



TRANSFORMATION, INTEGRATION and GLOBALIZATION ECONOMIC RESEARCH
CENTRUM BADAWCZE TRANSFORMACJI, INTEGRACJI I GLOBALIZACJI

TIGER Working Paper Series

No. 111

China's Urban Unemployment Challenge

Wei Ge

Warsaw, April 2008

China's Urban Unemployment Challenge

Wei Ge
Department of Economics
Bucknell University
Lewisburg, PA 17837, U.S.A.
weige@bucknell.edu
Tel. (570) 577-3452
Fax (570) 577-3451

Abstract

Since the launching of its economic reform and opening up programs in 1979, China has experienced an unprecedented economic expansion, as its real GDP growing at an annual average rate of about 10%. Despite the robust performance, the pressure for employment creation has continued to persist and the situation of excess supply of labor, especially in the urban area, has been worsening. This paper explores the changing patterns of the urban labor market, and identifies the main characteristics of the urban unemployment. On that basis, some viable policy responses will be highlighted.

Keywords

Labor; Unemployment; Urban; Transition; China; Asia

JEL Classifications

J21, J6, O18, O53, R23

China's Urban Unemployment Challenge

1. Introduction

China has been undergoing a rapid process of transition since 1979, when it launched economic reforms and opened up its economy. Over time, the economy has moved away from a centrally planned system becoming increasingly market-oriented; the society has been transformed from one that is rural and agriculturally based to an increasingly urbanizing and industrializing one. The outcome of the transition thus far has been very impressive: real GDP has grown at an annual average rate of about 10% since 1979, unprecedented in modern economic history. The standard of living for the population at large has improved substantially, as per capita income more than quadrupled and more than 200 million people were lifted out of absolute poverty.¹ With trade expanded more than 40 times during the period, China has emerged from a rather closed economy to one of the world's top trading nations today. In more recent years, the country has remained to be the largest foreign direct investment (FDI) recipient in the world, a post which has long been held by the U.S. until the early 2000s. As the process of economic integration continues, "Made in China" is no longer foreign to consumers worldwide; the Chinese companies have become increasingly outreaching, through trade, direct investment, and more active participation in international financial markets. In a broader measure, China's rank on the Human Development Index (HDI) has increased markedly since 1979, faster than any other transition economy or country with a comparable level of income.²

Despite these remarkable accomplishments, the progress, not surprisingly, has been uneven across sectors and regions, and new concerns and challenges continue to emerge as the transitional process forges ahead. One such issue is that of urban unemployment which has

become more pressing in recent years. The three-decade-long rapid economic expansion has apparently not been effective in lightening the pressure on this front. Mishandled, the situation can be potentially damaging, with far-reaching economic, political, and social consequences.

This paper intends to address the problem of urban unemployment in China. In Section 2, we will consider the trends of demography and economy-wide labor supply. Section 3 will provide detailed assessments about the unemployment situation, with special reference made to the urban area. Several possible policy responses will be highlighted in Section 4, which will conclude the paper.

2. Demography and Labor Force

China is the most populous country in the world, with the size of its population surpassing 1.3 billion in 2005. Figure 1 shows the trends of total population and labor force growth during the period of 1990 to 2004. Despite a steady decline in the natural rate of population growth, which is defined as the difference between birth and death rates, the sheer population base has continued to bring about a sizable increase in absolute terms. Between 1990 and 2004, more than 157 million people, averaging about 10.4 million per year, have been added onto the already large total. According to a recent forecast, the size of the total population in China will continue to expand over the next two decades, and is likely to reach 1.45 billion in 2025. By 2050, the overall population is expected to reduce slightly, to about 1.41 billion, and to become the world's second most populous country, second only to India.³

The enlarged population has been accompanied by a steady increase in total labor supply. We measure the economy-wide labor supply by the size of economically active population, which is

defined as persons aged 16 and above who are capable to work, and are participating in, or willing to participate in economic activities. The figure for the total labor supply reached 768 million in 2004, which is about 18% larger than that of 1991. Translating into an annual average term, this amounts to an increase of the workforce by more than 7 million per year during the period.

Two factors, in addition to the overall population growth, have been largely responsible for the significant expansion of total labor supply. One factor is the rising share of the working age population in the total. The working age population refers to those individuals whose age falls in the range of 15 to 65. As Table 1 shows, the share of the working age population in China has risen markedly over the past three decades, from about 62% of the total in 1982 to more than 72% in 2004. China's comparably high rate of labor participation is another attributing factor to the rising total labor supply. The overall rate of labor participation, for instance, was estimated at about 83% in the late 1990s⁴ and, according to the more recent official figure, it stood at 76.5% in 2002. Policies that were first introduced in the 1990s to encourage early retirement helped to somewhat lower the rate of labor participation in more recent years, but it still remained noticeably higher than those of neighboring Asian countries, which have ranged in between 53% and 67% during a comparable period of time.⁵ In terms of gender, the female workforce in China has been more active. Take 2003 as an example. The rate of female labor participation in China was 72.4%, as compared with 68.9% and 55.6%, respectively, for East Asia and the Pacific region and the world as a whole.⁶ The relatively high rate of female labor participation helps, in part, to explain why the overall rate of labor participation in China has been higher than elsewhere.

Between 1990 and 2004, the economy has grown at an annual average rate of 9.3% in real terms, and created some 104.5 million new jobs. Despite such strong performance, the situation of excess labor supply has, in fact, been worsening, as the pressure continues to build up on the supply side. Figure 2 shows, for the period of 1990 to 2004, the gap between labor supply and demand, which is measured by the difference between the economically active population and economy-wide labor employment. In number, the gap for 1985, 1990, and 1995 was, respectively, 2.4 million, 5.7 million, and 7.9 million. From 1998 onward, the gap has all been larger than 14 million, and at its peak, which was reached in 2000, the economy-wide excess labor supply stood at more than 19 million. If we measure the overall rate of unemployment by the share of unemployed economically active population in the total, then the rate has more than double during the period, from less than 1% in 1990 to more than 2% in 2004.

3. Urban Unemployment

Much of the growing burden of excess labor supply has fallen on urban areas. To be consistent with the official statistics, we use the term “urban area” to refer to cities and counties. The definitions of population-related statistics in China have gone through several changes over time. Prior to 1980, the classification of urban and rural population was based on administrative jurisdictions, with the population in townships under the jurisdiction of counties being treated as rural, and the rest, urban. Between 1982 and 1999, the permanent residency was used as the base for classifying rural and urban population. Accordingly, those people who reside permanently in the urban area were recorded as urban residents and otherwise, rural. Since 2000, the residential status has been modified in such a way that the “permanent” requirement is replaced by a much shorter duration.⁷

3.1. Labor Supply

The rising labor supply in urban areas comes from both internal and external sources. Internally, the expansions of the urban population and the urban areas themselves both have played a role. Since the economic transition began in 1979, the pace of urbanization in China has been phenomenal. During the process, the share of urban residents as a percentage of the total population has increased significantly, from 26.4% in 1990 to 41.8% in 2004, while the number for 1979 was only about 19%. The growth rate of the urban population has substantially outpaced that of the total population. Between 1990 and 2004, the size of the urban population has enlarged by about 16.1 million per year on average. In comparison, the size of the total population has only increased by 10.4 million annually. If we apply the nationwide ratio of economically active population to total population, which is averaged about 0.58 for the period of 1990 to 2004, then the rising urban population can be translated into a substantial surge in employable urban labor force: about 81 million in number or some 75% of the total increase in labor supply nationwide. The surging urban population and labor force are also attributable to the administrative reforms that have been introduced during the past three decades. Over the years, many regions have been rezoned, and their administrative status upgraded from “rural” to “urban.” As a result, the number of the cities at prefecture level, for instance, has been lifted to 283 in 2004 from a mere 107 in 1980, and that of the cities at country level to 374 from 113 during the same period.

Externally, the growing trend of rural-to-urban migration has served as a main source of the rapidly rising labor supply in urban areas. The one-way labor flow may be seen as being motivated by both push and pull factors. The success of agricultural reforms, especially during

the 1980s, has brought a significant upsurge in rural labor productivity. The ratio of agricultural labor to arable land, for example, has been steadily falling, from about 3.85 in 1990 down to 2.37 in 2004.⁸ Correspondingly, the rural labor force engaging in agricultural activities has dropped by as much as 17%, from 369 million in 1990 to 308 million in 2004. The released agricultural workers, combined with the natural increase in the rural labor force due to population growth, have exceeded the absorbing capacity that the non-agricultural undertakings in the rural area can provide. Between 1990 and 2004, only about 71 million of non-farming jobs were created in the rural area. This is due primarily to the operation of township-and-village enterprises (TVEs), which typically contributes more than 70% to the total non-farming employments in the rural area. The size of the TVE employment has remained fairly stable in the recent decade, adding, for instance, only about 10 million new jobs during the period of 1995 to 2004. The insufficient absorbing capability in the rural area has, as a push factor, motivated the urban-bound migration. In addition, the relatively high volatility of rural income, when compared with urban jobs, also provides incentives for the migration to take place.

