Urban-Rural Inequality, Flexible Labor Market, and Growth
in Chinese Thirty-Year Economic Reform

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Abstract

The thirty years economic reform has brought tremendous change to China. A significant change is the increase in flexibility of labor market. Meanwhile, the changes are also found in employment structure, investment, and international trade. The observable consequence is a fast growth both in GDP and urban-rural income inequality. Are these phenomena related? This paper investigates the relationship of urban-rural income inequality to these variables, using a panel data of 31 provinces from 1980 to 2007. The results indicate that urban-rural income inequality relates negatively to GDP growth and fixed asset investment. However, the relationships of urban-rural inequality to urban employment and international trade depend on their levels. At low level, increases in urban employment and international trade lead to a reduction of inequality, while this relationship reverses when urban employment and international trade increase up to a certain point. These results suggest that income inequality can be moderated by careful policy arrangements.
I. INTRODUCTION

Concern about the disparity of living standard has not diminished since the Chinese economic reform that started at the end of the 1970s. Indeed the economic reform has resulted in tremendous economic growth. However, the inequality has been a major consideration for whether the reform should had been accepted at the beginning. The reform aimed to put the economic efficiency in priority but it was hatched in a society believing that the equality of wealth distribution should be in priority. The advocates had to convince the society with a promise to improve the living standard of part of the population as the first step and then the others as the second. This means a certain extent of inequality is acceptable. However, as 30 years passed, the inequality is still in the trend of increasing although the reform has successfully relieved millions of population of absolute-poverty distress. It is not sure how long the first step will take. Certainly, understanding the causes of inequality will help in turning down the inequality.

Income inequality is closely related to economic convergence in literatures. Solow (1956) provides a basic model to analyze economic convergence. The model predicts a faster growth of the low income regions. The Solow model is supported by the results of empirical researches. Barro and Sala-I-Martin (1991) found evidences that support the existence of convergence among States in USA. Their estimation of the convergence speed is about 2 percent. In China, Cai, Wang and Du (2002) found that per capita GDP in the initiative year is negatively related to growth rates in following years. However, empirical findings do not always agree with the Solow model. Fujita and Hu (2001) studied the growth of GDP per capita across provinces in China. They reported that there was a trend of convergence among
provinces but a disparity between coastal regions and inland regions over the period of 1958-1994. The inconsistent empirical results stirred up criticisms on the exogenous assumption of the Solow model. Using the endogenous innovation growth model, Wei et al. (2001) provided the evidence of convergence controlling for the R&D expenditure and openness across China provinces in the period of 1986-1995. The causes of convergence were investigated by Ravallion and Jalan (1996). They suggest that spatial externalities are the causes of the regional aggregate divergence. They also reported a convergence existing in county-level. They attributed the disparity to the effect of globalization and the economic liberalization. While the empirical evidences support both convergence and divergence, the evidences supporting inequality seem to dominate literatures.

The important investigation on income inequality was done by Kuznets (1955). His hypothesis that income inequality has an inverted-U shape curve serves as a basic model for later researches. The inequality increases as the labors transfer to urban areas and decrease as the share of population migrating to urban areas increases because the income in urban areas is more equal in distribution. According the Kuznets model, income inequality in China should be on the way up in the early period of economic reform. Khan and Riskin (1998) investigated the inequality in China, using household survey data. They found the inequality increased rapidly during 1988-1995 and urban-rural disparity is the major contributor to the overall inequality. The increase of income inequality is also reported in rural China by Benjamin, Brandt and Giles (2005). They studied the rural income inequality with a survey data of 8000 households over the periods of 1986-1999. Their results indicate a long run increase in inequality and the bottom five percent of the rural population was worse-off. However, the
research of Kanbur and Zhang (1999) reveals the urban-rural inequality was much higher but grew slower than the inland-coastal inequality. When some researchers focus on the trend of income inequality, other researches pay attention to the cause of income inequality.

