3.300)
Adjusted R-squared	0.1507	0.1237	0.0088
Observations	2958	1023	146

Table A7. Hourly wage functions with selectivity corrected for the male sub-sample

	Formal wage earners	Informal wage earners	Self- employed
Schooling	0.246*** (0.034)	0.239*** (0.075)	0.106 (0.159)
Working experience	0.103*** (0.033)	0.093* (0.052)	0.183** (0.091)
Working experience squared	-0.001* (0.001)	-0.003** (0.001)	-0.005** (0.003)
Eastern region	-	-	-
Middle region	-2.438*** (0.173)	-3.347*** (0.477)	-1.107 (0.937)
Western region	-1.883*** (0.182)	-2.762*** (0.395)	-1.763** (0.748)
Large cities	0.890*** (0.151)	0.779** (0.389)	0.384 (0.631)
Selection term	2.946*** (0.417)	-2.874*** (0.869)	0.073 (0.846)
Constant	4.080*** (0.831)	-1.459* (0.779)	2.467 (2.026)
Adjusted R-squared	0.1683	0.1313	0.0189
Observations	4186	866	183

Note: Bootstrapped standard errors (200 replications)

Table A8. Hourly wage functions with selectivity corrected for the female sub-sample

	Formal wage earners	Informal wage earners	Self- employed
Schooling	0.220*** (0.047)	0.133*** (0.042)	0.309 (0.318)
Working experience	0.094** (0.039)	0.007 (0.042)	0.469 (0.372)
Working experience squared	-0.001 (0.001)	-0.001 (0.001)	-0.013 (0.011)
Eastern region	-	-	-
Middle region	-2.817*** (0.225)	-2.550*** (0.335)	0.744 (1.665)
Western region	-2.073*** (0.258)	-1.988*** (0.277)	-1.032 (0.635)
Large cities	1.046*** (0.213)	1.095*** (0.272)	-0.491 (1.998)
Selection term	2.511*** (0.490)	-2.928*** (0.681)	-1.655 (2.780)
Constant	4.268*** (1.017)	-0.999 (0.687)	-5.981 (9.028)
Adjusted R-squared	0.1579	0.1443	0.0041
Observations	2958	1023	146

Note: Bootstrapped standard errors (200 replications)

Table A9. Estimating hours worked by employment status for the male sub-sample

	Formal wage earners	Informal wage earners	Self- employed
Primary school and below	-	-	-
Junior high school	-160.793*** (44.754)	-5.843 (149.424)	219.482 (196.949)
Senior high school	-187.451*** (44.228)	-92.775 (148.658)	451.173** (203.613)
College and above	-220.193*** (44.229)	-247.663 (154.596)	-101.908 (320.849)
Age	6.2 (7.641)	52.163* (26.941)	-38.874 (62.142)
Age squared	-0.122 (0.088)	-0.641* (0.331)	0.546 (0.747)
Married	82.108** (34.203)	168.221 (124.556)	110.709 (297.783)
Have children younger than 6	-0.693 (23.422)	47.035 (92.026)	-34.854 (168.575)
Have children aged 7-16	-20.599 (18.010)	-24.996 (74.533)	-187.626 (138.927)
Have the elderly with pension	8.8 (23.808)	-18.587 (80.696)	1.623 (173.112)
Have the elderly without pension	-9.142 (29.634)	7.289 (121.709)	-27.128 (252.818)
Constant	2263.857*** (150.766)	1396.318*** (486.088)	3525.997*** (1122.480)
Adjusted R-squared	0.0142	0.0546	0.0636
Observations	4186	866	183

Table A10. Estimating hours worked by employment status for the female sub-sample

	Formal wage earners	Informal wage earners	Self- employed
Primary school and below	-	-	-
Junior high school	-55.107 (65.706)	-51.28 (112.365)	453.737* (272.818)
Senior high school	-96.332 (64.265)	-273.279** (110.276)	373.624 (281.799)
College and above	-139.925** (64.787)	-317.572*** (119.589)	624.574 (615.765)
Age	-10.666 (9.821)	25.684 (22.290)	-43.758 (102.578)
Age squared	0.107 (0.124)	-0.444 (0.284)	0.846 (1.342)
Married	2.692	27.202	-281.601

	(34.068)	(88.020)	(341.301)
Have children younger than 6	-14.624	-68.369	-70.327
	(28.096)	(76.260)	(245.126)
Have children aged 7-16	-3.826	9.014	-141.688
	(21.186)	(61.891)	(205.223)
Have the elderly with pension	-5.775	-118.796*	323.815
	(27.214)	(67.218)	(323.962)
Have the elderly without pension	33.317	74.496	-43.954
	(38.229)	(103.558)	(392.687)
Constant	2460.568***	2148.313***	3493.829*
	(187.670)	(386.217)	(1866.628)
Adjusted R-squared	0.0070	0.0345	0.0658
Observations	2958	1023	146

## Part 4

### **Is informal work becoming women's work? Consequences of labour market restructuring for women's work and welfare in urban China\***

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#### Abstract

This paper examines the extent to which changes in China's urban labour market have led to an informalisation of employment, and more specifically to a feminisation of informal work. Are employment relations in China's restructured and increasingly competitive labour market becoming less formal? With what consequences in general and particularly for women? Using data from a five city labour force survey, we examine employment outcomes for men and women focusing on differences between those in informal and formal employment. Differences are found by gender associated with individual characteristics and variation in the local economy across the five cities. Women are more likely to be in informal employment, and to have lower levels of earnings and social security coverage. These gendered patterns of informality pose challenges both for understanding the on-going evolution of China's labour market and for the design of policies to ensure basic incomes and social protection to vulnerable urban residents.

**\*Acknowledgements:** This paper is part of a larger project on **The Rise in Informal Employment and its Impact on Women During China's Economic Transition** funded by the **Heinrich Böll Foundation's** Beijing office. We are grateful to HBF for its financial support, and to Professor Xiaoyuan Dong for her support and collaboration on the project.

## **1. Introduction: Labour market changes and the rise of informality in urban China**

China's liberalisation process over the past three decades has transformed the structure of the labour market and nature of employment for millions of urban workers. State sector workers, protected through the 'iron rice bowl' of full employment and social security, were largely insulated from reform until the late 1990s. While there were gender differences in employment prior to reform, urban women also enjoyed full-time employment and benefits (Berik et al., 2007:11). Restructuring swiftly created mass redundancies and a new class of 'laid-off' workers, many lacking the skills or characteristics needed for re-employment in the more competitive urban labour market. Also affected by these changes were the work opportunities and conditions facing close to ten million new urban labour market entrants each year, as well as an estimated 50 million migrants. One outcome has been a rise in urban poverty among low income workers, those with the ability to work but unable to find remunerative employment, and traditional welfare recipients lacking the ability to work. Many urban residents, seeking minimal incomes to support their families, have entered an expanding 'informal' labour market, undertaking irregular, low-paid and unprotected income-generating activities.

While a number of government programmes have been put in place over the past decade to facilitate reemployment and provide a basic safety net, the longer term outcome has been a fundamental change in the structure of the urban labour market – towards one of greater flexibility and, for some, 'informality' in employment terms and conditions. Workers are less likely to have contracts and social security coverage; work may be 'flexible' (part-time or temporary); labour standards are often not implemented or monitored, exposing many workers to health and safety hazards as well as the risk of arrears, unpaid wages, overwork and unfair dismissal. While there have undoubtedly been great efficiency gains arising from the shift towards a more competitive labour market (Knight and Song, 2005; Meng, 2000) for

a substantial number of workers the transition has been one towards insecurity of employment, low and irregular incomes and limited social protections.

