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### Economic Transformation and Urban-Rural Disparity in China, 2002-2008

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## Economic Transformation and Urban-Rural Disparity in China, 2002-2008

### Abstract

The year 2008 marked the 30th anniversary of China's beginning on its path of economic transformation. During the past three decades, a series of reform policies have been carried out to liberalize the economy and attract foreign investments. Rapid economic growth is accompanied by rising inequality. The Gini Coefficient of China increased from 0.23 in 1980 to 0.47 in 2005, according to official statistics (NBS). This disequalizing trend coincides with the initial stage of the debated Kuznets curve in which inequality of income distribution first increases during urbanization because of the difference between returns to industries and agriculture; then decreases as a result of the spill-over effect of macroeconomic growth. Question remains whether China's inequality has reached the top of the U-curve and started the down-sloping trend of inequality or has yet to experience more acute inequality.

This paper chiefly focuses on urban-rural inequality, especially urban-rural income inequality in China from 2002 to 2008, a recent time period that has been relatively less researched, with regard to intra urban and intra rural inequality, to analyze the trend of China's inequality. It also addresses emerging factors that can potentially reshape China's landscape of inequality such as rural-to-urban migration and policy responses.

### Keywords

Economic Transformation, Urban-Rural Inequality, Income Inequality, China, 2002-2008

### Cover Page Footnote

I would like to thank the Freeman Foundation for their generous sponsorship of this project. I would also like to thank Dr. Sohrab Behdad from Denison University for guiding me along this project and offer me crucial suggestions.

## Introduction

The year 2008 marked the 30<sup>th</sup> anniversary of China's beginning on its path of economic transformation. During the past three decades, a series of reform policies have been carried out to liberalize the economy and attract foreign investments. From late 1970s to 2008, China enjoyed an extensive period of consecutive growth with an average annual rate of 9.67%, compared with the world average of 3.3%. GDP per capita grew more than tenfold, from less than 200 dollars in 1979 to more than 3,000 dollars in 2008 (NBS). This economic transformation has contributed to China's economic performance as well as the living standard of its population (Chow, 2007; Bhalla et al., 2003; Chen and Lu, 2006).

Such rapid economic growth was accompanied by rising inequality. The Gini Coefficient of China, a key indicator of overall inequality, increased from 0.23 in 1980 to 0.47 in 2005, according to official statistics (NBS). This indicates that China has changed from an egalitarian economy to a more unequal one. This disequalizing trend coincides with the initial stage of the debated Kuznets curve in which inequality of income distribution first increases during urbanization because of the difference between returns to industries and agriculture; then decreases as a result of the spill-over effect of macroeconomic growth (Anand and Kanbur, 1993; Kuznets, 1955). In addition, inequality is a universal phenomenon observed in transitional economies such as east European countries (Milanovic, 1999) and other parts of the world (Sukiassyan, 2007). Given the previous central planning mechanism that distributes income in an egalitarian way, China's rising inequality reflects the increasingly important role of market force in income distribution. While disparities in income due to working hour, output, and labor quality promote work incentives, excessive inequality harms social stability and has a negative impact on future progress in economics, as is the case with many Latin American countries (Galbraith et al., 2007).

Inequality in China has attracted academic attention throughout the years of its economic reform (Yao et al., 2005; Eastman and Lipton, 2004). Literature predominantly examines China's inequality issue in two categories: regional (Ho and Li, 2007; Qian and Smyth, 2008) and urban-rural inequality (Natrajan, 2006; Li and Zahniser, 2002; Okushima and Uchimura, 2006; Sicular et al., 2007; Liu, 2006). These studies focus on possible causes to China's rising inequality such as geographic location, biased policies, the housing registration system, housing reform, the introduction of labor markets, etc.. Among these studies, some show that the rise of overall inequality in China has slowed down since the second half of 1990s after a period of sharp increase since the reform (Gustaffson et al., 2008; Kahn and Riskin, 2008; Yue

et al., 2008). They conclude from empirical evidence that within-urban and within-rural inequality and regional inequality in the East part of China have been narrowed due to expanded urbanization, increased employment opportunities for the rural population and the trickling down effect of macroeconomic growth.

These conclusions also justify the inverse Kuznets U-shaped curve of the inequality and development relationship. According to these studies, this stabilization of nation-wide income inequality versus the decreasing income gap of within urban and within rural inequality suggest that the urban-rural disparity has remained wide, if not further widened. The urban-rural income inequality has become a major disequalizing force that contributes to inequality in China. Question remains whether China's inequality has reached the top of the U-curve and started the down-sloping trend of inequality or has yet to experience more acute inequality.

This paper will chiefly focus on urban-rural inequality, especially urban-rural income inequality in China from 2002 to 2008, a recent time period that has been relatively less researched. It will also address emerging factors that can potentially reshape China's landscape of inequality such as rural-to-urban migration and policy responses. The paper comprises of four sections. The first section introduces the economic transformation background of China's rising inequality and summarizes previous literature. The second section utilizes empirical methods to investigate urban-rural inequality during the period of 2002-2008. The third section addresses emerging rural-to-urban migration and policy responses to the previous period of widened urban-rural inequality. The fourth section concludes with results and analysis and poses questions for future research.

## **1. Economic Transformation and Urban-Rural Inequality**

### **A. Economic Transformation**

China's Economic Transformation was initiated in 1978. Originally started in the agriculture sector in rural areas, reforms gradually penetrated into industrial sectors. Reforms later focused more on urban development. The transformation first took place experimentally and gained speed in the 1990s. These ongoing economic and political reforms significantly affected the urban-rural inequality via redistributive dynamics. Their influences transformed China from a central-planning system into a more market-oriented economy.

### **Agriculture in Rural Areas**

Privatization of the rural agricultural sector spearheaded China's

economic reform. The individual “household responsibility system” granted farmers freedom of output disposition after fulfilling a fixed quota, which created incentives for farmers to increase output. This incentive system unleashed waves of productive efficiencies that were absent from the previous collectivist system. The output of grain increased 33.6% from 1978 to 1984 and reached 407.31 million tons. Because of the privatization, farmers also began to engage in other value-adding agricultural activities such as raising live-stocks and producing handicrafts to increase income. Total contribution of rural and agricultural reforms to rural growth during from 1978 to 1984 was a record 46.89 percent, reflecting the effectiveness of the central policies (Lin, 1994). Government also increased prices for agricultural goods, which were compressed to finance the development of heavy industries. The policies in the agriculture sector boosted the rural economy and increased the incomes of rural residents. As a result, the urban-rural income gap dropped below 2 by 1985 (Wang, 2008).