Factors found to relate to income inequality include location, investment, employment, and economic growth in literatures. The urban-rural and spatial inequality is found to be the major factors for the inequality in China in Yao’s (1999) research. Similarly, Sicular et al (2007) present that the resident location is the most important factors for urban-rural income disparity in China, using household survey data from 1995 to 2002. The export-oriented FDI was reported to increase income inequality by raising the wages in the unskilled-worker-relied industries in Owen’s (2007) research. Kung and Lee (2001) found the off-farm employment increases both income and income inequality simultaneously in a survey dataset of four counties in Hunan and Sichuan Provinces in 1993. Lin, Wang, and Zhao (2004) show the response of labor migration to the regional income inequality is statistically significant in 1995-2000 but insignificant in 1985-1995. Chen and Guo (2005) suggest the relationship between inequality and economic growth can be zero, positive or negative. Lu (2002) found the Kuznets relationship of economic growth and inequality exists in the urban-rural consumption. On consequence of inequality, Ravallion and Chen (2007) demonstrate that provinces with higher inequality have lower progress in poverty reduction in China. They attribute the slow perform in poverty reduction to the slow economic growth and the smaller elasticity of poverty reduction to economic growth.

The existing literatures have made a great contribution in understanding the income inequality in China. However, the majority of the researches are based on household survey
data. The time span of the data does not cover the whole period of Chinese economic reform. This paper aims to investigate the relationship of urban-rural income inequality to economic growth, urban employment, fixed asset investment and international trade with a panel data spanned over all 31 provinces from 1980 to 2007. The results show that income inequality can be reduced by appropriate policies.

The rest of the paper will be expanded by providing a descriptive analysis of the labor mobility and urban-rural inequality resulted from the Chinese economic reform in next section. In section III, the model for estimation will be presented. Then, the data and estimated results will be discussed in section IV. The conclusion will be made in the last section.
II. THE ECONOMIC REFORM, LABOR MOBILITY, AND INEQUALITY IN CHINA

The economic reform in rural China is symbolized by disbandment of collective production system in the early 1980’s although the idea of economic reform was proposed at the end of the 1970s. The fundamental step was to assign collectively owned farmland to individual households. In the collective production system, rural laborers worked for a production team, which was comprised of 10 to 50 households. The laborers worked to earn labor credits that were transferred into income in the form of products or money by the end of the year. The products such as grains were either distributed to all households in the production team based on population or sold to the state owned or collectively owned enterprises in the state standard prices. Part of the cash income was paid for farming inputs such as fertilizers and farming tools. The total profit for the production team was the sum of the net cash income and monetary income of the products counting in the state standard prices. This net profit was the labor income and shared by all the labors according to labor credits earned. Because the products and the labor income are distributed on different bases, population and the labor credits, the product account and the labor income account may not balance. The household with more labors may have a surplus and then earn cash income at the end of the year; the households with more non-labor members may have deficit and had to pay cash. Meanwhile, working for his or her team is almost the only way to support the family because no production teams would share their products and award labor credits to outsiders. At the same time, working for the off-farm is also considered illegal. Therefore, labors had to rely on their own production teams and cannot move to other places. The income to each laborer was relatively equal. The rural reform assigned the land to individual households and released the labors from
the production teams.

Before the economic reform, rural labors were rarely employed in urban regions. At the beginning of the economic reform, employed off farm without permits were illegal. However, illegal employment existed because of the demand for labor in urban areas. As the demand for labors increase along with the practice of open policy, government accepted the labor mobility as a measure to improve the living standard of rural population. The result of the labor mobility changes the structure of employment in urban and rural areas. The evolution of the labor share employed in urban and rural is illustrated in Figure 1. The trend of urban employment is up and the rural employment down. Figure 2 shows the distribution of source of cross-province out-migrant in 1995. The labors from the provinces in the middle are more likely to find off-farm jobs. Three provinces, namely Sichuan, Henan, and Anhui, are the major sources of out-migrants. Each have about 1.65-6 millions labors found off-farm job outside their provinces. Their destinations are indicated in Figure 3. The coastal provinces provide major destination for the cross-province migration. These provinces are also the major destination for foreign investment and the production bases for export, where both the opportunity and wage are higher.
The change of employment structure leads to the change in income source structures. The share of wages in rural income has increased after economic reform. The four major sources for rural income are depicted in Figure 4 from 1995 to 2007. After ten years economic reform, over seventy percent of rural income still relied on household farming. The wage
income was the second large source of rural income. By 2007, the farming income declines to slightly over a half of total income while wage income account for about 40 percent of rural income. The other two sources of income—rent and transfer incomes are relatively stable. However, the increase in wage earnings does not necessarily result in the reduction in urban-rural income inequality.