These changes have been largely neglected in the extensive research on China's transition. The negative implications of the terminology of informality (*fei zhenggui*) has itself been problematic, and not widely adopted by policy makers or researchers (Cook, 2008). Official data collection has continued using definitions and measurements of employment appropriate to a state-planned economy, thus failing to capture a growing sphere of economic activity outside the standard categories. Few studies have delved into the range of income-generating activities pursued by low income workers, their conditions of work, and their labour market opportunities and constraints. By extension, the gender dimensions of these new labour market phenomena are even less well understood. Abundant evidence points to gender differentiated outcomes of transition: at the height of restructuring, women were more likely to be laid-off, less likely to be re-employed, and withdrew from the labour market more frequently (Appleton et al, 2002; Lee 2005, Giles et al. 2006; Liu, 2007). Increasing evidence has emerged of gendered discrimination in access to employment, while a significant body of analysis also suggests increasing gender differentials in earnings and conditions among those employed (Gustafsson and Li, 2000; Maurer-Fazio and Hughes, 2002).

In this paper we explore these two related and under-researched aspects of China's labour market transition: the rise of informality, and the intersection between gender and informal employment. We first examine the evidence from national level data for the rise in informal employment and the gender impacts of employment restructuring. Using a high quality labour force survey undertaken in 5 cities in 2005, we examine the main characteristics of workers and employment associated with informality, specifically examining variation by gender. Both the descriptive statistics and multivariate analysis of the determinants of different employment outcomes point to some key issues both for data collection and analysis of China's labour market, and for policy makers concerned with poverty and welfare in urban China.

## **2. Employment, informality and gender in urban China**

State sector restructuring from the late 1990s saw millions of state sector workers shift out of previously secure jobs, into less secure employment, unemployment or early retirement. In comparison with most developing economies which have a large recognised ‘informal’ employment sector, China’s dual economic structure meant that rural residents had limited mobility and few employment opportunities beyond the countryside, while urban residents enjoyed an ‘iron rice bowl’ of employment and social security. By extension, activities that might generally be identified as informal work in other contexts were undertaken by those excluded from the benefits of urban citizenship – rural migrants. ‘Informality’ was thus not considered a concern for the urban labour market, but rather associated with migration.

China’s urban employment structure has visibly shifted over the past decade from a situation where most jobs for urban residents were recognisably ‘formal’ – in registered enterprises, with secure contracts, and various forms of social security coverage – to a much more mixed picture. Macro data from China’s National Statistical Bureau demonstrate the extent of these changes. Figure 1 (see also Appendix Table 1) shows the structure of employment in urban China. Total employment has increased – from 170 million in 1990 to 273 million by 2006 – and the allocation among types of employer or enterprise has changed markedly, particularly since 1996. While state and collective employment have contracted, other forms of enterprise (private, joint venture, etc.) have grown albeit from a very small base. The major change however is the ‘residual gap’ – that is the difference between people known to be in the labour force from household-based surveys but not reported through enterprise or unit-based reporting systems. By 2006 this ‘gap’ constituted almost 105 million workers, or 37% of the urban labour force.

This ‘residual’ method gives an approximation of ‘informal employment’ – workers who are not registered by enterprises or captured through the ‘formal’ administrative reporting

system.<sup>14</sup> However, it tells us little about who these workers are, where they work, what they do, and their employment terms and conditions. Are they a new urban underclass of working poor, undertaking the dirty, dangerous jobs previously reserved for migrants? Do they represent a growth of informality in the labour market with implications for incomes and well-being of workers, as well as for tax revenues and the extension of social security? Might they also represent increasing evasion of tax and labour regulations by employers or the white-collar self-employed? From a policy perspective, this ‘residual’ of missing workers raises issues that are of potential concern to various government departments – those responsible for enterprise and employment registration, for enforcement of labour standards, for tax collection, for the welfare of workers, and for addressing the growing incidence of urban poverty among poorly-employed low income workers.

Even at the macro level, it is difficult to access data to break the aggregate picture down by gender. A more limited analysis for 2004 using the Fifth Population Census data (Table 1, Jiang, n.d.) suggests that 58% of urban employees were not registered by enterprises: by gender, the figures were 54.5% for men and 62.9% for women. While this estimate of the overall residual or ‘gap’ is significantly larger than that reported above (39.6% in 2004), possibly due to the definition used, the relative male and female gaps nonetheless indicate important gender differences.

We can generate hypotheses about what type of workers make up at least part of this ‘residual’ work force, their characteristics and working conditions, based on knowledge of the restructuring process. The early waves of redundancies in the state sector occurred disproportionately among low income earners, and in many sectors these were disproportionately women (Dong et al. 2006). In addition to women being targeted for redundancy due to their employment position, specific policies operated to push them out of employment and to hinder their re-entry. These included:

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<sup>14</sup> See also Park et al. (n.d) and Cai and Wu, 2006, for further discussion of these ‘missing workers’.

- a differential retirement age (50 for women workers compared with 55 for men), exacerbated by a policy of ‘early retirement’ which reduced this age to 45 for women;
- a policy which aimed to maintain the employment of one family member, making it strategic within the household for the lower paid – generally the wife – to be laid-off first in the hope that the husband would retain his job;
- the dismantling of state welfare services creating a shift of the reproductive and care burden (for children, the sick and the elderly) from the state enterprises back to the household, and thus to women.

Given that women’s access to educational opportunities and skills training had often been more restricted than their male counterparts, compounded by the context of early retirement policies, re-employment options for many laid-off women even in their thirties were extremely limited. Women disproportionately withdrew from the labour force, whether by choice or through lack of opportunity. Overall female labour force participation dropped more rapidly than that of men: the female to male urban employment ratio in 1997 was 0.82; by 2002 this had decreased to 0.76 (Dong et al., 2006: Table 5.3).

Table 2 presents the situation in 2005 based on the national one percent population sample data. Less than 60% of urban women were recorded as being employed, compared to 80% of men. Significantly more women had dropped out of the labour market (rather than being unemployed) compared to men. The question of whether these women or men stopped working, or instead moved into marginal forms of income generation activity, is less easy to answer. Evidence from qualitative studies undertaken at the height of restructuring suggest a range of coping strategies employed – particularly by women – to earn income and reduce expenditures through activities from petty trading and street vending, to garbage collection and recycling (Cook and Jolly, 2000). More recent studies suggest that such activities may have become a more established part of the livelihoods of many low incomes families,

although this is rarely recorded in official data. Such income generating activities, essential to maintain basic livelihoods of lower income urban households, are often not considered ‘employment’ even by those undertaking them (Lee, 2005). Since the introduction of the Minimum Living Standard (*dibao*) programme, there may be added incentive not to report small amounts of irregular income which may affect access to welfare benefits.

On the other hand, it is also possible that some people captured by the ‘residual’ method of calculation are in fact professional, white collar workers who do not formally register to avoid administrative procedures and regulations or taxation. This end of the spectrum may be important to policy-makers in terms of taxation and other regulations; but is generally not of concern from a poverty and welfare perspective. In addition, employers even in formal, registered enterprises may not register all their employees in order to evade pay roll costs and other contractual obligations. Informal employment conditions for workers can thus be found even within the so-called formal enterprise sector.

Overall, then, it is possible that the ‘residual’ method overestimates ‘informality’ or the population of concern given incentives to under-report. It is also possible, however, that difficulties in identifying certain groups or types of occupation through standard measures exclude many people working in marginal activities from labour force statistics, thus underestimating the population of concern. Improvements in both the conceptualisation of informal employment and the data collection instruments designed to capture such workers are needed to address these limitations.

### **3. Definitions and Data: The China Urban Labour Survey**

The above discussion points to the limits of available data for understanding the nature and extent of informal employment in urban China. A major challenge revolves around the definitions and data required to measure and analyse informal work, enterprises or workers. While there is a large literature on defining and measuring the informal ‘sector’, enterprises

and employment in developing countries, this has not been applied extensively in the Chinese context. Few scholars have attempted to conceptualise the growth of informal employment in a state-dominated economy, and labour force and other survey instruments have not yet been adjusted to the new realities of China's changing labour market. Drawing on widely used definitions, informal employment can be characterised by a lack of security. It may include work for employers, often part-time or temporary, without a contract or social protections; or own-account work with low barriers to entry, little capital investment and low returns (Chen, 2008).

In this paper we attempt to provide a more in-depth picture of the conditions of informal work in urban China using data from the China Urban Labour Survey Round 2 (or CULS2)<sup>15</sup>. This survey adopted the ILO definitions of employment, making the data more comparable with international conventions which attempt to incorporate informal employment more systematically into their instruments. While not specifically designed to understand issues surrounding informality, CULS2 is the best available source for identifying variables closely related to informal employment.

