RMB Appreciation, Economic Growth and Income Distribution in China and the World

James Xiaohe Zhang and Weiwei Ying

With a significant slowing down in economic growth especially in the growth rate of exports since the beginning of the 2010s when the appreciation of Renminbi (RMB) appreciation accelerates, China also faces a challenge of improving the already deteriorated income distribution. This raises a concern over the issue on how to stimulate domestic demand when export growth rate is slowing down and reduce inequality in income distribution when the RMB has to be appreciated. Based on a simple two sector theoretical framework, this paper examines the relationship between RMB appreciation, economic growth and income distribution in China through running simulation on an applied general equilibrium model (the GTAP model). Conclusions and policy implications are generated based on the simulation results.

Key words: China, RMB appreciation, economic growth, income distribution

1 Introduction

Although there is no consensus being reached on whether and to what extent the Renminbi (RMB) is under-valuated, and how an RMB appreciation could improve global trade imbalances, some commentators (see for instance, Cline and Williamson, 2008, Goldstein and Lardy, 2008, 2009:51, Williamson and Cline, 2010) have recommended that the RMB should appreciate for at least 25% from its 2008 level which is almost approached by early 2013. At the same time, the growth rate of GDP has been significantly reduced to a lower rate of 7.8% in 2012. The Chinese government therefore has considered switching its development strategy from export orientation to focusing more on its domestic market by boosting local consumption created from increasing disposable income of ordinary households.

However, this goal is not an easy task for the new Chinese leaders to reach. When the economic growth is slowing down from its high pace of double digit of the 2000s, the level of inequality deteriorates. As reported by Mukhopadhaya (2013), the Gini coefficient, as a key indicator of total inequality, increased from 0.327 in the early 1980s to 0.508 in 2008 in China. While the rural Gini increased from 0.275 to 0.371, the urban Gini increased from 0.162 to 0.328 over the same period.

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Although income distribution issue in general is concerned in conventional theory of international trade and finance, the empirical studies on the impact of currency appreciation on income distribution is limited. While these two phenomenon have been analysed intensively but separately in the literature (see for example, Fair 2010, Zhang 2012 for RMB appreciation and Secular et al, 2010, Mukhopadhaya et al 2011 on inequality), from the best of our knowledge, no empirical study has linked the two issues together to generate some constructive policy implications. This paper aims to fill the gap. The task is carried out through simulations on an applied general equilibrium model (the GTAP model). This paper contributes to the existing literature by shedding a new light on the issue of how the appreciation of the RMB affects the pattern of income distribution, particularly among owners of different productive factors and sectors not only in China but also in the rest of the world.

This paper is organized as follows. The next section introduces briefly a theoretical framework on the relationship between export growth and income distribution underpinned by some empirical evidences. Section 3 presents the research methodology before the simulation results are reported in Section 4. Concluding remarks and policy implications are generalized in the final section.

2 Literature Review: Theory and Evidences

Conventional international economics reveals that free trade generates welfare gains for all trade partners, but the gains may not be evenly distributed across different sectors and different income recipients in a specific country, particularly in the short run. In international trade theory, the notable Stolper-Samuelson Theorem maintains that an increase in the price of a product increases the income earned by resources that are used intensively in its production, but reduces the income of the resources that it uses less intensively (Stolper and Samuelson, 1941). As a result, some people will suffer from free trade while others gain. Jones (1971) developed this theorem further to reveal a “Magnification Effect” that transfers income among owners of different factors of production in the short run.

According to Specific Factor Model,, if there is a labor intensive urban industrial sector with a specific factor of capital and a mobile factor of labor, and a land intensive agricultural sector with a specific factor of land and a mobile factor of labor, a general equilibrium two-sector and three specific factor model can be established. If we also assume that two goods, namely a manufacturing good using labor and capital (but not land), and an agricultural good using land and labor (but not capital), labor will move between the two sectors until the value of the marginal product of labor in each sector is equal to its wage rate.