Attracted by the city lights, higher-paying potential job opportunities, and typically better social services and benefits,⁹ the surplus rural labor has been pulled into the urban area at an accelerated pace, giving rise to a phenomenon of “floating population.” The loosened enforcement of administrative controls over rural-to-urban migration has further reinforced the upward trend in recent years. In Chinese statistics, the floating population is characterized as those individuals who have been living in an area other than their officially registered region of origin for six months or more. According to some estimates, the size of the floating population in 2000 already amounted to 144 million.¹⁰ If we convert it to the employable workforce by using the economy-wide 77% rate of labor participation, then the number means that some 111 million

workers were moving from rural to urban area in that year alone. More than half of the floating population involves either cross-county or cross-provincial movements; the number for these “long-distance” types is estimated at 79 million for 2000, about 3.6 times larger than that of 1990.¹¹ The size of the “long-distance” floating population has since been enlarging at a rapid pace. A recent official survey suggests that, of the total floating labor force in 2006, which is estimated at more than 150 million, more than 80% fall in these categories. Of the total, for instance, about 19.6% involves migrants working and living in provincial capital cities, and another 22% in cities within the province of their registered household residence. In addition, more than 44% of the migrants belong to the cross-provincial type, with economically more dynamic and more urbanized regions as main destinations.¹²

3.2. Labor Absorption

To assess the situation of labor absorption, we can construct an indicator which will allow us to gauge the co-movements of labor employment and economic growth. In what follows, we begin with an assessment of the overall economy and then move to a more specific discussion about the urban area.

Figure 3 provides the “growth elasticity of labor demand,” with sectoral breakdowns, for the period of 1991 to 2004. The elasticity is calculated as the ratio of annual rate of employment growth to that of real GDP growth. For the overall economy during the period under consideration, the ratio is about 0.12. That is, for 1% of real GDP growth, we may expect, on average, a 0.12% growth in labor demand. Across sectors, the ratios have varied profoundly, as Figure 3 indicates. Of the fourteen years considered, there are seven years during which the primary sector has been labor shedding, and the secondary sector has done so in three years. On

average, the ratio for the primary sector is a negative 0.08, and only a small positive number of 0.09 is recorded for the secondary sector. The low average ratio for the secondary sector is, in part, attributable to the more forceful push for the state sector reforms since the late 1990s. Between 1998 and 2004, for instance, the state-owned enterprises (SOEs) have laid off, according to the official statistics, about 32.4 million workers. During the peak years of 1999 and 2000, more than 6.5 million layoffs have occurred on an annual basis. In addition, the stagnation of the TVEs in recent years has also contributed to the low ratio for the secondary sector. In comparison with the primary and secondary sectors, the most active job creator during the period has been the tertiary sector, which has posted an average of 0.54, and stayed above 0.60 for five years, and 0.40 for nine years.¹³

Table 2 provides the growth elasticity of labor demand with a more detailed breakdown for the non-agricultural sectors, ranging from mining, manufacturing, and public utility, to services. The average ratios for two periods are computed, 1996 to 1999, and 2000 to 2002, to take into account the difference in data classifications, as noted earlier. Overall, the growth in both mining and manufacturing appears to have been less effective in job creation, as Table 2 suggests. In terms of the period averages, most of the sub-sectors that fall into these categories have demonstrated a worsening performance over time. The sub-sectors that have managed to gain some strength in between the two periods are limited only to furniture manufacturing, tap water production and supply, and electronic and telecommunications, with the latter showing the most encouraging momentum. Several sub-sectors have strong positive showings during the first period—plastic products, nonmetal mineral products, and ordinary machinery manufacturing. A closer look, however, suggests that this might have more to do with the one time surge recorded in either 1998 or 1999, and are inconsistent with their respective year-on-year movements. It is

interesting to note that in both media and academic circles, the Chinese economy has often been described as the “factory of the world,” which is powered by the ample availability of the country’s low cost labor. The information provided in Table 2 paints a quite different picture: the factory is hardly a labor-intensive type; its persistent double digit rates of value-added growth, especially in manufacturing, have not been accompanied by a proportionate growth in labor employment at all. Instead, the production, across a broad spectrum of commodity categories, is heading in the direction of labor-saving.

In contrast to the disappointing sub-sectors in mining, manufacturing, and public utility, certain service branches have acted as the main contributors to the employment growth during the periods, as showed in Table 2. These include, for instance, real estate, social services, and the unclassified “others.” The average ratios for these branches in recent years have all stayed above 0.5, albeit somewhat lower than those posted in the second half of the 1990s. Two branches—finance and insurance, as well as wholesale and retail trade and catering services have delivered a less impressive performance, but the ratios for these branches are still higher than many others listed in the table.

It is useful to note that with a given rate of value-added growth, the branches differ in their actual capacity of job creation. For instance, the real estate sector has created an average 0.11 million jobs with a 1% of value-added growth during the period, whereas 1% growth in wholesale and retail trade and catering services has generated about 6 million employment opportunities. Figure 4 compares the “robustness” of the service branches in terms of physical job creation during a longer time period, from 1991 to 2002. According to this criterion, the eleven service branches considered in Table 2 may be ranked as follows: the unclassified “other;” wholesale and retail

trade and catering services; transport, storage, post and telecommunication; education, culture and arts, radio, film and television; government agencies, parties agencies and social organizations; social services; health care, sports and social welfare; finance and insurance; geological prospecting and water conservancy; scientific research and polytechnic services, and real estate.

To a significant degree, the total demand for a non-agricultural labor force has been urban-based. This is justified by Table 3, which computes the ratios of urban to economy-wide employment across different sectors for the period of 1996 to 2002. As can be seen, the ratios for most non-agricultural sectors have been either close or equal to one, with only five sectors as the exception. These include manufacturing; construction; transport, storage, post and telecommunication; wholesale and retail trade and catering services, and social services. It is useful to note that the term “urban employment” in Chinese statistics is limited to those employed individuals who are officially registered as urban residents and have been living in the urban area for a sufficiently long period of time. The definition precludes those workers who are officially registered as rural residents while being employed by urban units. In terms of these five sectors, the share of employed rural labor force has typically been high. In urban based manufacturing units, for instance, the ratio of rural- to urban-registered workforce was 18.3% in 2003, and 22.3% in 2004. The corresponding ratio for wholesale and retail trade and carting services was 19.3% in 2003, and 23.3% in 2004. The ratio is the largest in the construction sector: 34.8% in 2003, and 35.7% in 2004. When this portion of rural-registered, urban-employed labor force is taken into consideration, the weight of the urban based employment would become much heavier for these sectors than what Table 3 shows. The situation is not

limited to these five sectors, as Table 4 indicates, which provides more details across the economy.

3.3. Urban Unemployment and Characteristics

On the whole, the growth of the labor supply in urban areas has outstripped that of labor demand by a large margin, and the gap has been increasing over time. Table 5 shows the registered urban unemployment at the regional level, both its size and rate, for selected years between 1990 and 2004. As far as unemployment rates are concerned, not only have they been above the national average, but rising as well. This has been the case for nearly every single region in the country—municipalities, provinces, and autonomous regions, and remains so in spite of the strong economic expansion during the period.

There are certain characteristics that can be identified based on the recent development, to which we now turn.

(1) Size

The actual situation of urban unemployment and underemployment in China might have been much more pressing than what the official figures suggest. According to the official numbers, the economy-wide registered unemployment rate in urban areas was 4.1% in 2004, which involved some 8.3 million unemployed.¹⁴ The number, however, covers only those individuals who have met all of the following criteria: capable of working, currently unemployed, and willing to work; with non-agricultural household registration; registered at the local employment service agencies for job applications, and fall within the “working age” (defined as 16-50 for males and 16-45 for females). This definition of the urban unemployed precludes a sizable group of job-seekers in the

urban area. For instance, those urban residents who lost their jobs but have remained active in job seeking through their own efforts, rather than registering at official agencies, are unaccounted for. According to the Chinese Ministry of Labor and Security, of the 27 million workers laid off from the SOEs, only 7.7 million have officially registered as urban unemployed. Even factoring in some 10 million laid-off persons who have chosen to stay permanently unemployed, the remaining gap is still substantial, about 9.3 million. In addition, those rural residents seeking urban employment are also excluded from the calculation. Although there are no precise figures for the actual magnitude of this type, the official estimate of the size of urban informal sector may be indicative: 13% of urban employed in 2004. This is close to 100 million in number, and the bulk of which has to do with rural-to-urban migrants. With insufficient data at hand, estimating actual rates of urban employment is difficult, if not impossible. One thing, however, is certain: the official figures present, at best, an underestimated situation.¹⁵

(2) Scope

Not only have the rates of urban unemployment been on the rise in recent years, but the situation has been widespread as well, across both regions and sectors. As a snap shot, Figure 5 depicts the rate of urban unemployment and that of real GDP growth for all of the country's municipalities, provinces, and autonomous regions in 2004. With a few exceptions, the rates of registered urban unemployment have all been around the national average of 4.1%, varying within a narrow band of $\pm 0.5\%$. This has been so in spite of the wider fluctuation in regional GDP growth.