![Graph of Shares of Rural Income Sources](image)

**Figure 4** Graph of Shares of Rural Income Sources

The reason for the existence of urban-rural inequality is that the economic reform did not impact individuals evenly. First, no reform can provide the same opportunity for all labors from the very beginning. The laborers fail to find off-farm job and continue relying on farming. The lack of resources such as farmland, capital and market for products keeps remaining laborers as surplus labor forces in rural areas. The incomes of these laborers do not increase with the economic growth. Second, the rural laborers employed in urban areas are the more productive. The remaining rural laborers are usually the unskilled and the elderly. Finally, the rural labors usually engage in low-skill jobs, such as construction and manufacture. The wages
for these jobs are low. Of course, the inequality is caused by other factors. This paper is also interested in investigating the relationships of inequality to policy related variables such as fixed asset investment, government spending, education, international trade.
III. MODEL

The model for this research takes the normal assumption in economics. The maximization of utility by households can be derived through decisions on consumption. The equivalent problem of utility maximization is to maximize income in a complete competitive market economy. For the rural laborers, who can engage in both farming and off-farm jobs, the existence of a large amount of surplus labors implies that participation in labor market is the major way to increase income and utility. Thus, the rural income depends on profit in farming and the wage offered by firms. The marginal profit to labor should equal to the wage. On the other hand, urban laborers only depended on wages. The major difference between the urban and rural labor in wages should be resulted from the difference in productivity.

Model for the wage difference take the form of constant elasticity of substitution (CES). Firms maximize profits and pay wage on the marginal products of labors. The production function:

\[ Y = \left( \left( A_r L_r \right)^{\frac{\theta-1}{\sigma}} + \left( A_u L_u \right)^{\frac{\theta-1}{\sigma}} \right)^{\frac{\sigma}{\theta-1}} \]

Where, \( Y \) is the output. \( A \) presents the technology. \( L \) is the labor. \( r \) and \( u \) denote the rural and urban sections. \( \theta \) is the elasticity. The Lagrangian function for the profit maximization is

\[ L = \left( \left( A_r L_r \right)^{\frac{\theta-1}{\sigma}} + \left( A_u L_u \right)^{\frac{\theta-1}{\sigma}} \right)^{\frac{\sigma}{\theta-1}} - w_r L_r - w_u L_u \]

Where, \( w \) is wages. The wage or income for the urban and rural labors can be derived by solving equation (2)
From equation (5) and (6), the difference of income or wage between urban and rural labor can be expressed as

\[
\frac{w_u}{w_r} = \left( \frac{A_u}{A_r} \right)^{\frac{\theta - 1}{\theta}} \left( \frac{L_u}{L_r} \right)^{-\frac{1}{\theta}}
\]

Taking the logarithm of equation (7), we obtain an equation for empirical estimation of the urban-rural income inequality.

\[
\ln\left( \frac{w_u}{w_r} \right) = a_0 \ln\left( \frac{A_u}{A_r} \right) + a_1 \ln\left( \frac{L_u}{L_r} \right) + a_2 \ln(X) + e
\]

Where, \( a \) is the parameters. \( e \) is the error. \( X \) is a vector of other variables, including economic growth rate, fixed asset investment, government spending, immigration, education and dummy variables for location and time. \( \ln\left( \frac{w_u}{w_r} \right) \) denotes the urban-rural income gap.

The equation (8) is estimated with a panel data across 31 provinces of China from 1980 to 2007. The estimated results will be discussed in next section.
IV. DATA AND EMPIRICAL RESULTS

1. Data

The panel dataset is obtained from the Statistical Yearbook issued by the Department of National Statistic Bureau of China. The dataset contains variables such as ratios of urban-rural income per capita, urban-rural employment ratios, total value of import and export per capita, government expenditure per capita, fixed asset investment per capita, and the ratio of secondary students and primary students in school for each of 31 provinces from 1980 to 2007. Table 1 describes the logs of these variables. The distributions of the major variables are depicted in Figure 5-8. The urban-rural income gap seems to have an opposite distribution as GDP growth. As shown in Figure 5 and 6, the urban-rural income ratio grew faster in middle and western provinces, where the GDP grows slower. The coastal provinces have lower urban-rural income gap growth rate and higher GDP growth rate. Similar patterns are also seen in comparison the Figure 5 to Figure 7 and 8. The middle and western provinces have lower growth rate in urban-rural employment ratio and international trade while the coastal provinces have higher growth rate in these variables. The relationships need further investigation by the regression model.