This model is described by a beaker-shaped diagram in Figure 1. The two vertical axes indicate the wage rates in the urban manufacturing sector and rural agricultural sector respectively. The total labor force is represented on the horizontal axis. While manufacturing employment is measured from left to right, rural agricultural employment is measured from right to left. Two negatively sloped demand curves for the labor in the two sectors, $D_m$ and $D_f$, are determined by the marginal productivity of the labor employed in the two sectors respectively. The
equilibrium wage rate and employment ($L^e$ and $W^e$ respectively) will be reached when the marginal productivities of labor in the two sectors ($D_m$ and $D_f$) are equalized.\textsuperscript{ii}

In terms of owners of different productive factors that earn income, there are four classes of income earners in the model: namely the owners of capital, urban manufactured labor, rural agricultural labor, and the owners of land. Each group receives an aggregate income of triangle A, rectangular B, rectangular C and triangle D in the figure respectively.

Assuming now that an open door policy will lead to an increased external demand for the manufactured goods which represents the country’s comparative advantage, the demand curve for manufactured goods will be shifted to the right. This is displayed as adding a new demand curve $D_m'$ in Figure 2 which will result in an increase in the nominal wage rate from $W^e$ to $W^e'$, and urban manufacturing employment from $L^e$ to $L^e'$, whereas the rural employment falls by the same amount.

In terms of the change in real income, the owners of capital gain the most from the original triangle A in Figure 1 to an enlarged triangle E in Figure 2. This is followed by the urban manufactured labor and rural agricultural labor when the nominal wage rate is increased. The owners of land, however, become net losers because their income actually falls from triangle D in Figure 1 to contracted triangle G in Figure 2. This welfare change, known as the ‘Magnification Effect’ is well documented (see Jones 1971, 1975, Carbaugh, 2011, among others)

Applying this model into China’s practice, the following propositions can be derived:

1) When an export promotion policy is adapted, the owners of capital, which are more likely to be the state owned enterprises and foreign enterprises gain the most, at the expense of owners of land and rural agricultural labor who are more likely to be the losers.\textsuperscript{iii} The urban manufacturing labor and migrants will also gain when urban manufacturing employment increases.

2) When RMB appreciates, the external demand for manufactured goods is falling because now its price is dearer. As a result, the above process reverses. This is because the appreciation of RMB will reduce external demand for the exportable manufactured goods, and shift the demand curve to the left. As a result, the owners of land are more likely to gain while owners of capital lose.\textsuperscript{iv}

The consequence of RMB appreciation on the return to different factors of production will be more complex when there are more than two specific factors such as natural resources in the model. The final result will depend on how the RMB appreciation affects the final demand for several goods. Although a complete mathematical model could also be development for the purpose of conducting some comparative static analysis, we alternatively choose running simulations in an applied general equilibrium models (CGE) model.
Before a CGE model is chosen, we collected some statistical data from China’s official statistical yearbooks. After organising and analysing the raw materials, we identified the following stylist facts:

Firstly, economic growth rates rate has been extremely high in the last three decades in China, but unbalanced in China. While the average annual growth of GDP, agriculture, manufacture
and service sectors is about 10.5%, 4.5%, 11.6% and 11% respectively, between 1986 and 2011, the growth rates of exports and imports are both at a double digit of 16.8% and 17.2% respectively, which are much higher than the growth of all other sectors.

Secondly, there is a dramatic structural change in the three fundamental sectors of agriculture, manufacture and service over the last three decades. While the share of agricultural sector fell from 25% to about 10%, the shares of manufacturing sector and service sector increased from 43.7% and 38.6% in 1986 to 46.4% and 43.6% in 2011 respectively.

Thirdly, although the income gap between the rural and urban sectors enlarged, the gaps in wage income, after reasonable adjustment, converged over time. When the gap in disposable income enlarged from 2.2 in 1990 to 3.2 in 2010, the gap in wage rate between the two sectors narrowed from more than 8 folds larger in 1990 to about 5.6 folds larger over the last two decades. During the same period, the gap in the return of property income enlarged by 6 folds over the same period.

Fourthly, when the urban employment increases substantially, the rural employment declines persistently in terms of both the number of employees and their shares in total employment. With a continued decline in the numbers of agricultural employment by 20% and a dramatic increase in urban labor force by 35% during the decade of the 2000s, the real wage rate was increased substantially with an annual growth rate of 12.5%, which is higher than the growth rate of GDP of about 10% over the same period.

Finally, despite wage income still accounting for a significant share of total disposable income, other sources of incomes, namely income from household operation, income from properties and income from transfers, enlarged in urban China but contracted in rural China. It is observed that while the share of wage income on total income increased substantially from 20% in 1990 to 41% in 2010 in the rural sector, the same item fell from more than 76% to less than 72% in the urban sector over the same time period. The change of incomes from household operation and properties also moved in opposite directions between the two sectors. While the share of these incomes on total income increased from 2% in 1990 to over 10% in 2010 in the urban sector, it fell from 86% to 70% in the rural sector over the same time period.