Despite the significant increase in labor mobility in recent decades, the labor market in China remains to be, to a large extent, locally-based, and the labor market conditions have varied from

region to region.¹⁶ Given the market segmentation, one may expect to observe a pattern where a less serious urban unemployment situation may be evident in those economically more dynamic regions, and vice versa. Figure 5 suggests, however, a more complicated scenario. Consider, for instance, these pairs: Beijing and Shanghai; Guangdong and Shandong. The rates of real GDP growth in Beijing and Shanghai were, respectively, 13.2% and 13.6% in 2004, while the rate of registered urban unemployment was only 1.3% in Beijing, but 4.4% in Shanghai. The real GDP grew at a rate of 14.2% in Guangdong Province, which was accompanied by a 2.7% rate of registered urban unemployment. In Shandong, the economy expanded at a more robust pace of 15.3% in 2004, with the registered urban unemployment rate at 3.4%, some 0.7% higher than that of Guangdong. On the whole, it is difficult, based on the information presented in Figure 5, to establish across the board a negative correlation between economic growth and urban unemployment.

Table 6 identifies the source of urban unemployment by sector, together with the gender information about the unemployed in 2004. Several observations are in order. First, the layoffs, albeit varying significantly across sectors, were nevertheless “universal.” Second, there is no clear evidence over all that gender has played a role in the workers’ dismissal. Third, consistent with the observations made earlier, the manufacturing sector in China has not been “employment-friendly,” as commonly perceived. As seen from the table, the sector contributed the most to the urban layoffs, accounting for as much as 35.6% of the total in 2004. In comparison, the shares of other sectors were considerably smaller.

(3) The Role of Ownership Groups and Foreign Invested Firms

In terms of ownership groups, the SOEs have been the most significant sources for urban layoffs, followed by urban collectives. This is shown in Table 7, which compares the contribution of various ownership groups to urban employment in 2000 and 2004. During this short period of time, the size of SOE employment has declined by some 17%, from 81 million in 2000 down to 67.1 million in 2004. The percentage change for the urban collectives is even more dramatic, an astonishing decline of 40%, which amounts to a job loss for some 6 million workers during this period. This is anticipated, and as the economy continues to undergo the process of transition, one should expect the relative weight of both SOEs and urban collectives to further lighten. The good news is that the jobs created by other ownership groups have managed to more than offset the cutbacks of the SOEs and the urban collectives, resulting in a net gain of 33.3 million between 2000 and 2004. The not-so-good news, however, is that the pace of net job creation has not been fast enough to alter the worsening urban unemployment situation.

Table 7 reveals some interesting facts. First, despite the rapidly declining significance of the SOEs, this ownership group continues to dominate the scene; the situation is unlikely to drastically change, at least for some years to come. Second, both private enterprises and self-employment have quickly emerged in recent years as the important force in job creation. Together, the two groups have contributed more than 60% to the net gain in urban employment during 2000 and 2004. Third, in comparison, the role of the foreign invested firms and the firms involving funding from Hong Kong, Macau and Taiwan has been rather limited, as far as urban job creation is concerned. Of the 33.3 million jobs gained during 2000 and 2004, only about 3.9 million, or some 12%, are attributable to these firms. In 2004, the labor employed by these firms is about 3.9% of the total, while the number for 2000 is only 2.8%.

(4) Characteristics of the Urban Unemployed

Figures 6-8, based on the data for 2004, highlight some interesting characteristics of the urban unemployed. These include the pattern of age distribution, educational background, and the reasons cited for being unemployed. About 86% of the total unemployed in the urban area falls in the age range of 20 to 49. The distribution within this age range has been fairly even, with a slightly higher percentage recorded for those aged 30 to 39, as Figure 6 shows. Of the unemployed, close to 85% have a secondary education; about 8.4% hold a college degree, and some 7% have received only a primary education. This is demonstrated in Figure 7. More than half of the urban unemployed cite either bankruptcy or laying off as the reasons for becoming unemployed, as can be seen from Figure 8. It is interesting to notice that close to 20% of the unemployed are those who cannot find a job after leaving school. Together with the information provided in Figures 6 and 7, one can imagine an enormously competitive job market condition for the youth: 20.7% of the total unemployed fall in the age range of 16 to 24; most of them have received either a secondary or a college education. This seems to suggest that there might have been a mismatch between the types of education and training on one hand, and the skills required by the work units on the other. The recent debate about the successfulness of education reforms in China may support this assertion.

4. Conclusion and Policy Implication

The assessments thus far have painted a troubling picture for the urban unemployment situation in China. Handling it properly is an enormously daunting task; the seriousness of the problem warrants a timely and decisive policy move. Either a policy misstep or a delayed response can be costly, not only in terms of its economic consequences, but the potentially damaging social and

political impacts as well. Although it is not the purpose of this paper to provide a comprehensive discussion about viable policy options, several points can be briefly made.

While seeking technological upgrading, especially in the manufacturing sector, it is helpful to pay more adequate attention to the adoption of labor-augmenting techniques, and to avoid giving up labor-intensive production too fast and too soon. After all, this is where China's comparative advantage lies. In restructuring the state-sector, a more balanced approach, which takes into account the added unemployment pressure, is desirable.

As a potentially promising job creator, a stronger push for the development of the non-state sector, both private enterprises and self-employment, is highly advisable. This is by no means an easy task. The privately owned firms in China, for instance, tend to be small in operating scale and technologically unsophisticated. To a large degree, these firms have been financed by either private savings or loans from informal sources; access to formal financial institutions has been seriously lacking. This amounts to a significant obstacle to the operation of these firms, especially the start-up ones. The same applies to the self-employed. Finding ways to better ensure the necessary financing for the non-state sectors should be an important and integral part of the overall reform of the financial sector. In addition, measures such as micro-loan financing and tax incentives can be put to use in a more active manner.

Recognizing the characteristics of the urban unemployed, a better match of education and training programs with the needs of the economy is warranted. The efforts in overhauling the education system need to be tied more systematically with the economic restructuring and upgrading. Also, firms should receive more incentives in providing on-the-job training. The

promotion of vocational training programs with various specific technical specializations is also desirable.

A stronger push for the improvement of living conditions and social benefits, education and healthcare in particular, in the rural area, together with the expansion of rural non-farming activities may help to slow down the pace of the rural-to-urban migration.

In short, the profound social costs associated with a worsening urban unemployment situation can not be taken lightly, and coping with the situation should be made systematically a crucial element in the overall reform agenda of the policy makers. Maintaining an adequate pace of economic growth is necessary, but not sufficient.