<table>
<thead>
<tr>
<th>Variables</th>
<th>MEAN</th>
<th>MEDIAN</th>
<th>MIN</th>
<th>MAX</th>
<th>S.D.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Log Urban-Rural Income Ratio</td>
<td>0.8789</td>
<td>0.8686</td>
<td>-0.0245</td>
<td>1.6913</td>
<td>0.2996</td>
</tr>
<tr>
<td>GDP Growth rate</td>
<td>0.0945</td>
<td>0.0821</td>
<td>-0.1190</td>
<td>4.7331</td>
<td>0.2787</td>
</tr>
<tr>
<td>Log of Urban and Rural Employment Ratio</td>
<td>-0.6906</td>
<td>-1.0122</td>
<td>-2.0410</td>
<td>4.8402</td>
<td>0.9979</td>
</tr>
<tr>
<td>Log of Import and Export Value per Capita</td>
<td>3.4571</td>
<td>3.4714</td>
<td>-6.9729</td>
<td>9.6873</td>
<td>2.4741</td>
</tr>
<tr>
<td>Log of Government Expenditure per Capita</td>
<td>5.5134</td>
<td>5.3880</td>
<td>1.7222</td>
<td>9.3709</td>
<td>1.3558</td>
</tr>
<tr>
<td>Log of Fix Asset Investment per Capita</td>
<td>-2.9360</td>
<td>-3.1056</td>
<td>-14.0650</td>
<td>0.8724</td>
<td>1.5072</td>
</tr>
<tr>
<td>Log Ratio of Secondary Students and Primary Students in School</td>
<td>-0.7913</td>
<td>-0.8095</td>
<td>-2.5503</td>
<td>0.4321</td>
<td>0.4310</td>
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</table>
FIGURE 5  Distribution of the Annual Change in Urban-Rural Income Ratio over 1980-2007

FIGURE 6  Distribution of Annual GDP Growth Rate over 1980-2007
2. Empirical Results

The OLS model was estimated include provincial and time dummy variables. The results show the most coefficients of the dummy variables are significant. Testing for the heteroskedasticity finds the TR² value is 187.1. The hypothesis of homoskedasticity is rejected.
The heteroskedasticity needs to be corrected by FGLS model. The R square of FGLS is 0.9246. The results and discussion presented below are based on the results of FGLS model.

Economic growth is usually found to go along with urban-rural disparity. The economic growth may only shift up the living standard of part of the population. However, as shown in table 2, the result of the fixed effect model indicates that the economic growth reduces the urban-rural disparity in China. The coefficient of the GDP growth rate is negative and significant at ten percent level, meaning the urban-rural ratio decreases by about 0.0251 if the GDP grows by one percent. The economic growth benefits the rural population more than the urban population in terms of net income. The economic growth is derived mainly through the increase in employment of rural labor. Many rural labors become off-farm wage earners. Their incomes are raised up to be closer to the urban labors whose incomes basically rely on wages. However, the income difference still exists because the rural labors are more likely to be hired in low-wage jobs. Meanwhile, the mobility of rural laborers may also bring benefits to urban population.

The labor mobility is a phenomenon that occurs with the economic growth in China. The model tries to estimate the impact of labor migration on the urban-rural income inequality. However, the availability of panel data is a problem. Instead, a dummy variable was constructed from the migration data in 1995-1998. The dummy variable presents the net immigration of labor and equals to one if the immigration is greater than out-migration. The values of the dummy variable are consistent over the three-year period. Therefore, it is used as a proxy for migration over 1980-2007. As shown in Figure 2 and 3 above, the provinces with net immigration are the developed coastal provinces, such as Beijing, Tianjin, Liaoning, Jilin,
Shanghai, Zhejiang, Fujian, Guangdong, and Hainan, and the inland provinces with mining industries, as such Shanxi, Yunan, and Xinjiang. As shown in table 2, the coefficient is positive and significant at five percent level. This implies that net immigration benefit local urban population more than the rural population. The immigrants are more likely to find job in urban areas. Although the immigrants may compete down the wage, they also create a surplus for the local economy. Intuitively, the immigrants increase the value of wealth owned by local residents.