Although the liberalizations in China’s markets are still far from perfect, the pattern of income distribution has changed dramatically. The evidences in China’s experience over the last two decades seem to support most of our theoretical propositions. This give us confidences in using more rigorous applied economic models such as the Global Trade Analysis Project (GTAP) model to stimulate some policy consequences with more details.

Since the real world situation is always more complex than what a theoretical model can predict, the net impact of RMB appreciation on the pattern of income distribution cannot be identified without a quantitative assessment underpinned by a multi-national and multi-sector general equilibrium framework. To carry out such an analysis, a well-known computable general equilibrium model, the GTAP model, is used in this study.
3. Methodology

A key question of the RMB appreciation is how and to what extent the appreciation will affect regional specialization and comparative advantage, and income distribution among owners of different factors of production, not only in China but also in the rest of the world. Specifically, which group(s) benefits while the others suffer from the RMB appreciations, and to what extent will the benefits or damages be distributed across different industries and sectors? These questions cannot be answered without some quantitative assessment.

With the help of CGE models, all these gains and losses can be quantitatively assessed. For instance, using a revised GTAP model, Yang et al (2012), and Mai and Peng (2009) report that when rental, investment and employment falls as a result of falling demand for China’s exportable goods when RMB appreciates, the real wage for labor increases by more than 4%. However, Meng et al (2013) tell a different story of falling in factor payments for all of the five factors of production, when a different modeling method of the RMB appreciation is adapted.

Using a similar methodology but focusing to its domestic production and income distribution issue, this paper incorporates RMB appreciation by assuming changes in the prices of both exports and imports as an approximation of the RMB appreciation. Different from early studies, a newly released dataset which is based on 2007 data of the world economy is used for the simulations. The world economy is disaggregated into ten regions and ten sectors to capture the regional and sectoral impact of the change. The method of the disaggregation is detailed in the Appendix.

Given the fact that there is no explicit exogenous variable for the exchange rate, approximation must be adapted. Since the appreciation of a currency will ultimately change the prices of both exports and imports for the corresponding country, the price change of the tradable goods is analogous to an increase in the tariffs of the country’s exports and a decrease in the price of the country’s imports. The changes in real exchange rate of the RMB is represented by changing the prices of the good and services that across the Chinese border. To examine the effects of a real appreciation of the RMB in 2007, the year that the GTAP data is based, we simply shock the model by making a change of the tariff rates of both the Chinese exports and imports to affect the prices of the bilaterally traded goods by 10%. After the shock, the price of China’s imports from other regions is 10% cheaper while the price of the Chinese exports into the other countries is 10% dearer.

4. Simulation results

The results concerning the impact of a 10% real appreciation of the RMB on several key economic variables are summarized in the following tables and the details of the changes at sector levels for each region are available upon request.

4.1 Changes in regional GDP, exports and imports

The changes in regional GDP, international trade (exports and imports), current account and the terms of trade, along with a welfare variable of equivalent variation (EV) for the ten regions are
reported in Table 1. It is clearly shown in the table that when GDP, trade and current account fall significantly in China, these variables move in the opposite direction in all other regions except for the external trade figures in North America, which includes both the US and Canada, and the imports in some Asia-pacific countries. This consequence is acceptable because when the Chinese exports are reduced due to the RMB appreciation, vacancies are created in these country’s markets which may not be quickly filled in the short run.

The gains for all other regions, however, do not automatically generate economic welfare for the world as a whole because these gains are more than offset by the heavy lose in China. As a result, the net welfare impact for the world as a whole indicated by the sum of the EV, is actually a negative figure US$10.9 billion.