Data was collected in 2005 in five major cities – Fuzhou, Shanghai, Shenyang, Wuhan and Xi'an. These cities were chosen to provide regional diversity and variation in the size of the state versus private sectors, and the diversity of employment options available. Fuzhou and Shanghai are coastal cities that have enjoyed outstanding economic performance throughout the reform period, while Shenyang in the northeast, Wuhan in central China, and Xian in northwest China are interior cities with large, struggling state industrial sectors that have experienced more painful restructuring (Giles et al. 2006). With less diversified economies, the options for reemployment or for private enterprise have been more limited in these cities,

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<sup>15</sup> The China Urban Labor Survey 2 (CULS2) was conducted by the Institute of Population and Labor Economics at the Chinese Academy of Social Sciences (CASS-IPLE) in 2005 in collaboration with provincial and municipal offices of the National Bureau of Statistics. The survey was conducted in five cities with sample of urban households and in twelve cities with migrant households. For this paper, we focus on urban households in 5 cities.

while policy responses among them have also varied. A proportional population sampling approach was used to sample an average of 15 registered urban households in each of 50 neighbourhood clusters within each city. Five hundred households in each city were interviewed. Each household head was asked questions about the family, and all family members were interviewed individually.

The data thus provide a rich source of information to address a set of questions around informal employment. First, we examine the data to identify the variables which best capture informality according to definitions and characteristics commonly used in the literature. We examine the labour market and individual characteristics of informal workers – including their earnings, contract terms and social security. Empirical analysis explores the determinants of informality and specifically explores whether women are more likely to be in informal employment. Does gender play a significant role in determining labour market outcomes (employment relations, status, wages and work conditions) controlling for variables such as individual and household characteristics? Given evidence of growing informalisation, do we see patterns emerging that link women’s changing patterns of labour force participation with insecurity, a higher risk of poverty or more limited access to social protection? Using the city variation, we also examine how the urban economic structure plays out in terms of levels of informality and employment outcomes.

#### **4. Is informal work women’s work?**

The overall picture of employment from CULS2 is similar to that provided by the NBS nationally representative 1% sample census data. From Tables 2 and 3 we can see consistent patterns in male and female labour force attachment, suggesting that CULS2, despite its small size and focus on 5 large cities, is relatively representative of aggregate labour market conditions. It is possible however that the micro picture varies: given the focus on large cities, we might expect that it overestimates formal employment found disproportionately in larger

cities (government employment, large enterprises, etc.) in comparison to smaller towns where a higher proportion of self-employment, private and small-scale enterprise might be found. In the other direction, however, the more detailed questionnaires may lead CULS2 to pick up more marginal forms of employment that are not captured in standard national survey instruments.

In terms of gender and cohort differences, the most striking result – consistent with expectations – is the high level of female labour force drop-outs (twice the level for men); by contrast, unemployment is lower for women – suggesting less access to social security benefits. Broken down by age cohort, we see that labour market exit occurs largely in the age group where women take ‘early retirement’ (45) or are eligible formally for retirement (50-55 for certain workers). For both men and women the 16-25 cohort has a similar and high share (14-15%) out of the labour force, presumably reflecting the difficulty of finding work for new labour force entrants. However, most strikingly, from 25 the pattern for men and women diverges significantly with almost 20% of women between 26-45 dropping out of the labour force (in addition to 6-9% unemployed), compared to only 5-8% for men, with similar rates of unemployment. Women at prime working age appear to be almost four times more likely than men to be out of the labour force.

The survey asked whether unemployment or ‘dropping out’ was voluntary or involuntary (see Table 4). Whereas women are more likely to report ‘voluntary’ unemployment (perhaps for reasons discussed above) the reverse is true of exiting the labour force. Related analysis of the response to the immediate unemployment shock using an earlier round of CULS data argues for a high rate of ‘discouraged’ workers – apparently voluntarily withdrawing from the labour force given the limited options for re-employment (Wang, forthcoming).

In general, then, women are more likely than men to drop out of the labour force; this is not entirely by choice, and occurs through every age cohort. The remainder of this paper focuses on those women and men who remain in the labour force. This potential ‘selection bias’ of

women withdrawing from the labour market in greater numbers may influence the results if not controlled for; however, if women are withdrawing involuntarily across all age groups, the direction of the bias would reinforce the hypothesised ‘feminisation’ of informal employment and the greater marginalisation of women from formal employment. Women may be facing increasingly stark choices between marginal forms of employment or unemployment.

#### *Indicators of informal employment*

In the absence of specifically designed surveys, the challenge for studies of informal employment is to tease out the best possible indicators of informality from the available data. A number of commonly accepted features of informality are generally used: these can be enterprise-based or employment-based. Here we are principally concerned with employment-based definitions – which are generally (but not exclusively) linked to informal or unregistered enterprises, or to self-employment or own-account work. It is also possible that within formally registered enterprises, workers are employed on an ‘informal’ basis. This is often true for migrant workers in factories, for example, but may also apply to casual or temporary workers in state sector units. The focus on employment leads us to consider a set of characteristics of the employment relationship, and the kind of benefits received – including for example whether there is a long term or permanent contract, social security coverage, as well as working conditions (hours worked and earnings).

Tables 5 to 9 summarise these key variables by gender: 69% of men and 65% of women have a contract; around 12% of men and women report being self-employed. A significant share of self-employed people report having some kind of social insurance coverage – contrary to general expectations from the literature on informality. However, given that most of these will have exited formal jobs in the recent process of restructuring, it is generally assumed that in most cases coverage is associated with previous employment. In all cases, for both self-employed and hired workers, we see a smaller share of women being covered. Likewise we

see variation in terms of working hours and earnings (Tables 8 and 9) with self-employed workers working longer hours than wage workers, and women working slightly more hours than men; self-employed workers earn less than wage workers, and women earn less in both cases than men.

Some of these outcomes may be correlated with the characteristics of the workers (Tables 10 and 11): self-employed people are slightly older, more likely to be married but are less well-educated than wage workers. Women in employment are younger than men, and have less experience, reflecting their higher levels of non-participation. Among the self-employed, women are less well educated but this is not the case among hired workers. Formally employed women are younger but slightly better educated than their male counterparts.

#### *Characteristics of workers in formal versus informal employment*

Based on our initial analysis, we consider the variables that provide the best approximation for categorising formal and informal employment. One approach is to define as informal those without permanent or long term contracts, without social security through an employer, and without clearly formal employment (such as in government). Our preliminary analysis however suggests that these categories may (a) include as formal many currently ‘informal’ workers who were previously covered by social insurance; and (b) include as informal those whose social insurance and contracts are state provided but may not have been reported given the wording of the questions. Instead, we select variables of employment status: formal workers are defined as wage employees with a contract; informal employees include hired workers without a contract and self-employed. Tables 12 and 13 present the characteristics of workers in these categories by gender and age cohort.

Interestingly, from Table 12 we see that, among the youngest age cohort, women are more likely to be in formal employment than men (consistent with their higher employment rates in this cohort – see Table 3). Beyond 24 however, as men increase their labour force participation, the picture is reversed. Women with lower educational levels (primary and

junior high) are dramatically more likely to be in informal employment (Table 13), suggesting greater formal employment opportunities for men at lower levels of education, and consistent with the gendered pattern of state sector redundancies. At higher education levels the difference between the shares of men and women in formal and informal employment disappears. This result suggests the vulnerability of women with lower levels of education and apparently limited employment opportunities, raising policy concerns about their own well-being and that of other household members.

This concern is reinforced by patterns of work, earnings and social security coverage. While women work marginally fewer hours than men, they earn significantly less – with the largest gap being found in informal employment (Table 14). Social security coverage also diverges significantly between formal and informal workers (Table 15), with a relatively small gender gap for all types of insurance. The participation of informal workers in most forms of insurance is relatively low, except for pensions (around 57%). Examining this by age cohort (Table 16) we find that coverage is higher in the older cohorts: employment history data reveals that of this group with pension coverage, 48% have been previously laid-off, thus retaining previous benefits.<sup>16</sup> In a situation of rising informality, this reinforces the need to develop basic social protection schemes that will cover younger cohorts who lack pension and other entitlements irrespective of employment.