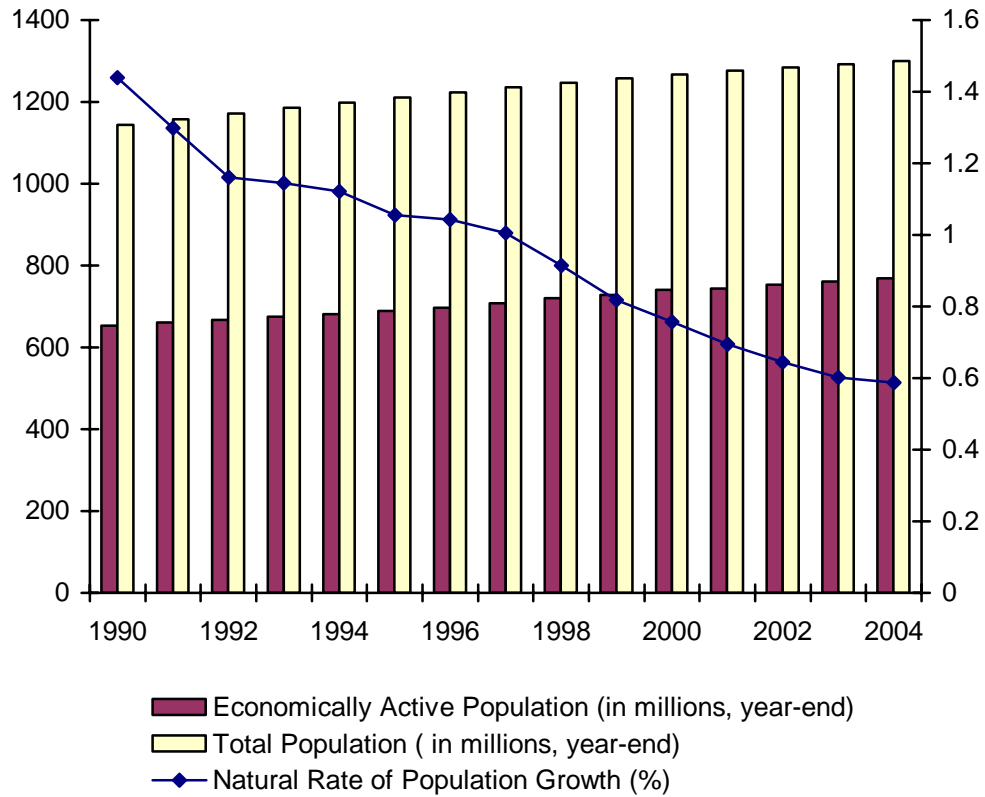
References

- Betcherman, G. and R. Islam, (eds.), 2001, *East Asian Labor Markets and the Economic Crisis: Impacts, Responses, and Lessons*, Washington, DC: The World Bank.
- Brooks, R. and R. Tao, 2003, "China's Labor Market Performance and Challenges," *IMF Working Paper*, WP/03/210, Nov., Washington, DC: IMF.
- Chinese Ministry of Labour and Security, March, 2007, www.molss.gov.cn; *China Labour Statistical Yearbook*, various years.
- Cook, S., S. J. Yao, and J. Zhuang, (eds.) 2000, *The Chinese Economy under Transition*, London: MacMillan.
- Fox, L. and Y. Zhao, 2002, "China's Labor Market Reform: Performance and Prospects," A background study paper for the World Bank, Washington, DC: The World Bank.
- Klein, L. R. and W. Mak, 2007, *The Sustainability of China's Economic Expansion since 1978*, a paper presented at the Project LINK Spring Meeting, Beijing, China, May 14-17.
- Liang, Z. and Z. D. Ma, 2004, "China's Floating Population: New Evidence from the 2000 Census," *Population and Development Review*, 30(3), Sept., pp. 467-88.
- Lipsky, J., 2007, *Understanding China*, Remarks at the Conference on Global Implications of China's Trade, Investment and Growth, Washington, DC: The IMF, April.
- Naughton, B., 2007, *The Chinese Economy: Transitions and Growth*, Cambridge, MA: The MIT Press.
- OECD, 2002, *China in the World Economy: The Domestic Policy Challenges*, Paris: OECD.
- Solinger, D. J., 2002, "Special Report: China's Employment Mess," *China Economic Quarterly*, Q. 4.
- State Statistical Bureau of China, *China Statistical Yearbook*, various years.
- United Nations, 2007, *World Population Prospects: the 2006 Revision*, New York, NY: United Nations.
- UNDP, *Human Development Report*, various years, New York, NY: UNDP.
- Whalley, J. and X. M. Yui, 2006, *Rural Income Volatility and Inequality in China*, mimeo, Center for Economic Research, Beijing University, Beijing.

Xue, J. and W. Zhong, 2003, "Unemployment, Poverty, and Income Disparity in Urban China,"
Asian Economic Journal, No. 4.

Zhen, D. Z., 2005, "China's Employment Challenges and Strategies after the WTO Accession,"
World Bank Policy Research Working Paper, No. 3522, Washington, DC: The World
Bank, Feb.

Figure 1 China
 Natural Rate of Population Growth, Economically Active Population, and Total Population
 1990-2004
 (year-end, millions; %)



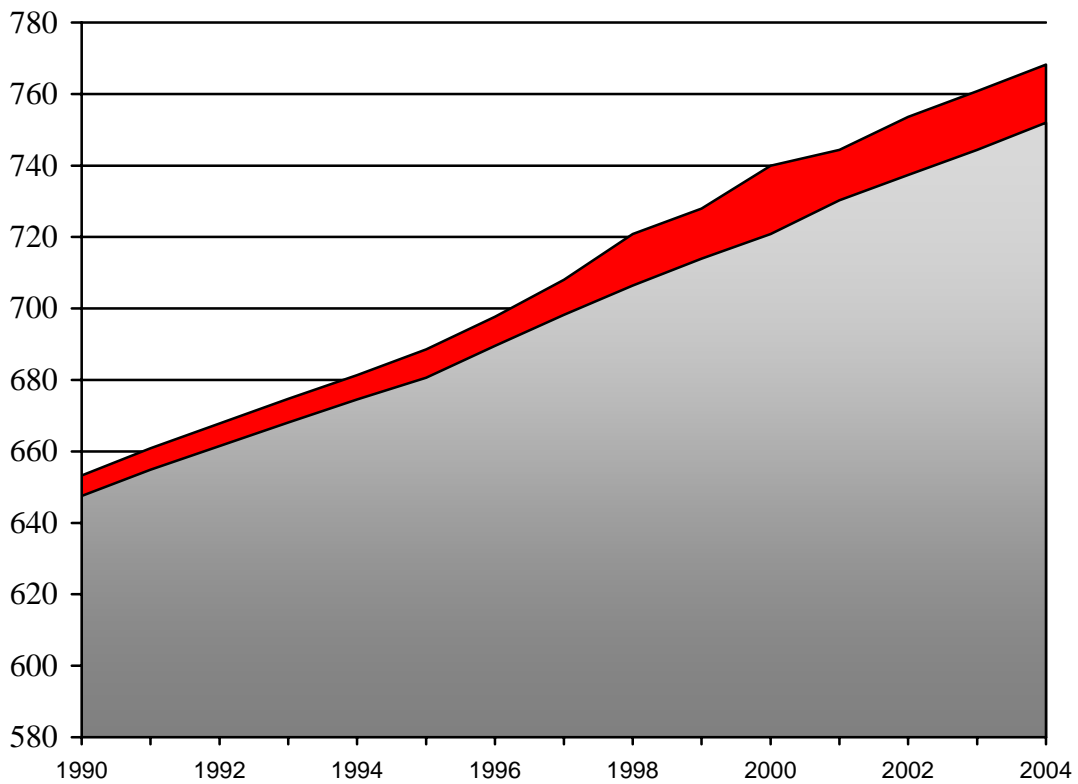
Source: State Statistical Bureau of China, *China Statistical Yearbook 2005*.

Table 1 China
Population by Age Group
Selected years, 1982-2004
(% of total population)

	1982	1990	2000	2004
0-14	33.59	27.69	22.89	19.30
15-64	61.50	66.74	70.15	72.12
65 and over	4.91	5.57	6.96	8.58

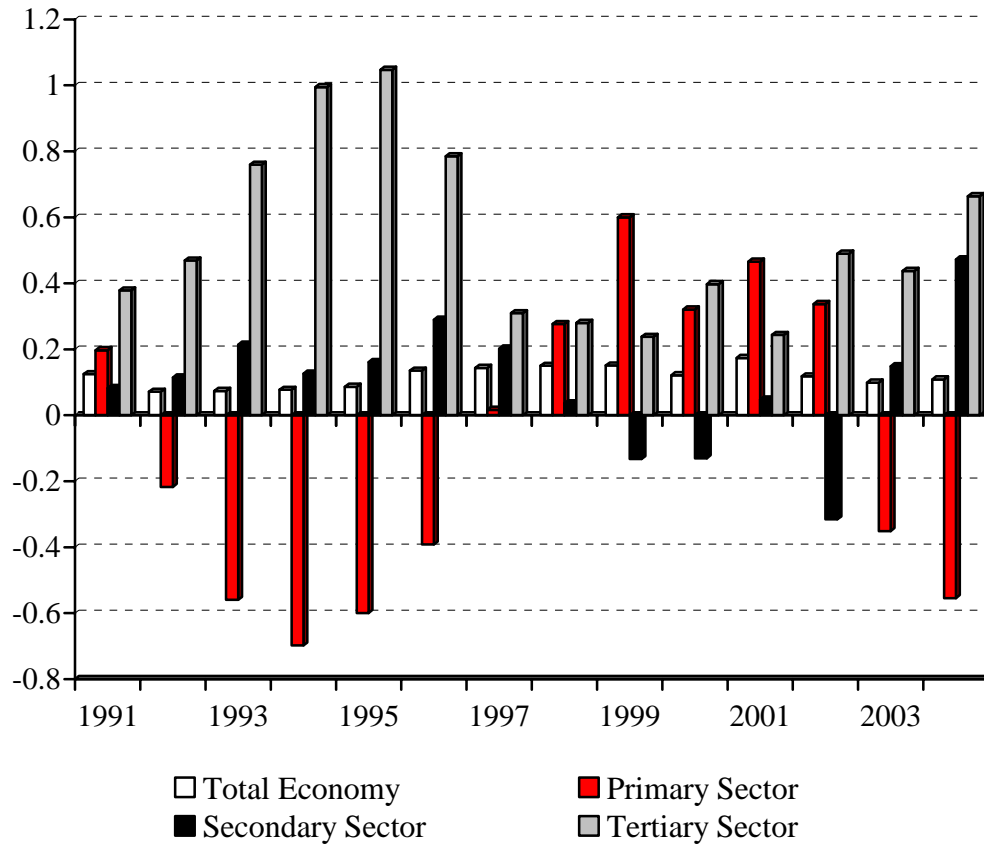
Source: State Statistical Bureau of China, *National Population Census*, various years.