However, after 1985, the diminishing marginal return and relatively low productivity of agriculture became more pronounced. While rural income on average grew 12.6% annually from 1978 to 2007 (NBS), urban income increased more rapidly. The urban to rural income gap increased from 2.7 in 1988 to 3.33 in 2007 (NBS).

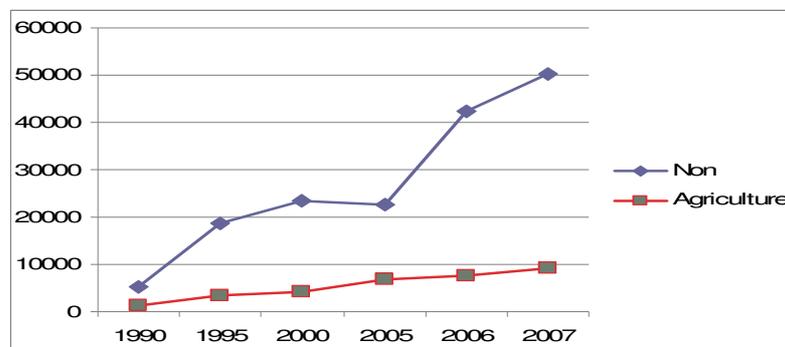


Figure 1. Productivity of Agriculture and non-agriculture per capita/RMB

Confronted with rising urban-rural inequality, the Chinese State Council implemented further reforms. From 2004 to 2009, the State Council issued six annual No. 1 documents focusing on rural development to demonstrate strengthened efforts in increasing rural income and living standards. In the following years, the government invested heavily in rural infrastructures, the most notable of which was the Western Region Development Project aimed at infrastructure construction and development stimulations in the lagged-behind rural inland areas. In recent years, the government experimented with the

practice of rural resident social security in more developed rural areas. The government also eliminated educational surcharges for rural areas and provided subsidies for eligible students and promised to gradually phase out agricultural taxes by the end of 2009. These reforms will no doubt have a positive impact on China's urban-rural inequality.

### **Non-agriculture State-owned Sector (SOE)**

In the early 1980s, many state-owned enterprises (SOEs) faced problems including failure to meet market demands, a lack of regulative supervision, and stagnant technology. SOEs' losses became a big financial burden on government that made their reforms inevitable. Inspired by the success of the rural sector reforms, government introduced the contract responsibility system for managers of SOEs. This policy gave executives of SOEs bonus out of the retained profit beyond a financial target. The government also extended production decision-making power to the enterprise level. Firms were allowed to make their own decisions concerning production, supply, marketing, investment and pricing to encourage profit-maximization (Chow, 2007). However, these reforms had limited effects on SOEs. Due to institutional structures, managers that showed poor performance were simply transferred to another state-owned enterprise. Unlike the privatized agriculture sector, SOEs retained their state ownerships; more delegation to the enterprise did not stop government from intervention. Some bureaucrats were unwilling to give up their stake in the decision-making of SOEs due to vested interests. Many managers were at a loss without the directions from central government. Hence, new policies were resisted or carried out slowly. In 1993, the State Council adopted a more drastic reform. It retained 300 to 500 large state-owned enterprises and developed them into internationally competitive firms. For smaller and medium size SOEs with poor performance, the State Council decided to sell or lease or declare them bankrupt. In 1997, the government extended the reforms by corporatizing the remaining large state-owned enterprises into shareholding companies in hope that diversified ownership could solve incentive problems.

These SOE reforms had seminal influences such as the abolishment of the lifelong employment system in urban areas as well as increased efficiency and market-orientation in retained SOEs (Wu, 2005). However, reform in the state-sectors was incomplete and limited because of deep-rooted bureaucracy, incapability of managers, the endogenous incentive problems of the enterprises, etc, (Chow, 2007; Xiong, 2007). The impact of reforms on urban-rural income inequality lie in the shedding of surplus urban labor and consequent labor market restructuring in the process of privatization or

increasing efficiencies. Between 1995 and 2002 inclusive, no fewer than 78 million workers were laid off (Knight and Xue, 2006). Laying off such a large number of wage-earners increased the urban income gap. Many workers bifurcated into either unemployment or wealth. Studies that used a 1999 urban household survey showed that most laid-off workers faced a tough and unfavorable labor market (Appleton et al., 2002). For the few that could take advantage of the burgeoning private sector, the reforms enabled them to access wealth and higher social status.

### **Non-State Sector**

Non-state enterprises are enterprises that are not subject directly to the central government as SOEs. They include private-enterprises, and enterprises with both state and non-state ownerships. Unlike their state-owned counterparts, non-state enterprises achieved relatively smooth and dynamic development since their reform. Before the late 1970s, few non-state enterprises existed, although they were abundant and functioned well during the first few years after the formation of the People's Republic of China before they were converted into state-owned enterprises. After reforms and the gradual lifting of bans on non-state enterprises, they grew at a much faster rate than the state-owned enterprises (Chow, 2007; Wu, 2005). Non-state sectors accounted for 22.4 percent of gross industrial output in 1978, but this figure increased to 68.76 percent in 2006, making non-state enterprises the major players in China's industry sector (NBS). In recent years, non-state enterprises have entered industries as wide as mining, processing of food, textile, fuels, and chemicals. Literature and official reports have both come to regard non-state enterprises as driving forces of China's economy (Claro, 2005; Lai, 2006; Tian, 1997).

Among the rapidly developing non-state enterprises, the collective township and village enterprises (TVEs) have captured more attention (Wang and Davis; Biggeri et al., 1999; Wong and Mu, 1995) because of their collective compositions and impressive economic performance. Township and village enterprises were owned by the residents and local government and managed with the support of local authorities. Between 1978 and 1993, TVEs share of national industrial output expanded from 9 percent to 27 percent (Fang and Smith, 2008). During 1985 and 1993, TVEs created more than 54 million jobs while state-owned enterprises started shedding workers (Biggeri et al., 1999). The number further increased to 134 million in 1996 (Li, 2006), acting as an important mechanism in reducing urban-rural inequality. In the late 1990s, development of TVEs went down and most were privatized in early 2000s.