#### *City-level variation*

Given the contrasting characteristics of the five cities sampled, we also explore possible city-level variation in informality of employment and associated outcomes. Tables 17 to 21 summarise the key variables. As anticipated, overall employment is higher in the more dynamic coastal cities (Table 17). The most inland cities (Xi'an and Wuhan) which suffered heavy costs of restructuring, but have benefited less than Shenyang (in north-east China) from central and provincial government programmes for reviving the regional economy, have

particularly high levels of unemployment. This contrasts however with official unemployment statistics which are highest in Shenyang (see Table 18).

In terms of the gender gap, the pattern is consistent with high rates of labour force exit for women even in Shanghai and Fuzhou. Interestingly in Shenyang women's unemployment rates are higher than for men, possibly suggesting better coverage of unemployment benefits in a region where lay-offs and enterprise bankruptcies were met by high levels of protest and responses to ameliorate these effects (Lee, 2007). Shenyang was also the home to significant international programmes (for example, the World Bank and DFID) to support the restructuring process and ameliorate some of the worst social costs.

Informal employment in these cities ranges from 25% in Shanghai to 52% in Wuhan (Table 19). In Wuhan 60% of women are reported to be informally employed, while the figure is close to 50% in Shenyang. These rates – which compare with 47% and 41% respectively for men – once again highlight the fundamental change that has taken place in the nature of employment, the severity of these consequences particularly for women, but also the welfare consequences for families and communities. These concerns are reinforced by the variation in earnings (Table 20) both between and within cities. Working hours per day vary only marginally – but still pointing to a heavier burden on women given the usual division of domestic work. Hourly earnings show substantial variation. This is most dramatically seen from the ratios for monthly work and earnings: despite working 15-27% more hours on a monthly basis (suggesting also that women work more days per week), women earn only between 60-70% of men in informal employment (apart from Xi'an which reports 80%), and 70-80% of male earnings in formal employment. The levels of earnings across cities fits the pattern expected from the nature of the local economy. Between city variation in terms of the ratios of informal to informal, and female to male, earnings is more variable. In Wuhan the main difference found is between women in informal employment versus their counterparts in

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<sup>16</sup> This may also be the case for medical insurance, although with the expansion of a Basic Medical Insurance programme in urban areas since 2003 some residents may be covered through this scheme.

formal employment (56% of earnings for 28% more hours worked per month). In Shenyang the gap between formal and informal workers is less significant (82% of earnings) than that between men and women: women in informal employment achieve 60% of men's monthly earnings in informal work for 95% of the hours.

The situation for social security also shows consistent gaps and in some cases large gaps between those employed in formal versus informal employment, and between men and women in both categories (Table 21). Coverage is most extensive in Shanghai, and worst in Wuhan. Highest levels of coverage are in pensions and medical insurance; unemployment and injury insurance is low, particularly among informal workers.

*Multivariate analysis: Why do women work informally?*

The final section presents a multivariate analysis of the determinants of (a) being in the labour force, and (b) of being in formal or informal employment given that a person is in the labour force. Following the earlier discussion, controlling for other characteristics, we expect women to be more likely than men to drop out of the labour force, and less likely to be formally unemployed. For those remaining in employment, women are more likely to be in informal employment. The control variables included in the model include age, education level, marital status, self-reported health status, children and elderly household members, and whether the individual has been laid off or unemployed. A city control is also included.

Table 21 presents the results of a multinomial logit analysis of the main employment categories, showing the likelihood of being unemployed and out of the labour force relative to being employed. The results are generally consistent with expectations and results from the descriptive statistics: controlling for other factors women are significantly more likely to be out of the labour force. Only senior high level of education and above reduce women's probability of being out of the labour force, whereas for men even junior high has this effect. Being married increases the likelihood of being in employment for men, but has less significant effects for women – slightly increasing their probability of being out of the labour

force. For both men and women poor health increases the likelihood of being out of the labour force, while being laid-off or registered unemployed increases the likelihood of both being unemployed and out of the labour force. Having children or the elderly in the household reduces women's labour force participation. Finally, city-level characteristics have the expected impacts on being out of the labour force, but no significant effects on levels of unemployment.

Table 22 presents the findings from a probit model analysing the determinants of being in informal employment relative to formal employment. These are consistent with results already presented. Women are significantly more likely to be in informal employment controlling for other factors, including age, education and city of residence. Education from senior high upwards reduces the likelihood of informal employment for women, but only at college level is education a significant determinant of formality of employment for men. Health is less important in determining informal outcomes than in selecting in or out of the labour force, but good health does have some impact on reducing informal employment for women. Being laid off increases informal employment for men, while being registered unemployed significantly increases the livelihood for both men and women. Having children or elderly in the household has no significant impact.

## **5. Conclusion**

The general picture presented here is one where women are clearly disproportionately engaged in marginal occupations – those defined here as informal, with consequences for their incomes, working hours and access to social security benefits. This rising informality affects both men and women. The pattern varies by characteristics such as age and education level – with women more seriously affected than men among younger cohorts and at lower education levels. Health status of individuals and demographic structure of the household are other factors that appear to reduce formal employment. Substantial variation is found by city: inland cities and those most heavily affected by industrial restructuring have had difficulties

in creating high quality employment for their growing labour force. At the same time, these may be least able financially to provide adequate welfare benefits to their large low income populations.

These descriptive results suggest a number of directions for further research and policy analysis. First there is a need for better quality data designed specifically for understanding this dimension of China's labour market transition and the conditions of those in informal or marginal employment. While the current data set provides clear evidence of the problem, it is apparent from qualitative studies that the most vulnerable and marginal forms of occupation – particularly for women – tend to be hidden from view. The multiple occupations undertaken by low income households to patch together their basic livelihoods are not readily captured in current surveys. Better survey instruments need to be combined with qualitative research to understand the extent and nature of income generating activities among low income urban populations.

From an analytic perspective, improved data will enable stronger analysis of the causes and consequences of these outcomes, including by gender. Other studies provide evidence of employer discrimination by gender, as well as by factors such as disability. For women, however, household characteristics (for example related to children, the sick or elderly needing care) may also limit their ability to engage in formal employment in the absence of other forms of social support. With smaller families, these pressures are likely to be intensified without a substantial improvement in socially provided care. Labour market studies need to integrate analysis of supply side constraints on employment outcomes and their implications for women and household welfare.

Further in-depth analysis of the institutional arrangements and responses of city governments to restructuring and subsequent economic developments can provide interesting insights into the links between market development, government policies, and this evidence of growing informality, low incomes and associated poverty outcomes. Studies such as those on Wuhan,

Shenyang and other cities (Solinger, 2002; Lee, 2007) illuminate the coping strategies of laid-off or marginal workers, their strategies of protest, and the varied responses of the local and central state.

The current economic slowdown, with major impacts on the real economy, jobs and incomes, highlights the urgency of putting in place reliable and responsive social protection mechanisms. Low income workers, those without work, the sick and elderly, all need adequate forms of coverage which – for vast numbers – are no longer being provided through employment. The cohort effects seen in the above analysis suggest that the issue of pensions will become increasingly serious for future generations of elderly. Failure to address the consequences of low-paid and vulnerable workers in the current generation, however, also creates the likelihood of an inter-generation of poverty through the inability to provide adequate education and support to children today.

A better understanding of the low paid and insecure end of the labour market would help to identify who falls into this category, and what kind of policies can support them or – more importantly – their children to avoid future poverty. Is it predominantly poor individuals, in poor communities, who engage in these kind of employment activities? Or does poverty arise from poor jobs? More competitive and flexible labour markets, while possibly offering further efficiency gains, will not resolve the exclusions already visible in urban areas. Further government intervention in the form of active labour market policies combined with stronger, more generous and responsive social protection mechanisms will be essential to counter the negative impacts of the informalisation of employment discussed above.