Figure 2 China
Excess Supply of Labor*
1990-2004
(year-end, millions)



Source: State Statistical Bureau of China, *China Statistical Yearbook 2005*.

Figure 3 China
 The Growth Elasticity of Labor Demand by Sector*
 1991-2004



Source: Author's calculation based on State Statistical Bureau of China, *China Statistical Yearbook*, various years.

Table 2 China
The Growth Elasticity of Labor Demand by Non-agricultural Sector
1996-2002
(%; value-added growth rate = 1.00)

	1996-99	2000-02
Coal Mining and Processing	0.42	-0.89
Petroleum and Natural Gas Extraction	-0.88	-0.23
Ferrous Metals Mining and Processing	0.34	-0.01
Nonferrous Metals Mining and Processing	-0.12	-2.15
Nonmetal Minerals Mining and Processing	-0.58	-3.17
Logging and Transport of Timber and Bamboo	1.59	-4.69
Food Processing	0.21	-0.80
Food Manufacturing	0.69	-0.45
Beverage Manufacturing	2.29	-1.35
Tobacco Processing	-1.55	-0.73
Textile Industry	0.40	-0.65
Garments and Other Fiber Products	-1.85	-0.02
Timber Processing, Bamboo, Cane, Palm Fiber and Straw Products	0.65	-0.56
Furniture Manufacturing	0.10	0.11
Papermaking and Paper Products	-1.09	-0.38
Printing and Record Pressing	0.29	-0.56
Stationery, Educational and Sports Goods	1.11	-0.51
Petroleum Processing and Coking Products	1.90	-0.27
Raw Chemical Materials and Chemical Products	1.10	-0.50
Medical and Pharmaceutical Products	-1.94	-0.03
Chemical Fibers	-1.10	-0.55
Rubber Products	0.36	-0.32
Plastic Products	10.62	-0.47
Nonmetal Mineral Products	5.90	-0.41
Smelting and Pressing of Ferrous Metals	-0.13	-0.78
Smelting and Pressing of Nonferrous Metals	0.55	-0.20
Metal Products	-2.98	-0.40
Ordinary Machinery Manufacturing	2.80	-0.60
Special Purpose Equipment Manufacturing	-0.06	-0.57

Table 2 China (cont.)

The Growth Elasticity of Labor Demand by Non-agricultural Sector

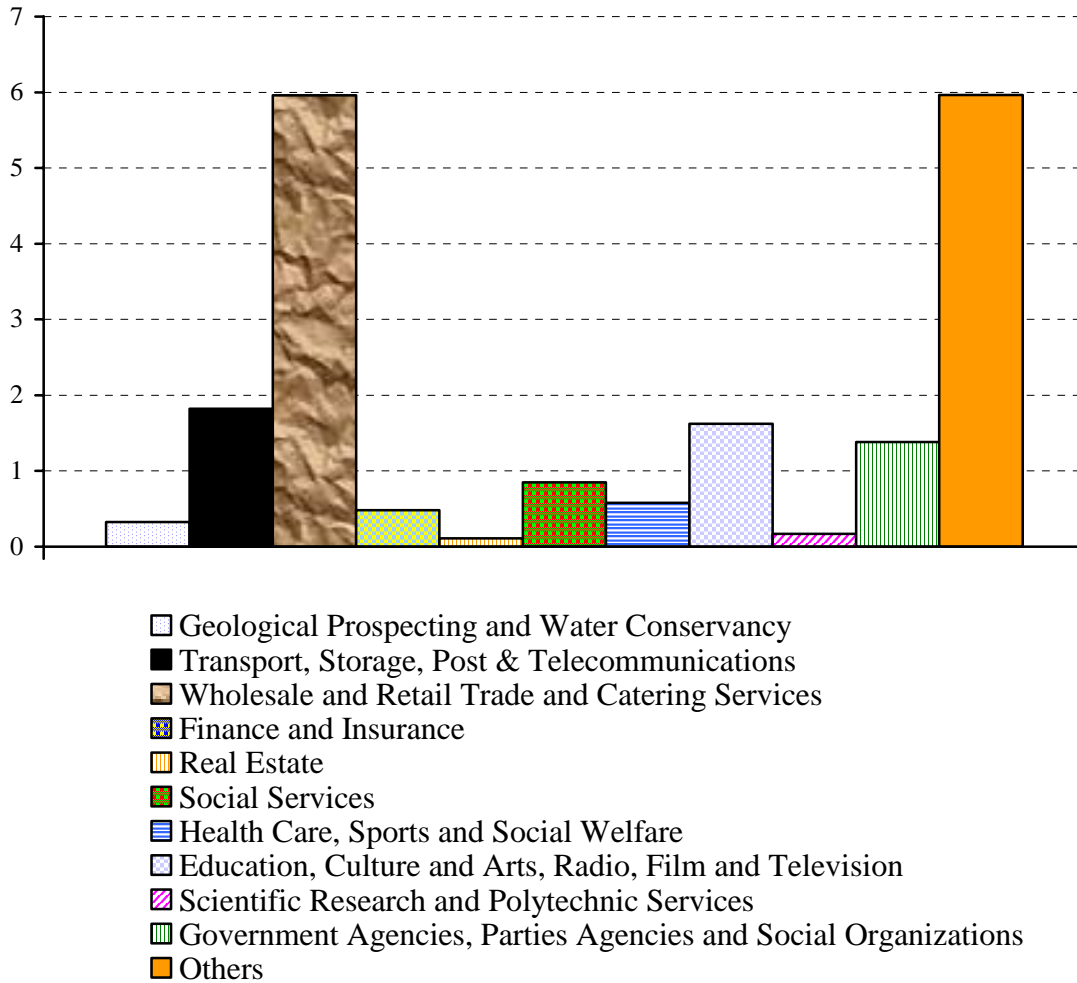
1996-2002

(%; value-added growth rate = 1.00)

	1996-99	2000-02
Transportation Equipment Manufacturing	0.11	-0.45
Electric Equipment and Machinery	-1.19	-0.31
Electronic and Telecommunications	-0.68	0.34
Instruments, Meters, Cultural and Official Machinery	-0.74	-0.17
Electric Power, Steam and Hot Water Production and Supply	0.39	0.02
Gas Production and Supply	0.06	-0.10
Tap Water Production and Supply	0.06	0.07
Geological Prospecting and Water Conservancy	-3.99	-0.95
Transport, Storage, Post & Telecommunications	0.09	0.12
Wholesale and Retail Trade and Catering Services	0.40	0.20
Finance and Insurance	0.69	0.18
Real Estate	0.88	0.76
Social Services	0.95	0.53
Health Care, Sports and Social Welfare	0.26	0.10
Education, Culture and Arts, Radio, Film and Television	0.11	-0.01
Scientific Research and Polytechnic Services	-0.12	-0.24
Government Agencies, Parties Agencies and Social Organizations	0.22	-0.10
Others	0.26	1.48

Source: Author's calculation based on State Statistical Bureau of China, *China Statistical Yearbook*; Ministry of Labour and Social Security of China, *China Labour Statistical Yearbook*, various years.

Figure 4 China
 Employment Creation with One Percent Value-Added Growth in the Tertiary Sector
 Period Average, 1991-2002
 (millions)



Source: Author's calculation based on Ministry of Labour and Social Security of China, *China Labour Statistical Yearbook*, various years.