### **Financial Sector**

Financial reform took place as early as 1979 when the loans issued by People's bank replaced government subsidies (Dickie, 1981; Hemming and Mansoor 1988; Li and Liu, 2001). In 1985, the People's Bank was changed to the Central Bank of China. Because the government maintained tight control of the economy, the Central bank functioned as a deposit center. The Central Bank of China had no authority in loan making. State-owned banks provided loans to loss-making state-owned enterprises in order for them to keep running and retain full employment. Because the performance of state-owned banks is closely related to the profitability of state-owned enterprises that receive the loans, a large amount of non-performing loans (NPLs) occurred (Santomero, 2001) as SOEs' performances deteriorated.

The government intensified efforts to recapitalize non-performing loans. It set up a special committee to try to revamp the NPLs in order to sell them. However, the NPLs of state-owned banks continued to expand because the loss-making enterprises showed no sign of recovery. In 2002, NPLs and bad loans accounted for 25 to 30 percent of outstanding loans. The total value amounted to 4 trillion RMB, in 2004. These NPLs plague China's banking system and drag China's economic development backward because they deprive financial resources from other profit-making companies.

The Shanghai and Shenzhen Stock Exchanges started in 1990 and 1991, respectively. The introduction of these two stock markets and the revitalization of banking sectors ushered in flows of domestic and foreign capital. This played an important role in the rapid growth of the Chinese economy despite the uneven geographic distribution of this financial capital. Market-oriented commercial banks also emerged during this period.

The financial reform re-opened the stock market, extended the activities of China's banks into more market-oriented financial services in addition to government activities. It is expected that China's accession to WTO will speed up reforms in the financial sector as banks face more pressure from foreign competition.

### **Foreign Investment and Trade**

Since the beginning of the economic reforms, China has gradually stepped out of previous autarkic self-sufficiency and become more integrated into the global economy, especially after its accession into the WTO in 2001. As early as 1980 China had established trade relations with more than 170 countries and regions, and had signed bilateral government trade agreements or protocols with more than 80 of them (NBS). Total value of imports and

exports grew more than 397 times from 35.5 billion RMB in 1978 to 14097.1 billion RMB in 2006(NBS). Rapid increase in trade volume together with government incentive policies attracted investment inflows.

In the 1980s, the Chinese government introduced the Special Economic Zones (SEZs) in Shenzhen, Zhuhai and Xia'men along its eastern coasts to attract foreign investments. The special zones provide tax incentives for foreign direct investment (FDI). The SEZs also offer greater independence in international trade and allow partial ownership of foreign investors in enterprises. These favorable policies attracted waves of FDI inflows. From 1980 to 1995, the annual growth rate of FDI in China averaged about 40%. According to the United Nations Conference on Trade and Development (UNCTAD, 2003), China became the largest recipient of FDI in the world in 2002. Despite FDI's positive effects in the economic growth of China, they almost exclusively benefited the coastal urbanities. They acted as major disequalizing factors in China's urban-rural income inequality.

#### B. Implications on Urban-Rural Inequality

Literature indicates that China has transformed from a more egalitarian society to a more unequal one during its economic transformation (Yao et al; Bhalla et al; Eastman and Lipton). Urban-rural inequality in China not only includes income inequality, but also inequality in living standards such as infrastructure, social security, health care, and education. Market development and government policies are the root causes to the rising inequality of the above factors because of their redistributive effects. (Gao and Riskin, 2009). The next section analyzes the implications of market mechanisms and government policies on wage inequality as well as non-wage urban-rural income inequality in the post-transformation era.

#### **Labor Market**

The introduction of labor markets followed the reform in the state-owned sector. It created several redistributive dynamics in income through changed wage determinants.

Unemployment is one of the direct results of a more market-oriented economy. Before the economic transformation, government was responsible for job allocation of urban workers in China. The overall labor mobility was extremely low. From 1995 to 2002, however, more than 78 million workers were laid off (Knight and Xue, 2006). Government was no longer responsible for ensuring full employment of laborers. Private employers determined wage rate and bonuses for the workers. Thus a labor market was formed in China, in which wages are now subject to market forces.

The enlarged market forces not only changed the return to labor in many industries, but also altered the wage determinants of the labor market. Some industries become more profitable than others. In mining and heavy industries whose wages were high before the reform, return to labor lowered on average 20% and unemployment increased. Reforms also created new winners. Wages increased in burgeoning industries such as telecommunication, transportation and banking.

Wage determinants such as geographic locations, economic sectors and type of enterprise ownerships become more influential while previously important factors of party membership and seniority are no longer as important as they were. Studies show that geographical location is the single most important determinant in equality. Using the Theil T decomposition of income inequality, location accounts for 80 to 90% of inequality, if other individual variables are held constant. Education also plays an increasingly important role in wage determination, with a contribution of 36% in 2002 (Yue et al., 2008). This increased return to education has a positive externality on the development of society because people respond by increasing their investment in education. However, the increased weight of education in wage determination also enlarges the level of urban-rural inequality because opportunities to access education and the quality of education vary greatly across regions. In addition, the sizes of family and health have influences on wage determination. Studies also show that previously non-determinant factors such as gender (Li and Gustafsson, 2008; Yeuh, 2006) and ethnic minority (Yue et al., 2008) status now have an effect on wage differentials.

### **Foreign Direct Investment**

The growth of foreign trade and foreign investment activities accelerated the economic growth of China. Not only did these activities create a myriad of export-led non-state enterprises, but they also created millions of job opportunities to accommodate these labor-intensive industries, particularly for the coastal urbanities. However, FDI and foreign trade aggravated the imbalance of regional and urban-rural development in China because of their disproportionate distribution. It was estimated that more than 90% of the FDI flowed to less than 15% of the Chinese territory. However, inflow of FDI has narrowed the gap among eastern regions, especially the urban-rural inequality (Gustafsson and Li, 2008; Xiong, 2007). This can be explained by the trickling down effect of economic development.