<table>
<thead>
<tr>
<th>Region</th>
<th>GDP</th>
<th>Exports</th>
<th>Imports</th>
<th>Current Account</th>
<th>Terms of Trade</th>
<th>EV</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>US$m</td>
<td>US$m</td>
<td>US$m</td>
</tr>
<tr>
<td>ANZ</td>
<td>1.11</td>
<td>0.41</td>
<td>-0.26</td>
<td>1374</td>
<td>1.35</td>
<td>2433</td>
</tr>
<tr>
<td>China</td>
<td>-12.92</td>
<td>-5.7</td>
<td>-0.24</td>
<td>-69471</td>
<td>-10.26</td>
<td>-129567</td>
</tr>
<tr>
<td>Japan</td>
<td>1.16</td>
<td>0.37</td>
<td>-0.6</td>
<td>7224</td>
<td>1.93</td>
<td>12252</td>
</tr>
<tr>
<td>EastSE Asia</td>
<td>1.74</td>
<td>0.34</td>
<td>-0.27</td>
<td>10197</td>
<td>1.6</td>
<td>23202</td>
</tr>
<tr>
<td>South Asia</td>
<td>1</td>
<td>0.41</td>
<td>-0.06</td>
<td>1394</td>
<td>1.07</td>
<td>3132</td>
</tr>
<tr>
<td>North America</td>
<td>0.89</td>
<td>-0.4</td>
<td>-0.7</td>
<td>11364</td>
<td>1.31</td>
<td>32508</td>
</tr>
<tr>
<td>South America</td>
<td>0.79</td>
<td>0.69</td>
<td>0.11</td>
<td>5063</td>
<td>0.73</td>
<td>4396</td>
</tr>
<tr>
<td>EU_25</td>
<td>0.87</td>
<td>0.53</td>
<td>0.16</td>
<td>21499</td>
<td>0.51</td>
<td>26949</td>
</tr>
<tr>
<td>Africa</td>
<td>1.07</td>
<td>0.46</td>
<td>0.06</td>
<td>2325</td>
<td>0.87</td>
<td>4374</td>
</tr>
<tr>
<td>Rest of World</td>
<td>0.96</td>
<td>0.54</td>
<td>0.07</td>
<td>9033</td>
<td>0.73</td>
<td>9417</td>
</tr>
</tbody>
</table>

It is interesting to note that although with different treatment of the exchange rate and using different database, our simulation results are similar to those reported by Zhang and Fung (2006), among others.

4.2 Changes in output in the industry level

To explore the effect of RMB appreciation in both China and the rest of the world further, changes in production in different industries and in different regions are also examined. The
The results shown in Table 2 reveal a significant decrease in output in some industries which are mainly agricultural based or service. The most suffering sectors in China are, in a descending order in magnitudes, services, food processing, dwelling, capital goods, and grains and meat, when other industries particularly the heaving manufactures, and textiles and clothing expand.

The output change in other regions is mixed. An interesting phenomenon is that the RMB appreciation does not have any negative impact on China’s industrialization because the figures show that when the manufacturing activities are expending, these activities are contracting in the rest of the world. For the service sector, the direction of change is reversed. It seems to suggest that the fall in GDP growth after drastic RMB is more likely to be a pricing phenomenon which will not alter the fundamental industry structure but the terms of trade between China and other regions (see Table 1).

4.3 Changes in income distribution

The result on income distribution after the real RMB appreciates for 10% is displayed in Table 3. It is clearly shown in the table that the economic impact on income distribution is so bad that the rate of returns in four of the five factors of production, namely the owners of land, skilled as
well as unskilled labor, and capital are all falling, with the only winner of the owner of natural resources, gains significantly. While the owners of land and unskilled labor in China may be attributable to the same entity, namely famers in the rural sector, this will reinforce the already deteriorated income inequality in China further.

**Table 3. Changes in income distribution in different regions**

<table>
<thead>
<tr>
<th>Factor</th>
<th>ANZ</th>
<th>China</th>
<th>Japan</th>
<th>EastSE Asia</th>
<th>South Asia</th>
<th>North America</th>
<th>South America</th>
<th>EU25</th>
<th>Africa</th>
<th>Rest of World</th>
</tr>
</thead>
<tbody>
<tr>
<td>Land</td>
<td>-0.94</td>
<td>-2.14</td>
<td>-1.52</td>
<td>-1.09</td>
<td>0.23</td>
<td>1.1</td>
<td>0.16</td>
<td>0.07</td>
<td>0.25</td>
<td>0.16</td>
</tr>
<tr>
<td>Unskilled Labor</td>
<td>0.05</td>
<td>-0.24</td>
<td>0.08</td>
<td>0.26</td>
<td>0.04</td>
<td>0.02</td>
<td>0.03</td>
<td>0.01</td>
<td>0.11</td>
<td>0.06</td>
</tr>
<tr>
<td>Skilled Labor</td>
<td>0.11</td>
<td>-0.92</td>
<td>0.09</td>
<td>0.36</td>
<td>0.09</td>
<td>0.05</td>
<td>0.08</td>
<td>0.05</td>
<td>0.17</td>
<td>0.12</td>
</tr>
<tr>
<td>Capital</td>
<td>0.05</td>
<td>-0.17</td>
<td>0.07</td>
<td>0.26</td>
<td>0.03</td>
<td>-0.01</td>
<td>0.02</td>
<td>0.02</td>
<td>0.06</td>
<td>0.05</td>
</tr>
<tr>
<td>Natural Resources</td>
<td>-0.51</td>
<td>2.98</td>
<td>-1.72</td>
<td>-1.34</td>
<td>0</td>
<td>-1.11</td>
<td>-0.06</td>
<td>-0.43</td>
<td>-0.61</td>
<td>-0.41</td>
</tr>
</tbody>
</table>