Table 3 China
Ratio of Urban to Total Employment by Sector
1994-2002
(%, total employment = 1.0000)

	1994	1995	1996	1997	1998	1999	2000	2001	2002
Total	0.2262	0.2248	0.2208	0.2154	0.1797	0.1699	0.1611	0.1529	0.1490
Farming, Forestry, Animal Husbandry and Fishery	0.0207	0.0203	0.0192	0.0190	0.0169	0.0160	0.0155	0.0147	0.0140
Mining and Quarrying	0.9996	0.9887	0.9887	0.9871	0.9810	0.9823	0.9802	0.9772	0.9726
Manufacturing	0.5713	0.5604	0.5474	0.5337	0.4599	0.4383	0.4104	0.3798	0.3588
Production and Supply of Electricity Gas and Water	0.9996	0.9996	0.9993	1.0000	0.9997	1.0000	0.9993	0.9993	0.9986
Construction	0.3489	0.3282	0.3139	0.3008	0.2639	0.2388	0.2196	0.2110	0.2063
Geological Prospecting and Water Conservancy	0.9971	0.9971	0.9993	1.0000	1.0000	1.0000	1.0000	0.9991	0.9969
Transport, Storage, Post and Telecommunications	0.4613	0.4369	0.4239	0.4125	0.3608	0.3483	0.3353	0.3199	0.3069
Wholesale and Retail Trade and Catering Services	0.4753	0.4324	0.4057	0.3746	0.2770	0.2403	0.2154	0.1846	0.1559
Finance and Insurance	1.0000	1.0000	0.9997	1.0000	0.9984	1.0000	0.9994	0.9997	0.9994
Real Estate	1.0000	0.9950	1.0000	0.9989	0.9968	1.0000	1.0000	1.0000	1.0000
Social Services	0.7331	0.6563	0.6320	0.6103	0.5419	0.5157	0.5250	0.5035	0.4762
Health Care, Sports and Social Welfare	0.9991	1.0000	0.9989	1.0000	0.9994	1.0000	1.0000	1.0000	1.0000
Education, Culture and Arts, Radio, Film and Television	0.9999	1.0000	0.9997	0.9998	1.0000	0.9999	1.0000	0.9999	1.0000
Scientific Research and Polytechnic Services	0.9972	0.9995	0.9984	0.9989	0.9972	1.0000	1.0000	1.0000	0.9982
Government Agencies, Parties Agencies and Social Organizations	0.9999	0.9997	0.9996	1.0000	0.9995	1.0000	0.9998	0.9999	0.9997
Others	0.0155	0.0153	0.0232	0.0263	0.0219	0.0203	0.0183	0.0188	0.0203

Source: Author's calculation based on Ministry of Labour and Social Security of China, *China Labour Statistical Yearbook 2005*.

Table 4 China

Share of Rural Labor Force Employed by Urban Units in Total Urban Employment

2003-2004

(%, total urban employment = 100.0)

	2003	2004
Total	10.42	11.88
Agriculture, Forestry, Animal Husbandry and Fishing	8.50	9.48
Mining	9.73	11.06
Manufacturing	18.32	22.28
Production and Distribution of Electricity, Gas and Water	4.13	3.56
Construction	34.83	35.68
Transport, Storage and Post	4.05	4.18
Information Transmission, Computer Service and Software	2.31	2.91
Wholesale and Retail Trade	3.93	4.82
Hotel and Restaurants	15.34	18.46
Financial Intermediation	2.92	3.09
Real Estate	9.82	11.62
Leasing and Business Services	11.61	13.12
Scientific Research, Technical Services, and Geological Prospecting	1.62	2.39
Management of Water Conservancy, Environment and Public Facilities	8.87	9.48
Services to Households and Other Services	11.18	10.88
Education	1.94	1.91
Health, Social Securities and Social Welfare	0.78	0.77
Culture, Sports and Entertainment	2.58	3.08
Public Management and Social Organization	1.67	1.63

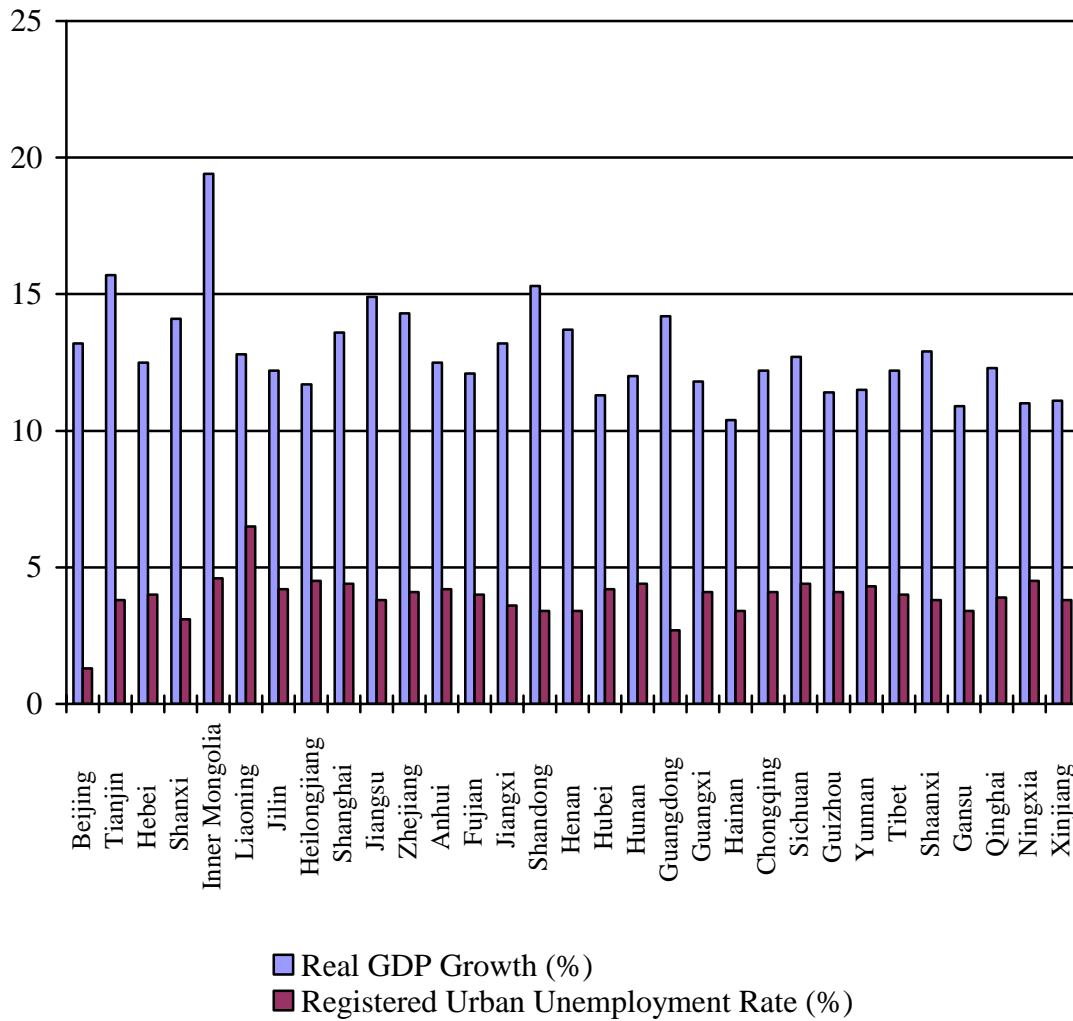
Source: Author's calculation based on State Statistical Bureau of China, *China Statistical Yearbook* and the Ministry of Labour and Social Security of China, *China Labour Statistical Yearbook*, various years.