The government has taken measures to increase infrastructure in the less-developed inland rural areas, the most notable of which is the Western Development Project launched in 2000. Government also enacted incentive

policies in recent years to attract FDIs in China's vast rural areas. It is expected that FDI will gradually trickle down to the rural areas because of the improved rural infrastructure, abundant raw material resources, favorable policies and lower costs of labor.

### **Urban-biased Policies**

China's economic transformation was spearheaded by privatization in the rural sector. However, subsequent reforms focused mainly on urban areas and neglected the development of rural areas until recently. Urban-biased policies in reforms and urban-focused subsidies in the welfare system widened the urban-rural inequality since the 1980s.

The urban housing reform in the mid-1990s enlarged China's urban-rural gap. Prior to the reform, urban residents paid a negligible amount to rent the housing provided by the government while rural residents were responsible for their own housing. Due to maintenance burdens and loss from low rents, the government privatized urban housing in 1995. Urban residents were able to purchase their apartments at a much-lower-than-market price. Shares of urban owner-occupied real estate rose from 10% to 75% from the 1980s to 2000 (Davis and Wang, 2009). Later, the booming real estate market in urban areas considerably added to the wealth of urban residents while it had little or no effect on that of rural residents whose land remained largely collectively-owned. Due to increased wealth, urban residents had a greater opportunity to accumulate new financial assets than their rural counterparts (Gustafsson et al., 2008). The housing reform also increased the intra-urban inequality.

### **Welfare System**

The Chinese government has introduced many rural policies since 2004 to narrow the urban-rural gap. However, inequality persists in the welfare system, especially in healthcare, education and social security systems.

Education disparity has received the most attention in the literature because of its crucial effect on future income differentials and development (Qian and Smyth, 2008; Knight and Song, 2008; Gustafsson and Li, 2008). In 2007, the central government started to eliminate tuition fees in rural areas and provide subsidies for eligible students. Full coverage of rural compulsory education narrowed the gap of urban-rural educational accessibility. However, the staggering disparities in the quality of education have yet to be dealt with. Rural schools lag behind urban ones in terms of qualification of teachers, conditions of schools and per student budgetary education funds (See China Human Development Report 07/08, p.74). Inequity in the access to college education is also a pronounced phenomenon that exists between the rural and

urban regions.

Healthcare reflects a higher level of urban-rural inequality than education because of the inequality in access to basic medication. The percentage of villages with health clinics declined until 2005 while urban medical care improved in quantity and quality. About 60 percent of total governmental spending on health flowed to the urban areas while only 40 percent reached the rural areas (Huang, 2003). Equipment demonstrates urban-rural disparity in healthcare as well. In 2006, 88 percent of the equipment of urban hospitals was valued above 1 million RMB while that for rural hospitals was less than 12 percent of that amount (China Human Development Report). In 2006, the urban-rural healthcare expenditure ratio reached 2.59 (NBS). The gap of life expectancy at birth is also an indicator of China's inequality in healthcare. Although the overall national longevity increased from 67.9 in 1981 to 72.4 in 2007, the development was uneven. Counties with the highest level of longevity reached 80.8 years, while that of the lowest counties was only 46.0 years (Wang and Davis, 2009).

Differentials in the social security system, which includes old-age pension, medical insurance and minimum allowance programs, also underlies urban-rural inequality in China. For example, the urban minimum allowance system started in the urban areas as early as the 1990s while it did not start in the rural areas until 2007 as a part of the rural development policies.

### **Household Registration System**

The Chinese government implemented the household registration system in the 1950s as a central mechanism to control urban-rural migration. In this system, residents fall into two categories according to their place of birth: urban residents or rural residents. This rigid urban-rural dichotomy has long been regarded as a major hurdle to China's progress to equality (Zhu, 2007). It grants urban residents more privileges in subsidies of housing, education, healthcare and pensions while rural residents live with little or no benefits, especially after the removal of the collective commune system in late 1970s that once acted as a major supplier of welfare of rural residents. Since China's economic transformation, the household registration system has attracted new attention as a primary source of urban-rural inequality (Xie, 2000; Yang and Xi, 2002; Zhu, 2007). Statistically, nominal urban-rural inequality increased from 2.36:1 to 3.33:1 from 1978 to 2006. The urban and rural areas have evolved in separate trajectories of development with different administration and measurement of development. This urban-rural difference is testified by the two-tier urban-rural statistical approach of National Bureau of Statistics of China in conducting income surveys. In rural-to-urban migrations, the

household registration system also acts as a disequalizing factor. Due to the rural residential status, migrants can only obtain temporary residential permission in urban areas. The rural status also restricts their rights in urban education, healthcare, and pensions. Rural migrants are economically discriminated and socially excluded in the urban areas. In smaller cities, government has created opportunities for rural migrants to enjoy urban resident benefits; however, the urban-rural status dichotomy remained rigid in more developed coastal cities.

The central government has made recent progress in promoting rural growth. It enacted a series of agriculture and rural stimulus policies in education, tax termination and infrastructures. The compliance and effectiveness of these policies in narrowing the urban-rural gap remains to be examined.

## **2. Data and Definitions**

Inequality between urban and rural areas in China exists in a various aspects of society such as those discussed above. Using the quantitative approach, income inequality is the most clear and direct reflector of the trend of inequality during an extended period of time. This paper analyzes income data of urban and rural residents, with a focus on the period from 2002 to 2008. The data used in this study comes from China's Statistical Yearbook provided by the National Bureau of Statistics of China. These data consists of the results of sample surveys, national census and government reports. It is the most extensive and comprehensive data resource in China. The measurements of development of rural and urban areas are conducted separately.

Several studies have pointed out the limitations of the NBS database, such as incomplete coverage of social benefits, exclusion of imputed rental value of owner-occupied housing, etc (Gao and Riskin, 2009). The China Household Income Project (CHIP) data prepared by the China Academy of Social Science is another alternative. However, it is rather difficult to estimate the rental values of owner-occupied housing. Rental value data in CHIP are largely generated by estimations of owners of the housing, which invariably entitles subjective inaccuracies and a lack of unified standards. Other alleged advantages of CHIP include inclusion of urban social benefits such as government subsidies on food ration stamps. Since the food stamp program has been phased out in the 2000s, the influence of such data is negligible in more recent studies. Moreover, the latest CHIP data was from 2002, which is rather dated compared with the data available in NBS. Despite the many drawbacks of the NBS data, the Statistical Yearbook is the most comprehensive and current database with a relatively high reliability.