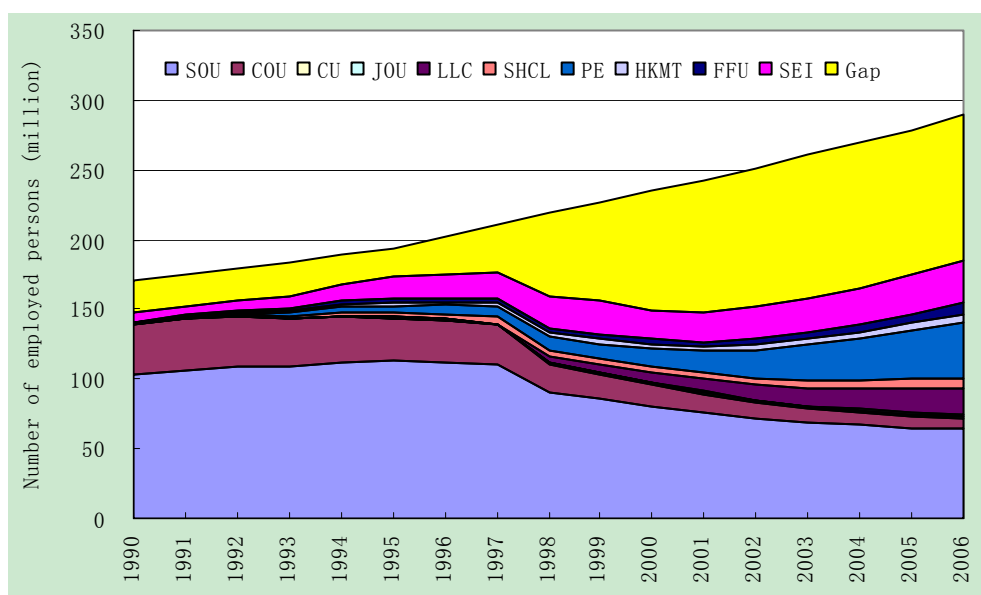
## References

Appleton, Simon, John Knight, Lina Song, and Qingjie Xia. 2002. 'Labor Retrenchment in China: Determinants and Consequences' *China Economic Review* 13(2/3): 252-75

Berik, Gunseli, Xiao-yuan Dong, Gale Summerfield, 2007, 'China's transformation and feminist economics' *Feminist Economics* 13(3-4) July/October:1-37

- Cai, Fang and Wu Yaowu. 2006. China's urban informal employment: scale and characteristics, mimeo.
- Chen, Martha. 2008. 'Informality and Social Protection: Theories and Realities' *IDS Bulletin* 39(2) May:18-27
- Cook, Sarah. 2008. 'The challenge of informality: Perspectives on China's Changing Labour Market' *IDS Bulletin* 39(2) May:48-56
- Cook, Sarah and Susan Jolly, 2000. 'Unemployment, Poverty and Gender in Urban China: Perceptions and Experiences of Laid-off workers in Three Chinese Cities' *IDS Research Report 50* Brighton: IDS
- Dong, Xiao-yuan, Jianchun Yang, Fenglian Du and Sai Ding. 2006. 'Women's Employment and Public-Sector Restructuring: The case of urban China' pp. 87-107 in Grace Lee and Malcolm Warner, eds. *Unemployment in China: Economy, Human Resources and Labor Markets* London: Routledge Contemporary China Series
- Giles, John, Albert Park and Fang Cai, 2006, 'Re-employment of Dislocated Workers in Urban China: The Roles of Information and Incentives' *Journal of Comparative Economics* 34(3):582-607
- Gustafsson, Bjorn, and Shi Li. 2000. 'Economic transformation and the gender earnings gap in urban China' *Journal of Population Economics* 13(2):305-29.
- Jiang, Yongping n.d. 中国妇女的就业状况 (Employment situation of Chinese Women) mimeo
- Knight, John and Lina Song. 2005. *Towards a Labour Market in China*. Oxford: Oxford University Press.
- Lee, Ching Kwan. 2007. *Against the Law: Labor Protests in China's Rustbelt and Sunbelt* Berkeley: University of California Press
- Lee, Ching Kwan. 2005. 'Livelihood struggles and market reform: Unmaking Chinese labour after state socialism' Occasional Paper 2, United Nations Research Institute for Social Development
- Liu, Jieyu. 2007. 'Gender dynamics and redundancy in urban China' *Feminist Economics* 13(3/4): 125-158
- Maurer-Fazio, Margaret, and James Hughes. 2002. 'The effects of market liberalisation on the relative earnings of Chinese women' *Journal of Comparative Economics* 30(4): 709-31
- Meng, Xin, 2000, *Labour market reform in China* Cambridge University Press, Cambridge
- Park, Albert, Fang Cai and Yaohui Zhao, n.d. 'The informalisation of the Chinese labour market' mimeo.
- Solinger, Dorothy. 2002. 'Labour market reform and the plight of the laid-off proletariat' *The China Quarterly* 304-326
- Wang, Meiyang. Forthcoming. 'Shock-induced poverty in urban China' in Sarah Cook and Naila Kabeer Eds. *From Deficits to Trajectories: Rethinking Social Protection as Development Policy in the Asia Region* New Delhi: Routledge

**Figure 1 Changes in the Structure of Employed Persons in Urban China**



Note: SOU—State-owned Units, COU—Collective-owned Units, CU—Cooperative Units, JOU—Joint Ownership Units, LLC—Limited Liability Corporations, SHCL—Share Holding Corporations, Ltd., PE—Private Enterprises, HKMT—Units with Funds from Hong Kong, Macao and Taiwan, FFU—Foreign Funded Units, SEI—Self-employed Individuals, Gap—The difference in employed persons between household-based survey and unit-based reporting system.

Source: National Bureau of Statistics of China, China Statistical Yearbook (2007), China Statistics Press; Gap and percent of Gap calculated by Wang Meiyuan.

**Table 1 Urban employment by gender, 2004 (Million persons)**

	Total	Male	Female	Female share (%)
Urban employment	264.76	150.91	113.85	43.0
Urban enterprise employment	110.99	68.72	42.27	38.1
Other employed	153.77	82.20	71.57	46.5
Other employed (%)	58.1	54.5	62.9	

Source: Jiang Yongping, n.d. Data: 2004 China Labour Statistical Yearbook using 5<sup>th</sup> National Population Sample Survey.

**Table 2 Proportions of Employed, Unemployed and Out of Labour Force by Age Group and Gender**

Age	Male			Female			Total		
	Employed	Unemployed	Out of labour force	Employed	Unemployed	Out of labour force	Employed	Unemployed	Out of labour force
16-25	79.95	12.82	7.23	76.90	9.79	13.32	78.34	11.21	10.45
26-35	91.03	5.10	3.87	74.50	7.66	17.84	82.61	6.41	10.99
36-45	85.38	5.69	8.93	69.17	7.57	23.26	77.29	6.63	16.09
46-55	73.56	5.20	21.23	36.79	3.03	60.19	55.55	4.14	40.31
56-60	48.88	1.65	49.47	12.53	0.27	87.21	30.93	0.97	68.11
Total	80.02	6.18	13.80	59.57	6.29	34.14	69.72	6.24	24.04

Source: Calculated from 2005 1% population sampling survey. Population aged 16-60 excluding students.

**Table 3 Proportions of Employed, Unemployed and Out of Labor Force by Age Group and Gender, 2005**

Age	Male			Female			Total		
	Employed	Unemployed	Out of labor force	Employed	Unemployed	Out of labor force	Employed	Unemployed	Out of labor force
16-25	73.91	12.17	13.91	76.06	8.45	15.49	74.94	10.38	14.67
26-35	87.84	6.70	5.46	75.50	6.24	18.26	81.34	6.46	12.21
36-45	84.23	7.15	8.61	72.75	8.72	18.53	78.29	7.96	13.74
46-55	76.59	6.03	17.38	43.69	3.33	52.98	60.06	4.67	35.27
56-60	42.64	2.03	55.33	5.31	0.00	94.69	23.51	0.99	75.50
Total	77.63	6.73	15.64	57.66	5.62	36.73	67.44	6.16	26.40

Source: CULS2 (2005) People age 16-60 in 5 cities excluding students (including retirees under 60).