Table 5 China
Registered Urban Unemployment and Unemployment Rate by Region
Selected years, 1990-2004
(10 thousand; %)

	1990		2002		2003		2004	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Beijing	0.17	0.4	0.60	1.4	0.70	1.4	0.65	1.3
Tianjin	0.81	2.7	1.29	3.9	1.20	3.8	1.18	3.8
Hebei	0.77	1.1	2.22	3.6	2.57	3.9	2.80	4.0
Shanxi	0.55	1.2	1.45	3.4	1.31	3.0	1.37	3.1
Inner Mongolia	1.52	3.8	1.63	4.1	1.76	4.5	1.85	4.6
Liaoning	2.37	2.2	7.56	6.5	7.20	6.5	7.01	6.5
Jilin	1.05	1.9	2.38	3.6	2.84	4.3	2.82	4.2
Heilongjiang	2.04	2.2	4.16	4.9	3.50	4.2	3.29	4.5
Shanghai	0.77	1.5	2.88	4.8	3.01	4.9	2.74	4.4
Jiangsu	2.25	2.4	4.22	4.2	4.18	4.1	4.29	3.8
Zhejiang	1.12	2.2	2.77	4.2	2.83	4.2	3.01	4.1
Anhui	1.52	2.8	2.26	4.0	2.51	4.1	2.61	4.2
Fujian	0.90	2.6	1.50	4.2	1.46	4.1	1.45	4.0
Jiangxi	1.03	2.4	1.78	3.4	2.16	3.6	2.24	3.6
Shandong	2.62	3.2	3.97	3.6	4.13	3.6	4.23	3.4
Henan	2.51	3.3	2.54	2.9	2.63	3.1	3.12	3.4
Hubei	1.27	1.7	4.47	4.3	4.93	4.3	4.94	4.2
Hunan	1.59	2.7	3.04	4.0	3.71	4.5	4.30	4.4
Guangdong	1.92	2.2	3.65	3.1	3.55	2.9	3.59	2.7
Guangxi	1.39	3.9	1.47	3.7	1.49	3.6	1.78	4.1
Hainan	0.35	3.0	0.40	3.1	0.36	3.4	0.47	3.4
Chongqing	-	-	1.62	4.1	1.62	4.1	1.68	4.1
Sichuan	3.80	3.7	3.38	4.5	3.31	4.4	3.33	4.4
Guizhou	1.07	4.1	1.11	4.1	1.12	4.0	1.16	4.1
Yunnan	0.78	2.5	0.98	4.0	1.21	4.1	1.19	4.3
Tibet	-	-	0.13	4.9	-	-	0.12	4.0
Shaanxi	1.12	2.8	1.35	3.3	1.39	3.5	1.85	3.8
Gansu	1.25	4.9	0.87	3.2	0.93	3.4	0.95	3.4
Qinghai	0.42	5.6	0.29	3.6	0.31	3.8	0.35	3.9
Ningxia	0.40	5.4	0.35	4.4	0.38	4.4	0.41	4.5
Xinjiang	0.96	3.0	0.99	3.7	0.99	3.5	1.33	3.8

Source: State Statistical Bureau of China, *China Statistical Yearbook 2005*.

Figure 5 China:
 Real GDP Growth and Registered Urban Unemployment Rate by Region
 2004
 (%)



Source: State Statistical Bureau of China, *China Statistical Yearbook 2005*.

Table 6 China
Registered Urban Unemployed by Sector and Gender
2004
(%)

Sector	Total (% of total)	Male (% of male total)	Female (% of female total)
Agriculture, Forestry, Farming of Animals and Fishery	6.2	6.8	5.6
Mining	2.5	2.5	2.5
Manufacturing	35.6	36.8	34.5
Production and Distribution of Electricity, Gas, and Water	1.9	2.5	1.4
Construction	5.3	7.3	3.4
Transport, Storage, Post and Telecommunications	7.0	9.3	5.1
Data Transmission, Computer Service and Software	1.1	1.3	1.0
Wholesale and Retail Trade	14.6	12.2	16.8
Hotel and Catering Services	6.8	4.7	8.6
Finance and Insurance	1.0	1.0	1.1
Real Estate	0.6	0.8	0.5
Leasing and Business Services	3.3	3.3	3.3
Scientific Research, Technical Services, and Geological Prospecting	0.6	0.7	0.5
Water Conservancy, Environment and Public Utility Management	0.4	0.4	0.5
Public and Other Services	9.4	7.0	11.4
Education	0.7	0.5	0.9
Public Health, Social Securities and Social Welfare	0.7	0.5	1.0
Culture, Sports and Entertainment	0.7	0.6	0.8
Public Administration and Social Organizations	1.3	1.7	1.0
International Organizations	0.1	0.2	-

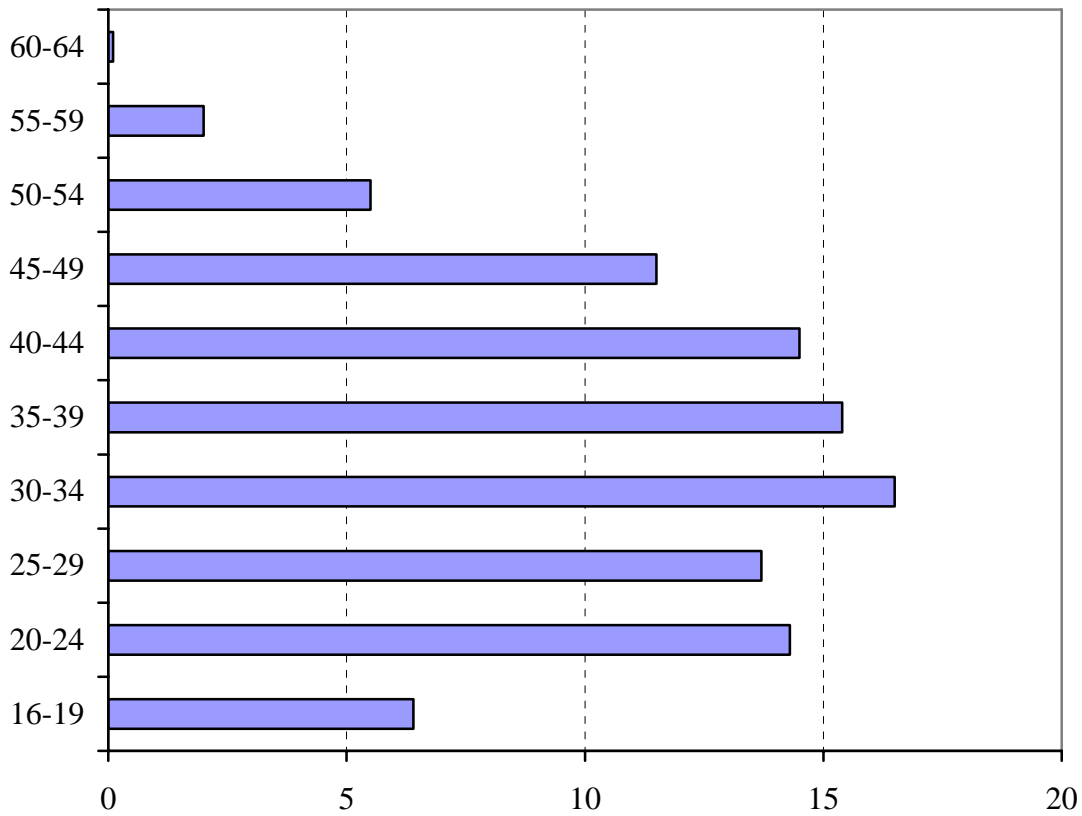
Source: Ministry of Labour and Social Security of China, *China Labour Statistical Yearbook 2005*.

Table 7 China
 Urban Employment by Ownership Group
 2000 and 2004
 (millions)

	2000	2004
Urban Employed	231.5	264.8
State-owned Units	81.0	67.1
Urban Collective-owned Units	15.0	9.0
Cooperative Units	1.5	1.9
Joint Ownership Units	0.4	0.4
Limited Liability Corporations	6.9	14.4
Share-holding Corporations Ltd.	4.6	6.3
Private Enterprises	12.7	29.9
Units with Funds from Hong Kong, Macao & Taiwan	3.1	4.7
Foreign Funded Units	3.3	5.6
Self-employed	21.4	25.2