Therefore, I will use the NBS data in this study.

To compare the degree of real economic wellbeing of urban and rural households, I use the data of annual income, annual disposable income and occasionally, consumption cost. Incomes are adjusted to price level of 1978 using the CPI index to generate and compare growth rates or income levels during an extended period. To analyze urban-rural inequality, I compare the urban annual disposable income and rural net income because they reflect the real economic wellbeing of urban and rural households after tax. Some literature suggests that annual consumption data between rural and urban residents are better indicators of the gap since they reflect the material wellbeing of residents. However, consumption data is highly subjective and has inaccuracies that vary according to the specific samples selected. It also ignores the unspent income of urban and rural residents, which may underlie income gaps as well. It needs to be pointed out that statistics tend to underestimate the economic wellbeing and income of rural residents because many rural residents are also the major consumer of the agricultural goods that they produced. Due to the difficulty in estimation of these values, few data include value of producer-consumed goods in the rural income.

All income data used in this paper is presented in the per capita fashion according to the NBS.

### 3. Inequality Development, 2002-2008

During the period from 2002 to 2008, the economy grew at a high speed. Real income of the data period increased more than 1.5 times for both rural and urban residents as shown in Table 1.

Table 1. Per Capita Real Annual Income of Urban and Rural Households in 1978 Prices (RMB)

	Urban	Rural
2002	1621.30	785.41
2003	1767.25	818.93
2004	1902.58	874.97
2005	2085.67	948.95
2006	2303.07	1030.45
2007	2583.55	1128.47
2008	2800.50	1218.48

In particular, the annual real income growth rate for rural residents grew steadily from 4.27% in 2002 to more than 8% in 2006 and 2007 (See Figure 1 and 2). This increased speed of rural income growth may suggest that the

government rural development policies during the past few years have started to take effect. On the other hand, urban income still grew at a higher speed. This suggests that the real income gap between urban and rural households widened from 2002 to 2008.

Income growth rates calculated from annual income and annual disposable income reflect similar paths of growth throughout the years of analysis (See Figure 1. and Figure 2.).

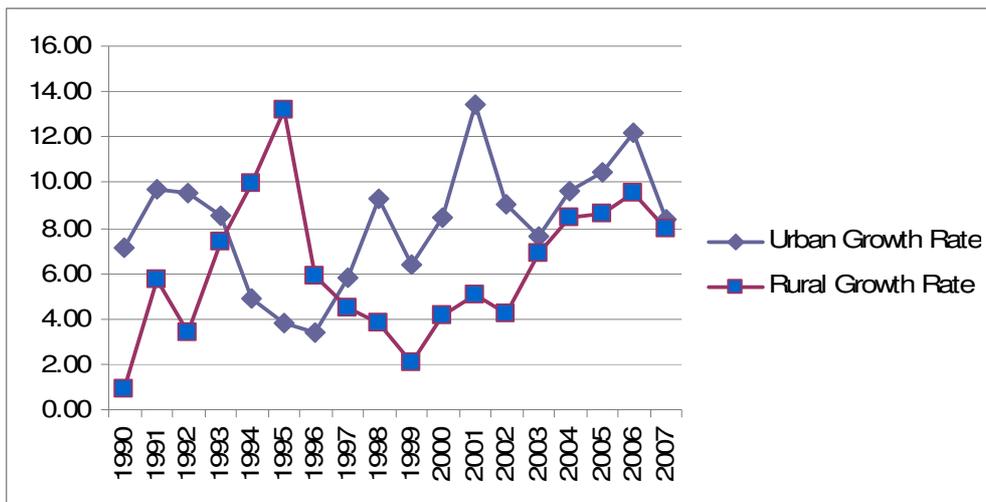


Figure 1. Real growth rate of urban and rural annual income

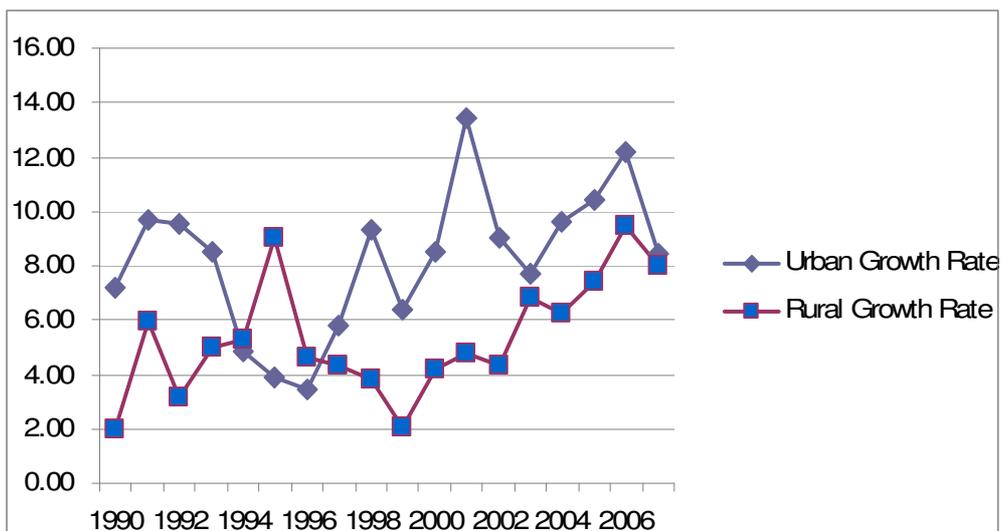


Figure 2. Real Growth Rate of urban annual disposable income and rural net income

However, the trend of the Gini index between differs between urban and rural areas during the same period (See Figure 3. and Figure 4.). From 2003 to 2007, the urban annual disposable income and rural annual net income, which are the annual incomes after-tax, demonstrate a higher level of Gini coefficient than the annual income in the rural areas. This indicates the negative effect of income taxes on intra-rural income gaps because income inequality in rural areas higher after tax. On the other hand, tax on urban residents has a small but positive influence because urban income reflects more equality after tax.