**Table 4 Reasons for Unemployment and Out of Labour Force**

	Unemployment		Out of Labour Force	
	Voluntary	Involuntary	Voluntary	Involuntary
Male	4.97	95.03	41.40	58.60
Female	10.95	89.05	58.44	41.56
Total	7.72	92.28	52.56	47.44

Note: Population aged 16-60 in 5 cities excluding students and retired people.

Source: Calculated from CULS2.

**Table 5 Proportion of Hired Workers with Contract**

	Hired workers	
	Have contract	No contract
Male	69.61	30.39
Female	65.04	34.96
Total	67.63	32.37

Note: Population aged 16-60 in 5 cities excluding students and retired people.

Source: Calculated from CULS2.

**Table 6 Employment by Enterprise Ownership and Gender**

	Self-employed people	Hired workers				
		Government and party agencies	State-owned enterprises	Collective-owned enterprises	Private enterprises	Foreign funded enterprises
Male	11.72	20.72	31.61	3.94	25.94	6.06
Female	12.67	24.40	21.51	5.50	28.31	7.60
Total	12.13	22.32	27.22	4.62	26.97	6.73

Note: Population aged 16-60 in 5 cities excluding students and retired people.

Source: Calculated from CULS2.

**Table 7-1 Social Security of Self-employed Workers by Gender**

	Pension	Unemployment insurance	Medical insurance	Injury insurance
Male	56.40	12.32	34.93	6.19
Female	54.91	7.51	28.49	1.16
Total	55.73	10.16	32.02	3.92

Note: Population aged 16-60 in 5 cities excluding students and retired people.

Source: Calculated from CULS2.

**Table 7-2 Social Security of Hired Workers by Gender**

	Pension	Unemployment insurance	Medical insurance	Injury insurance
Male	78.33	37.32	66.09	27.95
Female	72.28	30.33	57.43	19.66
Total	75.74	34.33	62.38	24.40

Note: Population aged 16-60 in 5 cities excluding students and retired people.

Source: Calculated from CULS2.

**Table 8 Working Time by Employment and Gender**

	Weeks per month		Days per week		Hours per day	
	Self-employed people	Hired workers	Self-employed people	Hired workers	Self-employed people	Hired workers
Male	3.95	3.98	6.33	5.43	9.71	8.38
Female	3.98	3.97	6.60	5.39	9.90	8.04
Total	3.96	3.98	6.45	5.41	9.80	8.23

Note: Population aged 16-60 in 5 cities excluding students and retired people.

Source: Calculated from CULS2.

**Table 9 Hourly earnings by Employment and Gender**

	Self-employed people		Hired workers	
	Mean	Standard Deviation	Mean	Standard Deviation
Male	6.64	8.13	7.71	7.06
Female	3.49	3.64	6.18	5.88
Total	5.22	6.68	7.05	6.62

Note: Population aged 16-60 in 5 cities excluding students and retired people.

Source: Calculated from CULS2.

**Table 10 Basic Characteristics of Employees by Gender**

	Age (years)	Years of schooling (years)	Work experience (years)	Married (%)
Self-employed people				
Male	42.01	11.37	24.61	90.05
Female	40.51	10.52	23.98	90.29
Total	41.33	10.98	24.32	90.16
Hired workers				
Male	41.17	12.04	23.12	81.90
Female	38.43	12.14	20.31	80.62
Total	39.98	12.08	21.90	81.35

Note: (1) Population aged 16-60 in 5 cities excluding students and retired people.

(2) Work experience calculated as age minus 6 years of schooling

Source: Calculated from CULS2.

**Table 11 Basic Characteristics and Labour Force Status**

	Age (years)	Years of schooling (years)	Married (%)
		Employed people	
Male	41.25	11.96	82.70
Female	38.67	11.94	81.78
Total	40.13	11.96	82.30
		Unemployed people	
Male	38.65	10.91	65.22
Female	37.72	11.01	82.48
Total	38.22	10.96	73.15
		Dropouts	
Male	42.76	10.55	71.89
Female	41.39	9.97	88.05
Total	41.86	10.17	82.46

Note: Population aged 16-60 in 5 cities excluding students and retired people.

Source: Calculated from CULS2.

**Table 12 Proportions of Formal and Informal Employment by Age Group and Gender**

Age	Male		Female		Total	
	Formal Employment	Informal Employment	Formal Employment	Informal Employment	Formal Employment	Informal Employment
16-25	60.48	39.52	69.62	30.38	64.92	35.08
26-35	64.18	35.82	57.14	42.86	60.73	39.27
36-45	59.86	40.14	53.67	46.33	56.88	43.12
46-55	63.15	36.85	56.12	43.88	60.58	39.42
56-60	51.81	48.19	45.45	54.55	51.06	48.94
Total	61.56	38.44	56.87	43.13	59.51	40.49

**Table 13 Proportions of Formal and Informal Employment by Educational Level and Gender**

Educational level	Male		Female		Total	
	Formal Employment	Informal Employment	Formal Employment	Informal Employment	Formal Employment	Informal Employment
Primary school	56.00	44.00	18.42	81.58	33.33	66.67
Junior high school	54.03	45.97	39.12	60.88	47.94	52.06
Senior high school	58.34	41.66	58.57	41.43	58.44	41.56
College and above	74.90	25.10	73.05	26.95	74.09	25.91
Total	61.57	38.43	56.92	43.08	59.54	40.46

**Table 14 Earnings and Working Hours in Formal and Informal Employment by Gender**

		Monthly earnings			Monthly working hours			Hourly earnings			Daily working hours		
		Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
Formal employmt	Mean	1557.29	1245.79	1426.93	187.88	179.52	184.39	8.75	7.23	8.11	8.24	8.01	8.14
	St. dev.	1282.40	1093.87	1216.54	43.37	32.19	39.30	7.77	6.56	7.32	1.23	1.00	1.15
Informal employmt	Mean	1147.38	768.23	971.90	228.42	223.15	225.98	5.75	4.03	4.95	8.91	8.63	8.78
	St. dev.	1019.74	587.38	868.04	81.21	87.30	84.10	5.95	3.71	5.11	2.21	2.49	2.35
Total	Mean	1401.40	1043.52	1245.30	203.47	198.26	201.20	7.61	5.88	6.85	8.49	8.28	8.40
	St. dev.	1205.61	943.97	1113.25	63.88	65.79	64.76	7.28	5.76	6.71	1.71	1.82	1.76

**Table 15 Participation in Pension, Unemployment, Injury and Medical Insurance by Formal and Informal Employment and Gender**

		Basic pension program			Unemployment insurance			Injury insurance			Medical insurance		
		Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
Formal employment		87.22	81.14	84.72	45.61	37.93	42.45	35.93	26.36	31.99	77.96	70.20	74.77
Informal employment		57.95	55.69	56.90	16.49	13.28	15.00	8.06	4.85	6.58	37.85	32.18	35.23
Total		75.98	70.07	73.43	34.44	27.21	31.31	25.26	17.04	21.71	62.59	53.71	58.75

**Table 16 Participation in Basic Pension Program by Age Group and Gender**

Age	Formal employment			Informal employment			Total employment		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
16-25	75.38	60.87	67.91	17.50	5.00	13.33	53.33	48.31	51.03
26-35	85.25	78.92	82.34	40.98	40.56	40.75	69.32	62.20	65.82
36-45	88.05	83.10	85.81	61.30	60.98	61.13	77.31	72.83	75.16
46-55	89.08	86.67	88.26	68.46	66.67	67.73	81.47	77.87	80.16
56-60	90.70	100.00	91.67	67.50	66.67	67.39	79.52	81.82	79.79
Total	87.22	81.14	84.72	57.95	55.69	56.90	75.98	70.07	73.43