The benefit of urban population is indicated in the results of urban-rural employment ratio in table 2. First, the relationship of urban-rural income gap and employment ratio is nonlinear. The coefficient of the linear term is negative and insignificant but the nonlinear term is positive and significant at one percent level. This implies that the impact of urban employment on the urban-rural gap depends on the magnitude of the proportion of labor employed in urban areas. Second, the total impact become positive if the log ratio of urban-rural employment equals 0.15. That is, the urban-rural ratio needs to be greater than 1.16. When over about 54 percent of labors employed in urban areas, the urban population receives more benefit than the rural population. Based on this criterion, we found that the urban-rural employment ratio have positive impact on the income gap of metropolitan cities such as Beijing, Tianjin, and Shanghai over all time periods. The impacts are positive in the provinces such as Liaoning, Heilongjiang, Hunan, Tibet, and Xinjiang before the middle of 1990s. The reason for why these provinces have higher urban-rural employment ratio in different time periods is unclear. All other provinces have negative impact all the time. The results imply that the urban-rural employment ratios favorite the urban population in metropolitan cities and a
part of provinces before 1990s. Most of the urban-rural employment ratios favor rural population therefore the income gaps are declined. The nonlinear relationship between urban-rural income gap and urban-rural employment ratio can be explained by labor competition. When the urban-rural employment ratio is low, the rural laborers find jobs easier. In contrast, rural laborers are week to compete with the already employed laborers to get employed. They continue engaging in farming which grew slower than other sectors such manufacturing, especially for exportation.

Export and import as a proxy for openness also relate to income gap nonlinearly. Both linear and nonlinear terms are significant at one percent level but the linear term is negative and nonlinear term is positive. The impact can be negative and positive. The turn point is $98 total import-and-export value per capita. The provinces with the total import-and-export value below $98, the openness of economy favors the rural population and then reduce the urban-rural income gap. Over $98, the openness of economy benefits urban population more than the rural and increase the urban income gap. This result is consistent with the Stopler and Samuelson (1941) that the liberalizing international trade increases the wage of unskilled labor as an abundant factor in low developed regions but decrease the wage of unskilled labor in developed regions. The regions with low export-and-import value are the underdeveloped west provinces. The rural laborers who are usually unskilled laborers benefit more than the urban laborers. Therefore, the urban-rural income inequality relates to international trade negatively. The provinces of high international trade value are the developed eastern provinces. Therefore, the relationship between the urban-rural income inequality and international trade is positive.

The other two variables relate to the government fiscal policy. Government expenditure is
one of the tools to stimulate economic growth. As shown in table 2, the expenditure of Chinese
government does not impact on urban-rural income gap. The coefficient of log government
expenditure per capita is negative and insignificant. Fixed asset investment is another tool for
economic stimulation used by Chinese Government. Although government is not the only
investor of fixed assets, the government plans usually act as a very important incentive for the
fixed asset investment. In table 2, the fixed asset investment has a negative and nonlinear
relationship to urban-rural income gap. The coefficients of both terms are negative. The more
fixed assets are invested, the larger the urban-rural income gap declines.
<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Coefficients</th>
<th>T-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>0.6775</td>
<td>7.3800 ***</td>
</tr>
<tr>
<td>GDP Growth Rate</td>
<td>-0.0251</td>
<td>-1.6560 *</td>
</tr>
<tr>
<td>Log of Urban and Rural Employment Ratio</td>
<td>-0.0027</td>
<td>-0.3260</td>
</tr>
<tr>
<td>Squared Log of Urban and Rural Employment Ratio</td>
<td>0.0183</td>
<td>3.0880 ***</td>
</tr>
<tr>
<td>Log of Import and Export Value per Capita</td>
<td>-0.0076</td>
<td>-4.7730 ***</td>
</tr>
<tr>
<td>Squared Log of Import and Export Value per Capita</td>
<td>0.0017</td>
<td>4.0150 ***</td>
</tr>
<tr>
<td>Log of Government Expenditure per Capita</td>
<td>-0.0097</td>
<td>-0.9210</td>
</tr>
<tr>
<td>Log of Fix Asset Investment per Capita</td>
<td>-0.0401</td>
<td>-2.3190 **</td>
</tr>
<tr>
<td>Squared Log of Fix Asset Investment per Capita</td>
<td>-0.0036</td>
<td>-2.9010 ***</td>
</tr>
<tr>
<td>Migration Dummy (1 if out-migration is greater than immigration)</td>
<td>0.0655</td>
<td>2.0120 **</td>
</tr>
<tr>
<td>Log Ratio of Secondary Students and Primary Students in School</td>
<td>-0.0187</td>
<td>-0.5530</td>
</tr>
<tr>
<td>Squared Log Ratio of Secondary Students and Primary Students in School</td>
<td>0.0038</td>
<td>0.2220</td>
</tr>
<tr>
<td>Province Dummy (shown in Figure 9)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time Dummy (shown in Figure 10)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>R Squared</td>
<td>0.9246</td>
<td></td>
</tr>
<tr>
<td>Number of observation</td>
<td>867</td>
<td></td>
</tr>
</tbody>
</table>

Note: * presents significance at ten percent level.
** presents significance at five percent level.
*** presents significance at one percent level.