We can conclude from Figure 4 that the intra-urban income gap remains smaller than the intra-rural income gap in both annual income and the annual disposable income. This is consistent with the findings of data prior to 2002 (Gustafsson and Li, 2008). These findings suggest that tax reforms in rural areas need to be carried out more speedily and thoroughly.

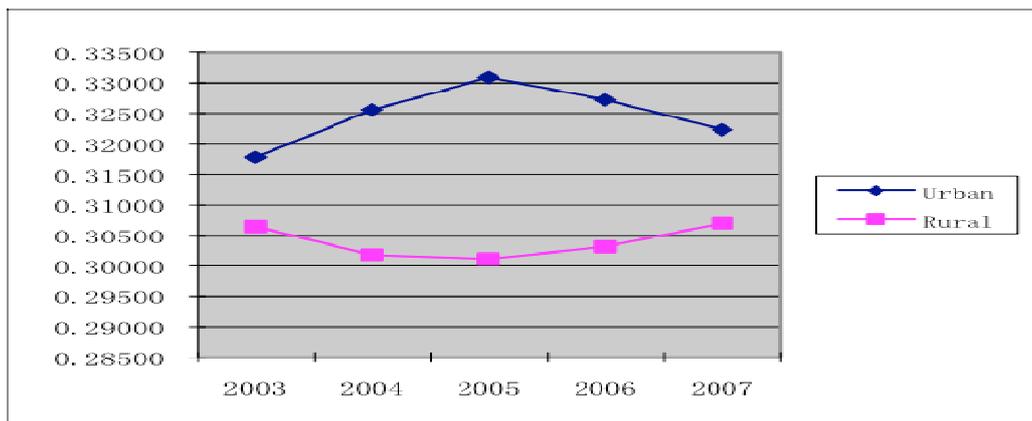


Figure 3. Gini Index of Urban and Rural Annual Income, 2003-2007

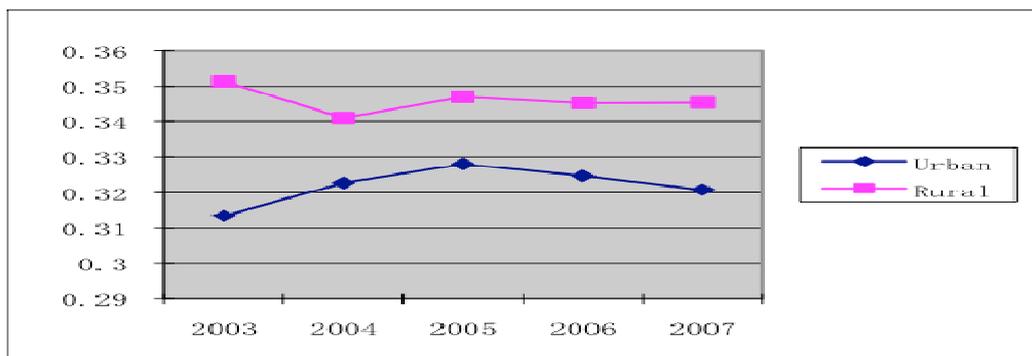


Figure 4. Gini Index of Urban and Rural Annual Disposable Income, 2003-2007

### Urban Inequality

The Gini Index results of urban income inequality during the data period (2002-2007) reflect a decreasing trend with a shape that demonstrates an inverse U curve. In the inverse U-shaped urban Gini Index figures (Figure 3 and Figure 4), urban inequality first increased from 2002 until it reached a peak in 2005. After 2005, the gap has decreased steadily.

Examination of annual urban income growths rate between income level groups helps to explain this trend in urban inequality. From 2006 to 2007, the deciles with highest income in urban areas enjoyed the highest annual growth in income while the lowest income group had the smallest rate of growth from 2002 to 2003. This means that the gap between the richest and the poorest in urban China further widened. However, the situation almost reversed from 2006 to 2007. During this period, the poorest decile had not only caught up with the richer groups in income growth rate, but it also had the highest growth rates while the richest group had the smallest income growth rate. This translates into decreasing income inequality in the urban areas. The Kuznets model of inequality and development can explain this decreased inequality within the urban areas in recent years. Inequality first increases due to specialization and shifting of resources from development and later decreases because of the trickling-down effects of economic growth. The shape of Kuznets curve also coincides with that of the urban Gini curve of income. Whether urban China has passed the increasing part of the Kuznets inverse U-curve needs confirmation from future data. Nevertheless, it is reasonable to assume from the achievements of urban economic development that the equalizing process has started.

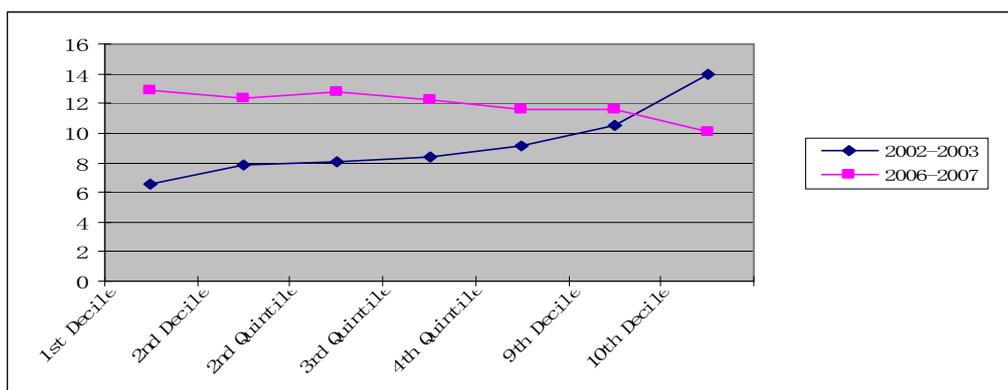


Figure 5. Annual Urban Disposable Income Growth Rate by Income Levels in 1978 Price (2002-2003; 2006-2007)

### Rural Inequality

The Gini Index of rural inequality development remained relatively stable compared with that of the urban areas. Because there are small fluctuations that vary each year, the trend is hard to determine from analysis of Gini Index alone. Growth rates between income level groups sheds some light on the evolvement of rural income inequality. In Figure 6, the group with higher income had the higher rate of growth while groups with lower income had lower rate of growth. From 2002 to 2003, growth rate was negative for the poorest rural quintile compared with a more than 6% growth of the highest rural income quintile. This translates into increased rural income inequality. The situation changed from 2006 to 2007. During this period, the highest income group still had a higher income growth rate than the poorest income group. However, the lower-middle income quintiles started to catch up with the highest growth rates of more than 10% annually (Figure 6). The growth rates of all the income quintiles became more average as well. The growth rates ranged from 8% to 9.6% from 2006 to 2007 compared with -0.6% to 6% from 2002 to 2003. The rural income gap is still in the rising part of inverse U-shaped Kuznets curve. Nonetheless, analysis reveals that the lower-middle income group has started the catching up process. Inequality in rural income increased at a slower speed from 2006 to 2007 than it did from 2002 to 2003. If the rural economy continues its rapid growth, the poorer income groups in rural areas may eventually catch up and surpass the richer income groups in annual growth rate, like their urban counterparts.