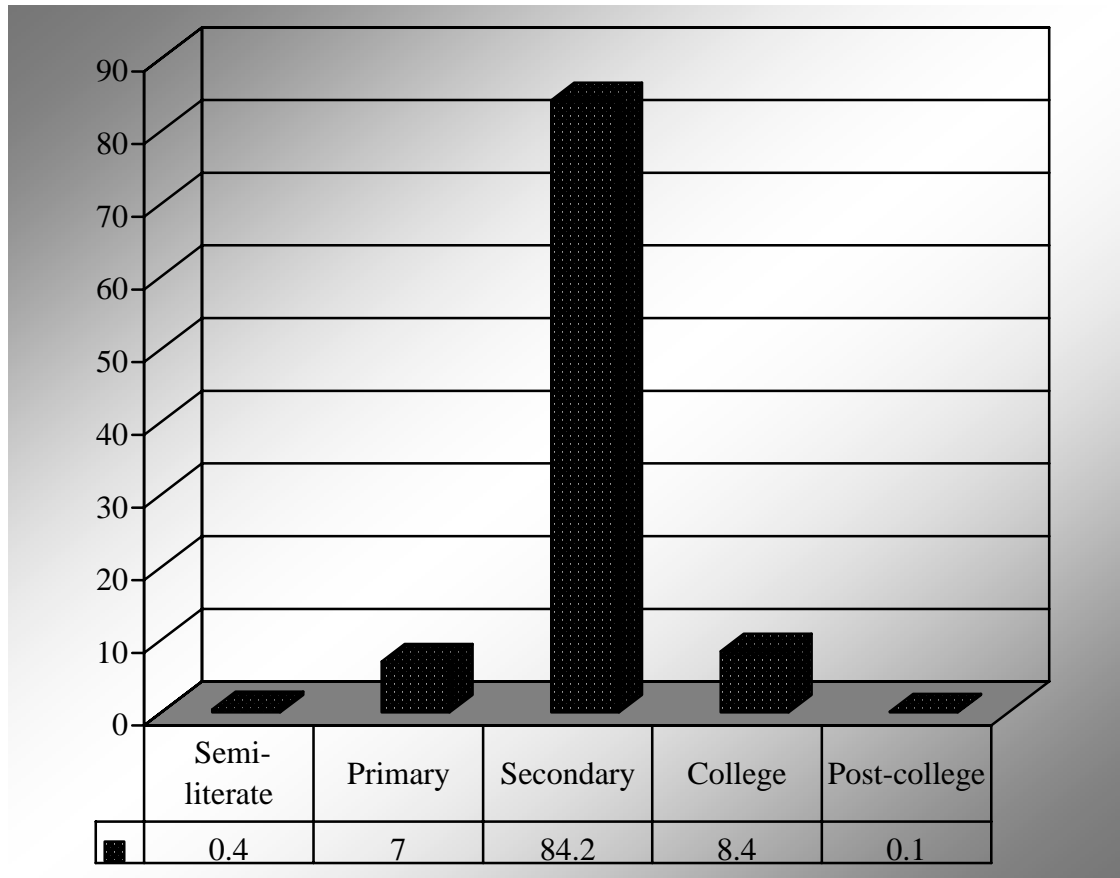
Source: State Statistical Bureau of China, *China Statistical Yearbook 2006*.

Figure 6 China
Registered Urban Unemployed by Age
2004
(% of total)



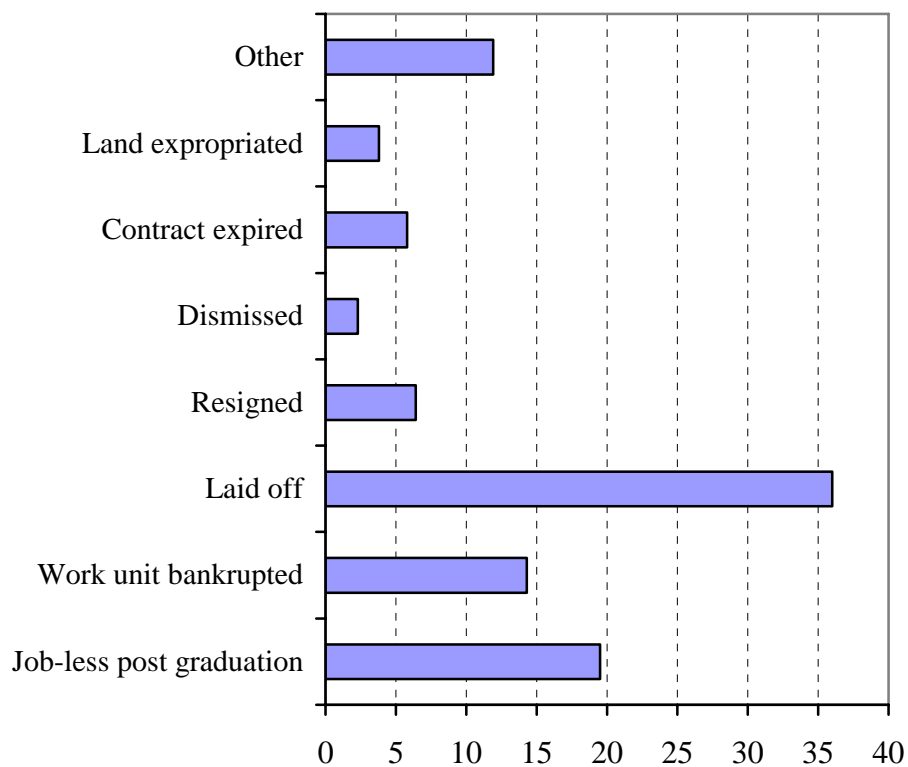
Source: Ministry of Labour and Social Security of China, *China Labour Statistical Yearbook 2005*.

Figure 7 China
Registered Urban Unemployed by Education Background
2004
(% of total)



Source: Author's calculation based on Ministry of Labour and Social Security of China, *China Labour Statistical Yearbook 2005*.

Figure 8 China
Registered Urban Unemployed by Reason
2004
(% of total)



Source: Ministry of Labour and Social Security of China, *China Labour Statistical Yearbook 2005*.

¹ As a reflection of these developments, the wage differential between Chinese workers and their American counterparts, for example, has been rapidly declining, from as much as a ratio of 1:40 in the early 1980s (with 1 represents the Chinese wage rates, and 40 for the Americans) down to 1:20 today, and is expected to fall further to a single-digit level. See Klein, L. R. and W. Mak, *The Sustainability of China's Economic Expansion since 1978*, a paper presented at the Project LINK Spring Meeting, Beijing, China, May 14-17, 2007.

² Between 1979 and 2004, for instance, the Chinese HDI has improved by about 0.20. In comparison, the number for the U.S. during the same period is 0.06 and for Russia during 1990 and 2001, -0.03. See UNDP, *Human Development Report*, various years, New York, NY: UNDP.

³ See United Nations, *World Population Prospects: the 2006 Revision*, New York, NY: United Nations, 2007.

⁴ See Brooks, R. and R. Tao, "China's Labor Market Performance and Challenges," *IMF Working Paper*, WP/03/210, Nov. 2003, Washington, DC: IMF.

⁵ The economies under consideration include Indonesia, Malaysia, the Philippines, Thailand, and South Korea. See Betcherman, G. and R. Islam, (eds.), *East Asian Labor Markets and the Economic Crisis: Impacts, Responses, and Lessons*, Washington, DC: The World Bank, 2001.

⁶ See UNDP, *Human Development Report 2005*, New York, NY: UNDP, 2005.

⁷ See State Statistical Bureau of China, "Explanatory Notes of Main Statistical Indicators," *Statistical Yearbook of China*.

⁸ An estimate suggests that controlling for employment, a 1/15th hectare increase in per capita land would result in a 36% increase in per capita income for farming households. See Cook, S., S. J. Yao, and J. Zhuang, (eds.), *The Chinese Economy under Transition*, London: MacMillan, 2000.

⁹ According to some estimates, the rural income in China is less than one-third of the urban income and, when the differences in social benefits are factored in, it could be as low as one to six. See Lipsky, J., *Understanding China*, Remarks at the Conference on Global Implications of China's Trade, Investment and Growth, Washington, DC: The IMF, April 2007; Whalley, J. and X. M. Yui, *Rural Income Volatility and Inequality in China*, mimeo, Center for Economic Research, Beijing University, Beijing, 2006.

¹⁰ For a more detailed count on the floating population, see Liang, Z. and Z. D. Ma, "China's Floating Population: New Evidence from the 2000 Census," *Population and Development Review*, 30(3), Sept., 2004, pp. 467-88.

¹¹ See Naughton, B., *The Chinese Economy: Transitions and Growth*, Cambridge, MA: The MIT Press, 2007.

¹² The numbers are drawn from a survey provided by the Chinese Ministry of Labour and Security, March, 2007, www.molss.gov.cn.

¹³ In a similar exercise, the elasticity is calculated on a basis of five-year average for the period of 1955 to 1999. See Zhen, D. Z., "China's Employment Challenges and Strategies after the WTO Accession," *World Bank Policy Research Working Paper*, No. 3522, Washington, DC: The World Bank, Feb. 2005.

¹⁴ See State Statistical Bureau of China, *China Statistical Yearbook 2006*.

¹⁵ Some estimates claim that, in as recent as 2000, the rate of urban unemployment in China had already reached 11.5%, nearly four times higher than the official figure of 3.1% for that year. See Xue, J. and W. Zhong, "Unemployment, Poverty, and Income Disparity in Urban China," *Asian Economic Journal*, No. 4, 2003. The accuracy of such an estimate is subjecting to debate, given the data availability and quality. For arguments along these lines, see, among others, Solinger, D. J., "Special Report: China's Employment Mess," *China Economic Quarterly*, Q. 4, 2002.

¹⁶ Some studies have revealed that the situation of labor market segmentation exists not only between, but also within urban and rural areas. It also applies to migrant and non-migrant groups. See OECD, *China in the World Economy: The Domestic Policy Challenges*, Paris: OECD, 2002; Fox, L. and Y. Zhao, "China's Labor Market Reform: Performance and Prospects," A background study paper for the World Bank, Washington, DC: The World Bank, 2002.