**Table 17 Proportions of Employed, Unemployed and Out of Labor Force by City and Gender**

Age	Male			Female			Total		
	Employed	Unemployed	Out of labor force	Employed	Unemployed	Out of labor force	Employed	Unemployed	Out of labor force
Shanghai	83.03	5.93	11.04	63.60	3.91	32.49	73.10	4.90	22.00
Wuhan	69.36	9.02	21.62	51.08	8.88	40.04	60.44	8.95	30.61
Shenyang	78.35	4.71	16.94	57.54	5.10	37.37	67.41	4.91	27.68
Fuzhou	84.42	4.11	11.47	62.55	4.37	33.08	72.77	4.25	22.98
Xian	74.04	9.36	16.60	52.83	5.87	41.30	63.55	7.63	28.82
Total	77.63	6.73	15.64	57.66	5.62	36.73	67.44	6.16	26.40

**Table 18 Urban employment and registered unemployment by city**

City	Urban Employment (10000 persons)	Registered Unemployment at the Year—end (10000 persons)	Unemployment rate
Fuzhou	83.00	2.80	3.30
Shanghai	331.15	27.40	4.50
Shenyang	230.90	14.70	6.00
Wuhan	255.10	11.20	4.20
Xian	183.20	8.30	4.30

Source: China Labour Statistical Yearbook 2000

Note: *Urban employment* refers to urban unit employment with figures collected from state-owned units, collective units, cooperative units, joint ownership units, limited liability corporations, share-holding corporations Ltd., private enterprises, units with funds from Hong Kong SAR, Macao SAR and Taiwan province, and foreign-funded units. (Cai Fang & Wang Meiyuan 2002, p. 12)

*Urban unemployment* refers to urban inhabitants 1) aged 16 or above, 2) able to work not working; 3) looking for work, and available for work within two weeks. (SSB China Labour Statistical Yearbook 2005)

**Table 19 Proportions of Formal and Informal Employment by City and Gender**

Age	Male		Female		Total	
	Formal Employment	Informal Employment	Formal Employment	Informal Employment	Formal Employment	Informal Employment
Shanghai	78.16	21.84	71.21	28.79	75.07	24.93
Wuhan	53.12	46.88	40.54	59.46	47.93	52.07
Shenyang	58.88	41.12	51.53	48.47	55.57	44.43
Fuzhou	54.15	45.85	58.90	41.10	56.32	43.68
Xian	61.96	38.04	58.26	41.74	60.44	39.56
Total	61.56	38.44	56.87	43.13	59.51	40.49

**Table 20 Earnings and Working Hours in Formal and Informal Employment by City and Gender**

City		Monthly earnings			Monthly working hours			Hourly earnings		Daily working hours	
		Male	Female	Ratio F:M	Male	Female	Ratio F:M	Male	Female	Male	Female
Shanghai	Formal employment	2193.43	1795.71	<b>.81</b>	176.48	173.18	<b>.98</b>	12.91	10.53	8.19	8.11
	Informal employment	1922.96	1292.37	<b>.67</b>	206.54	202.88	<b>.98</b>	9.90	7.20	8.63	8.62
	<b>Ratio (I:F)</b>	<b>.87</b>	<b>.71</b>		<b>1.17</b>	<b>1.17</b>					
Wuhan	Formal employment	1235.77	980.20	<b>.79</b>	194.20	189.18	<b>.97</b>	6.75	5.55	8.10	7.94
	Informal employment	792.84	548.91	<b>.69</b>	233.17	242.44	<b>1.04</b>	3.92	2.59	9.04	8.81
	<b>Ratio (I:F)</b>	<b>.64</b>	<b>.56</b>		<b>1.2</b>	<b>1.28</b>					
Shenyang	Formal employment	1100.84	765.21	<b>.69</b>	196.78	182.19	<b>.93</b>	5.78	4.35	8.37	7.97
	Informal employment	1060.10	626.06	<b>.59</b>	226.40	215.16	<b>.95</b>	5.10	3.45	8.95	8.38
	<b>Ratio (I:F)</b>	<b>.96</b>	<b>.82</b>		<b>1.14</b>	<b>1.18</b>					
Fuzhou	Formal employment	1749.06	1293.63	<b>.74</b>	185.23	174.19	<b>.94</b>	9.89	7.62	8.30	7.98
	Informal employment	1351.97	797.56	<b>.59</b>	222.58	217.09	<b>.96</b>	7.16	4.16	8.61	8.58
	<b>Ratio (I:F)</b>	<b>.77</b>	<b>.62</b>		<b>1.2</b>	<b>1.25</b>					
Xi'an	Formal employment	1098.22	898.14	<b>.82</b>	193.42	187.45	<b>.97</b>	5.80	5.06	8.25	8.00
	Informal employment	908.56	723.55	<b>.80</b>	246.77	230.48	<b>.93</b>	4.11	3.65	9.28	8.71
	<b>Ratio (I:F)</b>	<b>.83</b>	<b>.81</b>		<b>1.27</b>	<b>1.23</b>					

**Table 21 Participation in Pension, Unemployment, Injury and Medical Insurance by City and Gender**

City	Employment	Basic pension program			Unemployment insurance			Injury insurance			Medical insurance		
		Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
Shanghai	Formal	89.60	87.20	88.61	44.48	39.62	42.47	58.19	43.40	52.05	83.22	83.96	83.53
	Informal	44.19	55.81	50.00	20.93	16.28	18.60	20.00	11.63	15.79	45.35	51.16	48.26
	Total	79.43	78.11	78.85	39.22	32.89	36.46	49.74	34.23	42.96	74.74	74.50	74.63
Wuhan	Formal	83.42	81.55	82.77	24.35	21.36	23.31	20.21	15.53	18.58	68.91	71.84	69.93
	Informal	61.40	61.18	61.30	5.26	3.95	4.64	2.92	0.66	1.86	27.49	25.66	26.63
	Total	73.08	69.41	71.57	15.38	10.98	13.57	12.09	6.67	9.85	49.45	44.31	47.33
Shenyang	Formal	83.15	66.67	76.51	50.56	34.17	43.96	22.60	14.88	19.46	74.72	59.50	68.56
	Informal	52.80	57.50	55.10	18.40	14.17	16.33	8.13	5.98	7.08	42.28	31.36	36.93
	Total	70.63	62.08	66.85	37.29	24.17	31.49	16.67	10.50	13.94	61.46	45.61	54.44
Fuzhou	Formal	89.11	83.52	86.46	38.61	31.87	35.42	28.71	15.93	22.66	79.70	57.14	69.01
	Informal	67.46	55.12	62.16	12.43	10.24	11.49	5.33	3.94	4.73	40.83	31.50	36.82
	Total	79.25	71.84	75.88	26.68	22.98	25.00	18.06	11.00	14.85	61.99	46.60	55.00
Xian	Formal	89.00	81.02	85.84	69.38	59.12	65.32	36.84	32.12	34.97	79.90	74.45	77.75
	Informal	54.92	45.26	50.69	32.79	28.42	30.88	10.66	5.26	8.29	38.52	27.37	33.64
	Total	76.44	66.38	72.29	55.89	46.55	52.04	27.19	21.12	24.69	64.65	55.17	60.75