The consequence of RMB appreciation on income distribution for the other regions in the world economy is mixed. While owners of land lose in Asia and Australasia, their counter-parts in other part of the world including in South Asia countries benefit. The owners of natural resources lose elsewhere, while they gain overwhelmingly in China. The owners of labor, both skilled and unskilled, along with the owners of capital in all other regions, benefit from the RMB appreciation.

**5. Conclusion**

Based on a brief review over the issue of how trade liberalization in general and RMB appreciation in particular affect economic growth and income distribution, this paper attempts to examine the economic impact of a drastic RMB appreciation on not only the Chinese economy but also in the rest of the world. By simulating an approximation of a real RMB appreciation of 10%, the theoretical projection in change of economic welfare and the consequential redistribution of national income are conditionally confirmed. Specifically, it discovers that a drastic appreciation of the RMB is disastrous for the Chinese economy for its negative impact on production, international trade and income distribution. While the miracle of high economic growth which has been maintained for almost three decades in China could be seriously disrupted, the pattern of income distribution deteriorates in a way that . As a result, when the owners of natural resource intensive industries particularly energy and minerals benefit from the RMB appreciation, the remaining four of the five productive factors, namely the owners of labor, capital and land, are all suffering from a fall in their real rate of return. This consequence we derived from simulation is vividly imaging what has been happening in the real economy of China over the last decade.
The impact of RMB appreciation on the rest of the world is just on the opposite. While modest gains in production and trade are obtained by almost all other regions, the Northern American countries particularly the US as the biggest trade partner of China lose somewhat in external trade. More importantly, when the natural resource intensive sector suffers, owners of other four productive factors particularly labor gain. This tradeoff in functional income between China and the rest of the world, nevertheless does not mean the world as a whole benefits. In fact, the net overall welfare change is negative for the world. This seems to suggest that some of the advantages may be taken away from their efficient allocation of resources when a drastic RMB appreciation occurs.

Although still very tentative, the findings of this paper have some important policy implications for both China and the rest of the world. Firstly, a drastic RMB appreciation may lead to a hard landing for the Chinese economy so it should be necessarily avoided. Secondly, since the RMB appreciation and factor price may move in an opposite direction, a drastic RMB appreciation is not in the interest of the Chinese people, so long as a high economic growth rate and a better pattern of income distribution are setting as a combined goal for them to achieve in the future. Thirdly, to switch from an export oriented economy to a one that mainly focuses on domestic consumption through RMB appreciation may more problems than it could solve. Since RMB appreciation has some negative impact on income distribution, some complementary policies including perhaps expansionary fiscal policies must be implemented along with the appreciation to eliminate the negative impact. In the case of China, since it is more likely that the farmers who are combined owners of both land and labor in the rural sector and working class in the urban sector lost the most, the Chinese government may need to implement some corresponding policies targeting at increasing disposable income for these suffering income groups during the process of RMB in the future.