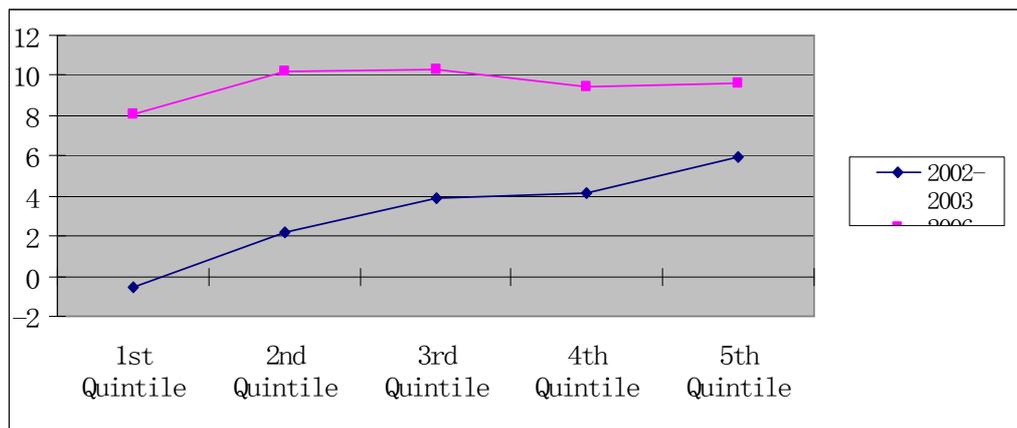


Figure 6. Annual Rural Net Income Growth Rate by Income Levels in 1978 Price (2002-2003; 2006-2007)

### Urban-Rural Inequality

Between 2002 and 2008, the urban-rural real income gap increased from 2.06 to 2.30. Analysis of urban-rural income growth suggests that this gap will

further increase in the near future.

Figure 1 and Figure 2 both show that the annual growth rate of urban real income remained higher than that of the rural income, though rural growth rates have started to grow closer to urban growth rate since 2005. From 2002 to 2003, the income group with highest annual growth rate in rural areas experienced a growth rate of 6%. During the same period, the income group with the lowest level of growth rate in urban areas increased its income by 6.6%. Urban income grew at a much higher speed than rural income for all income group levels. In the later data period from 2006 to 2007, rural income growth rates increased. However, rural income growth rate still lags behind that of urban areas for each income group, but the gap it has decreased.

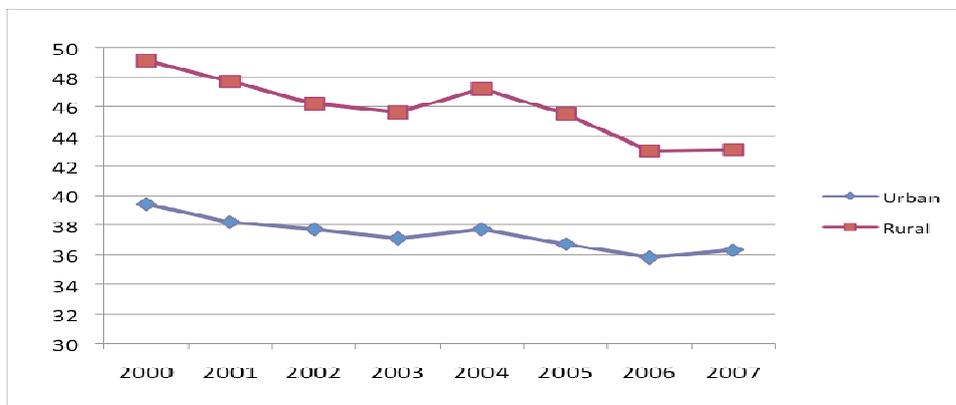


Figure 7. Engle Index of Urban and Rural Households Per Capita Annual Income

Because of the relatively lower living costs in rural areas, real income may still exaggerate the real disparities between urban and rural residents. The Engle Index may give some insights in comparing the economic wellbeing between urban and rural residents. The Engle Index measures the proportion of income consumed in food and nutrients to measure the economic wellbeing of individuals and households. Higher Engle Index indicates worse economic wellbeing. As we can observe from Figure 7, the Engle gap between urban and rural residents has decreased since 2004. Food consumption in both urban and rural areas has occupied a smaller share of the income pie, however, that of the rural areas decreased at a faster speed than in urban areas. The rural to urban ratio of Engle Index dropped from 1.25 in 2004 to 1.19 in 2007. It needs to be noted that Engle Index ignores the qualitative side of food consumption. Urban residents on average have more choices of food. They are also likely to be better off than their rural counterparts in terms of nutrition intake and a more diversified diet. Also, the Engle Index of rural residents may not capture the real value of food consumption. Many of the rural households consume

part of their agriculture product, this is especially common in the more lagged behind rural areas. Since the amount of producer-consumed food consumption is not taken account into the Engle calculation, the Engle Index may not provide the most accurate indicator of rural wellbeing as well.