**Table 22 Multinomial Logit Model: Determinants of Being Employed, Unemployed and Out of Labor Force**

Variables	All		Male		Female	
	Unemployed	Out of labor force	Unemployed	Out of labor force	Unemployed	Out of labor force
Female (male=0)	0.240 (1.91)	1.607 (17.46)**				
Age	-0.060 (1.17)	-0.478 (12.79)**	-0.083 (1.36)	-0.410 (7.97)**	0.004 (0.04)	-0.578 (10.67)**
age2	0.000 (0.72)	0.007 (15.42)**	0.001 (1.24)	0.006 (9.80)**	-0.001 (0.42)	0.008 (12.52)**
Junior high school (primary school=0)	0.287 (0.65)	-0.477 (2.14)*	0.374 (0.50)	-0.999 (2.69)**	0.304 (0.53)	-0.240 (0.82)
Senior high school (primary school=0)	-0.178 (0.40)	-0.875 (3.96)**	-0.122 (0.16)	-1.281 (3.46)**	-0.144 (0.26)	-0.692 (2.40)*
College and above (primary school=0)	-1.302 (2.72)**	-1.914 (7.84)**	-1.286 (1.61)	-1.891 (4.78)**	-1.159 (1.89)	-1.942 (5.97)**
Married (Not married=0)	-0.531 (2.89)**	-0.236 (1.50)	-1.038 (3.97)**	-1.091 (4.43)**	-0.037 (0.14)	0.443 (2.19)*
Plain health (bad health=0)	-0.310 (0.99)	-1.312 (6.38)**	-0.348 (0.83)	-1.709 (6.18)**	-0.260 (0.57)	-0.866 (2.99)**
Good health (bad health=0)	-0.784 (2.53)*	-1.578 (7.91)**	-0.822 (2.01)*	-2.078 (7.89)**	-0.761 (1.68)	-1.131 (4.00)**
Being laidoff (not being laidoff=0)	1.197 (4.39)**	0.977 (3.93)**	1.009 (2.76)**	1.110 (3.28)**	1.570 (3.90)**	1.002 (3.02)**
Being registered unemployed (not being registered unemployed=0)	1.416 (6.68)**	0.544 (2.86)**	1.670 (5.97)**	0.557 (1.98)*	1.126 (3.37)**	0.563 (2.19)*
child05 (no children 5 and below=0)	-0.053 (0.23)	0.611 (4.15)**	0.295 (1.00)	0.478 (2.01)*	-0.425 (1.24)	0.762 (3.94)**
old70 (no older person 70 and above=0)	0.543 (3.24)**	0.347 (2.68)**	0.424 (1.84)	0.448 (2.36)*	0.656 (2.66)**	0.225 (1.26)
Wuhan (Shanghai=0)	0.358 (1.77)	0.725 (5.62)**	0.168 (0.62)	0.877 (4.24)**	0.528 (1.68)	0.657 (3.78)**
Shenyang (Shanghai=0)	-0.125 (0.55)	0.456 (3.52)**	-0.430 (1.31)	0.611 (2.81)**	0.184 (0.57)	0.471 (2.73)**

Fuzhou (Shanghai=0)	-0.275 (1.23)	0.077 (0.59)	-0.478 (1.53)	-0.014 (0.06)	-0.066 (0.20)	0.193 (1.17)
Xi'an (Shanghai=0)	0.521 (2.57)*	0.905 (6.89)**	0.580 (2.24)*	0.813 (3.69)**	0.393 (1.20)	1.040 (5.99)**
Constant	-0.028 (0.03)	6.845 (9.17)**	0.504 (0.36)	7.308 (6.90)**	-1.277 (0.68)	8.703 (8.08)**
Observations	4830	4830	2369	2369	2461	2461

Note: (1) Robust z statistics in parentheses;  
 (2)\* significant at 5%; \*\* significant at 1%;  
 (3)The base outcome is “Employed”.

**Table 23 Probit Model: Determinants of Formal and Informal Employment (Marginal effects)**

Variables	All	Male	Female
Informal=1; Formal=0			
Female (male=0)	0.058 (3.15)**		
Age	-0.010 (1.23)	-0.016 (1.47)	-0.002 (0.12)
Age <sup>2</sup>	0.000 (1.22)	0.000 (1.53)	0.000 (0.10)
Junior high school (primary =0)	-0.161 (2.55)*	-0.024 (0.23)	-0.258 (2.82)**
Senior high school (primary=0)	-0.238 (3.75)**	-0.034 (0.33)	-0.416 (4.56)**
College and above (primary=0)	-0.364 (6.24)**	-0.205 (2.10)*	-0.488 (5.96)**
Married (Not married=0)	-0.006 (0.19)	-0.032 (0.69)	0.018 (0.40)
Satisfactory health (bad health=0)	-0.139 (2.24)*	-0.116 (1.44)	-0.164 (1.64)
Good health (bad health=0)	-0.189 (2.95)**	-0.151 (1.81)	-0.232 (2.29)*
Laid-off (not laid-off=0)	0.259 (4.05)**	0.280 (3.52)**	0.216 (1.92)
Registered unemployed (not registered =0)	0.339 (7.09)**	0.428 (6.78)**	0.204 (2.80)**
child05 (no child 5 and below=0)	0.000 (0.01)	0.006 (0.14)	0.000 (0.01)
old70 (no person 70 and above=0)	0.037 (1.25)	0.055 (1.46)	0.006 (0.12)
Wuhan (Shanghai=0)	0.238 (7.97)**	0.231 (5.79)**	0.246 (5.38)**
Shenyang (Shanghai=0)	0.194 (6.35)**	0.198 (4.81)**	0.192 (4.24)**
Fuzhou (Shanghai=0)	0.188 (6.71)**	0.255 (6.69)**	0.113 (2.69)**
Xian (Shanghai=0)	0.171 (5.65)**	0.195 (4.89)**	0.144 (3.10)**
Constant	3222	1817	1405

Note: (1) Robust z statistics in parentheses;

(2) \* significant at 5%; \*\* significant at 1%;

**Appendix 1 Table 1**                      **Changes in the Structure of Employed Persons in Urban China**

Year	Total	SOU	COU	CU	JOU	LLC	SHCL	PE	HKMT	FFU	SEI	Gap	Percent of the Gap
1990	170.41	103.46	35.49	0.00	0.96	0.00	0.00	0.57	0.04	0.62	6.14	23.17	13.60
1991	174.65	106.64	36.28	0.00	0.49	0.00	0.00	0.68	0.69	0.96	6.92	22.68	12.99
1992	178.61	108.89	36.21	0.00	0.56	0.00	0.00	0.98	0.83	1.38	7.40	23.19	12.98
1993	182.62	109.20	33.93	0.00	0.66	0.00	1.64	1.86	1.55	1.33	9.30	24.70	13.53
1994	186.53	112.14	32.85	0.00	0.52	0.00	2.92	3.32	2.11	1.95	12.25	20.58	11.03
1995	190.40	112.61	31.47	0.00	0.53	0.00	3.17	4.85	2.72	2.41	15.60	19.76	10.38
1996	199.22	112.44	30.16	0.00	0.49	0.00	3.63	6.20	2.65	2.75	17.09	26.46	13.28
1997	207.81	110.44	28.83	0.00	0.43	0.00	4.68	7.50	2.81	3.00	19.19	33.74	16.24
1998	216.16	90.58	19.63	1.36	0.48	4.84	4.10	9.73	2.94	2.93	22.59	59.92	27.72
1999	224.12	85.72	17.12	1.44	0.46	6.03	4.20	10.53	3.06	3.06	24.14	71.43	31.87
2000	231.51	81.02	14.99	1.55	0.42	6.87	4.57	12.68	3.10	3.32	21.36	84.72	36.60
2001	239.40	76.40	12.91	1.53	0.45	8.41	4.83	15.27	3.26	3.45	21.31	94.84	39.62
2002	247.80	71.63	11.22	1.61	0.45	10.83	5.38	19.99	3.67	3.91	22.69	100.09	40.39
2003	256.39	68.76	10.00	1.73	0.44	12.61	5.92	25.45	4.09	4.54	23.77	103.18	40.24
2004	264.76	67.10	8.97	1.92	0.44	14.36	6.25	29.94	4.70	5.63	25.21	104.94	39.63
2005	273.31	64.88	8.10	1.88	0.45	17.50	6.99	34.58	5.57	6.88	27.78	104.26	38.15
2006	283.10	64.30	7.64	1.78	0.45	19.20	7.41	39.54	6.11	7.96	30.12	104.69	36.98

**Note:** SOU–State-owned Units, COU–Collective-owned Units, CU–Cooperative Units, JOU–Joint Ownership Units, LLC–Limited Liability Corporations, SHCL–Share Holding Corporations, Ltd., PE–Private Enterprises, HKMT–Units with Funds from Hong Kong, Macao and Taiwan, FFU–Foreign Funded Units, SEI–Self-employed Individuals, Gap–The difference in employed persons between household-based survey and unit-based reporting system.

**Source:** National Bureau of Statistics of China, China Statistical Yearbook (2007), China Statistics Press; Gap and percent of Gap calculated by Meiyang Wang.



## Part 6

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