Human capital is an impact factor in income distribution. However, the education, using the ratio of the middle school students and primary school students as a proxy, does not relate to the urban-rural income gap significantly. In Table 2, both linear and nonlinear terms are insignificant. The opposite signs seem to imply that low level of education benefits the rural population while the high level of education associates to urban-rural income gap.

The urban-rural income gap is well explained by the above variables. However, there must be other missing variables. The dummy variables for each province are included in the
model. As shown in Figure 9, location can significantly explain the urban-rural income gap. The interesting result is that the provincial dummy variables divide China into two parts. The eastern provinces have positive coefficients. Comparing to the Xinjiang and Ningxia provinces, the eastern provinces have smaller urban-rural gap. Except Anhui and Hunan provinces, the coefficients of other eastern provinces are significant at one percent level. In contrast, western provinces have positive signs. Except Sichuan province, other provinces have significantly larger urban-rural income gap. By individual province, the urban-rural income gaps are smaller in Shanghai, Beijing, Tianjin, Jiangsu, Jilin, Zhejiang, and Liaoning Province (City). These provinces are all developed and have higher GDP per capita. Tibet have the largest urban-rural income gap.

FIGURE 9 Distribution of the Coefficients of Provincial Dummy Variables

The urban-rural income gaps vary over time. As shown in Figure 10, the coefficients of time dummy variables increase in time. The coefficients are negative and significant before 1985 and then positive and significant after 1989. The magnitudes of the coefficients increase over time. A model is also estimated with time trend in stead of dummy variables. The
The coefficient of the time trend is 0.0221 and significant at one percent level, meaning the urban-rural income inequality increases by about 2.21 percent annually. The causes for the increase of the urban-rural inequality over time are unclear.

![Graph of the Coefficient of Time Dummy Variables](image-url)
V. CONCLUSIONS

The Chinese economic reform that started in 1978 is characterized by faster growth of urban employment, fixed asset investment, and international trade. The institutional changes in the reform are to release the control of labor mobility and trade. The observable result is the tremendous improvement in living standard of population both in urban and rural areas. Meanwhile, the income inequality, especially between urban and rural areas, has been in the trend of widening. The purpose of this paper is to investigate the causes of the urban-rural income inequality.

The urban-rural income inequality was analyzed by a model estimated from a panel data across 31 provinces from 1980 to 2007. The major results indicate economic growth and fixed asset investment are the major factor to decline the urban-rural inequality. Economic growth itself does not contribute to but reduces the urban-rural income gap. Fixed asset investment contributes to the reduction of urban-rural gap. The impact increases with the intension of the fixed asset investment. The off-farm employment and international trade have similar effect. The relationships of urban-rural inequality to off-farm employment and international trade are nonlinear. They improve the rural population more than the urban population when the level of off-farm employment and international trade are low. Above a certain level, they benefit urban population more. The net immigration provides an income surplus to the urban population and increase the urban-rural inequality. Increase in middle school education dose found to have significantly impact on urban-rural inequality.

Except from urban employment, international trade and migration, there are other factors that widen the urban-rural income inequality. The coefficients of time dummy variables are
increasing in times. The urban-rural income inequality also distribute spatially. The western provinces have wider urban-rural income inequality than the eastern provinces. What factors acting behind the time and location remains a topic for further researches.

The above results suggest that urban-rural income inequality can be reduced by economic policies. The stimulus policies of fixed asset investment are the effective tools to decline urban-rural disparity. Fixed asset investment improves the rural population more than the urban. At the same time, it also stimulates economic growth which also benefits rural population more. The off-farm employment and international trade are also a choice for the undeveloped areas but not for the developing regions. It is possible for developing countries to moderate income inequality in the process of development by choosing appropriate policy.
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