#### **4. Rural-to-Urban Migration and Urban-Rural Inequality**

Rural-to-urban migration (Rural Migration) is an economic phenomenon of increasing importance in post-transformation China. This migration pertains to rural residents with registered rural household status who migrate to other areas, predominantly urban areas for better economic opportunities on a temporary or a more permanent basis. Based on official data, there were 15 million rural migrants in 1990. By 2003, the number increased to 98 million. Latest statistics indicate that the number has further increased to 225.42 million by the end of 2008. This growing rural labor force injected abundant productive vitality into the urban areas, in addition to facilitating the rapid urbanization of China. Rural-to-urban migration has led to changes in urban-rural inequality around the world in international development (Chiswick, 2005; de Vletter, 2007). Literature on China's rural-to-urban migration is abundant. Most of these studies focused on determinants of migration (Li and Zahniser, 2002; Chen, 2006) and inequalities and restrictions faced by migrants due to their rural household registration status (Whalley and Zhang, 2004). Discussions on the impact of migration on development of China's urban-rural inequality are not only scattered and scarce but there is also a lack of nation-wide empirical quantification important for policy evaluations and policy implications. The next section will summarize the extant discussion with a multi-faceted approach and give suggestions for future empirical studies.

#### **Rural**

Rural-to-urban migration influences China's urban-rural inequality in a number of ways. Remittance from rural migrants has the redistributive effect of increasing rural income and reducing rural poverty (Zhu and Luo, 2008). Influences of remittance on rural inequality are hard to determine unless specific data is given though remittance does increase inequality between rural households with migrants and rural households without migrants. Empirical studies based on household data needs to note that remittance cannot be treated as simple additions to household income because migrants would earn income counted as rural household income had they not migrated. An analysis on effects of remittance on rural household should take into account the possible contribution of migrants and compare the imputed result with the

after-remittance rural household data before coming to conclusion.

### **Urban**

Migration has a more tangible effects on urban inequality compared with its effects on rural inequality. Migrants face institutional and economic inequality in the urban areas.

The presence of the household registration limits migrants' access to education, healthcare subsidies and other welfare benefits their urban counterparts enjoy. Rural migrants can only live in urban areas by obtaining permission to live in urban areas which requires securing a job in the urban areas. Faced with these barriers, migrations are usually on a temporary or nomadic basis that lasts until the urban residence permission is expired. Even though there are many inequalities and inconvenience facing rural migrants, the number of migrants continues to increase. Studies show that migrants are attracted to China's urban areas because urban jobs provide better labor compensations than rural jobs and marginal return to rural productivity (Li and Zahniser, 2002). Household registration system creates the segmented rural and urban labor market. By supporting barriers to migrate as mentioned above, it also supports the differentials of return to labor between urban and rural areas. Local government typically requires companies to employ workers with local household registration status. Because of the inequality in urban and rural education, most rural migrants also have less education than their urban counterparts.

Hence, migrants are placed in an unfavorable employment hierarchy and usually assume lower-paid and more dangerous jobs that their urban counterparts are not willing to do. It is thus reasonable to conclude that migration increases urban inequality. Findings from the China Household Income Project also support this conclusion (Liu, 2004; Whalley and Zhang, 2004; Li and Zahniser, 2002).

### **Urban-Rural**

Migration is said to be a major equalizing factor in urban-rural economic inequality development (Gustafsson et al., 2008). Migration relieves the rural areas of surplus labor, thereby increasing the productivity of the workers that remain in rural areas. Remittances to rural households increase rural income and reduce rural poverty. Migration also helps to speed up China's urbanization. With an increased economic pie and pertinent rural-focused policies from the central government, it is reasonable to assume that migration will also contribute to the trickling down effect of economic benefit.

### **Migration and Household Registration System**

Because of these positive externalities of migration, many cities in China have lifted certain barriers of migration. Some started to provide urban registration status to qualified migrants to attract more migration for future development (Liu, 2004). More reforms in the household registration system are yet on the way (Chan and Buckingham, 2008). Despite many criticisms of the system and its barrier to migration and possible mitigation of China's widening urban-rural gap, this system is unlikely to be abolished immediately based on the reasons below.

First, the household registration system has functioned as a way of controlling migration in China since its initial implementation in the 1950s. This urban-rural separation was implemented because of the need to differentiate in subsidies and planning between the two areas. The urban-biased policies and urban-biased subsidies has been eroded gradually in recent years, however, some of such welfare policies which requires heavy government funding still remains. For example, old wage pension and health care insurance was only recently experimented in some rural areas compared with a much higher coverage in urban areas. Government does not have the ability to afford coverage of social security system in rural areas.

Second, immediate removal of the household registration system will invariably cause an even more overwhelming number of rural migrants to China's urban areas because of the urban-rural wage differentials. However, existing infrastructure, housing and employment opportunities in China's urban areas may not possibly accommodate migrants. International experiences has shown that the large number of migrants and lagged-behind infrastructure and employment opportunities produces slums in large cities including Bombay, Lagos and Karachi. While gradually lifting the migration barriers accompanied with increased investment in urban infrastructure benefits the economy, immediate removal harms such prospects.

### **Conclusion**

This paper provides an approach that combined the institutional and quantitative methods in analyzing the urban-rural inequality with a data focus from 2002 to 2008. For non-income inequality, I summarized the major reforms in China's economy since the late 1970s and their implications on China's urban-rural inequality. For income inequality, I find that from 2002 to 2008, the urban income gap decreased, with the poorest income groups leading the income growth rate which indicate that the urban areas in China may have reached the downward part of Kuznets' inverse U-curve. The rural income gap further widened from 2002 to 2008, however, the middle income group after

2005 showed signs of catching up. The overall urban-rural income gap continues to widen. It needs to be noted that rural economic well-being maybe heavily underestimated because many households consume the agriculture goods they produce. I also summarized and discussed impacts of migration, an increasingly prominent phenomenon, on urban-rural inequality.

In future research concerning income inequality in China, a number of topics are of pressing urgency. Income inequality and inequality in life opportunities in occupational status, ethnicity status, and gender have become more pronounced but are less researched. Inequality analysis in occupational status will shed some light on the identification of winners and losers during the reform. Analysis of inequality based on ethnicity is relevant because recent riots in the border areas in China which have deep and underlying roots in income inequality and economic opportunities. Studies in this issue are more pertinent if taken in a specific province with ethnic autonomy. Analysis of income inequality based on gender is important because gender has emerged in recent years as an increasingly important determinant of incomes and wages. There is also a lack of empirical studies that quantify the impacts of migration on China's urban-rural inequality, given its utility in policy evaluations and implications.

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