References


Appendix: The Aggregation of Regions and Sectors (gtap10_10)

Table A1, The aggregation of the ten regions

<table>
<thead>
<tr>
<th>No.</th>
<th>Region code</th>
<th>Comprising economies</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>ANZ</td>
<td>Australia, New Zealand</td>
<td>Australia and New Zealand,</td>
</tr>
<tr>
<td>2</td>
<td>China</td>
<td>China</td>
<td>China</td>
</tr>
<tr>
<td>3</td>
<td>Japan</td>
<td>Japan</td>
<td>Japan</td>
</tr>
<tr>
<td>4</td>
<td>EastnSEAsia</td>
<td>East &amp; SE Asia</td>
<td>All other countries in Asia except those in South Asia</td>
</tr>
<tr>
<td>5</td>
<td>South Asia</td>
<td>South Asia</td>
<td>India, Pakistan, Bangladesh, Nepal, lka xsa</td>
</tr>
<tr>
<td>6</td>
<td>North America</td>
<td>US&amp;Canada</td>
<td>US &amp; Canada</td>
</tr>
<tr>
<td>7</td>
<td>South America</td>
<td>South America</td>
<td>All countries in America except US and Canada</td>
</tr>
<tr>
<td>8</td>
<td>EU-25</td>
<td>European Union</td>
<td>The 25 EU countries in 2007</td>
</tr>
<tr>
<td>9</td>
<td>Africa</td>
<td>Africa</td>
<td>All countries in Africa</td>
</tr>
<tr>
<td>10</td>
<td>ROW</td>
<td>Rest of the World</td>
<td>All other countries that are not included in the 9 groups</td>
</tr>
</tbody>
</table>
Table A2. The aggregation of the ten sectors (gtap10_10)

<table>
<thead>
<tr>
<th>No.</th>
<th>Sector Code</th>
<th>Comprising industries</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Food</td>
<td>Paddy rice, wheat, cereal grain, vegetable, fruits, nuts, oil seed, beet, crops, cattle, sheep, goat, horses, animal product, fishing, meat, dairy product, plant-based fibbers, wool, silk-worm cocoons, forestry, sugar cane,</td>
<td>Primary production, land and resource intensive goods</td>
</tr>
<tr>
<td>2</td>
<td>Extraction</td>
<td>Mining and Extraction</td>
<td>land and resource intensive</td>
</tr>
<tr>
<td>3</td>
<td>Processing food</td>
<td>sugar, milk, beverage and tobacco,</td>
<td>Labor intensive</td>
</tr>
<tr>
<td>4</td>
<td>Textiles</td>
<td>Textiles and apparel</td>
<td>Labor intensive</td>
</tr>
<tr>
<td>5</td>
<td>Light manufacture</td>
<td>Leather, lumber etc.</td>
<td>Labor intensive</td>
</tr>
<tr>
<td>6</td>
<td>Heavy manufacture</td>
<td>Chemical, oil processing etc.</td>
<td>Capital intensive</td>
</tr>
<tr>
<td>7</td>
<td>Dwelling</td>
<td>Dwelling &amp; construction</td>
<td>labor intensive</td>
</tr>
<tr>
<td>8</td>
<td>Utility</td>
<td>Electricity, gas distribution, water,</td>
<td>Labor intensive</td>
</tr>
<tr>
<td>9</td>
<td>Transport Communication</td>
<td>trd otp wtp atp cmn</td>
<td>Capital intensive</td>
</tr>
<tr>
<td>10</td>
<td>Other service</td>
<td>ofi isr obs ros osg</td>
<td>Labor intensive</td>
</tr>
</tbody>
</table>

\[i\] The Magnification effect shows that trade liberalization will actually make the locally-scarce factor of production worse off because increased trade makes the price index fall by less than the drop in returns to the scarce-factor induced by the Stolper-Samuelson theorem. This has implications to both labour and capital.

\[ii\] A more realistic dual economic model of the Lewis-type may incorporate the concept of surplus labor. In this case, the initial equilibrium is reached when the marginal productivity of labor in the urban manufacturing sector and the average productivity of rural labor in the rural agricultural good sector are equalized. This setting of the labor market is based on a well observed fact in developing countries that when a capitalist marketing mechanism dominates the production and employment pattern in the modern sector, the rural sector remains as a traditional community where income is shared among all of the members. The income has to be shared because the supply of labor in the rural traditional society is virtually unlimited. When some of the surplus labor is removed from the rural sector, the output in the sector does not fall at all. In fact, when the surplus labor migrates from the rural agricultural sector into the urban manufacturing sector, the overall productivity of labor could even increase. It is hypothesized that this is exactly what has happened in the Chinese labor market since the late 1980s.

\[iii\] Rural labor force may also gain somewhat when the nominal wage rate is increased. However, this gain will be more than offset by the fall in the rental income also received by them as farmers.
If we take the Chinese farmers as both the owners of land and rural agricultural labor, the net impact on them is undetermined because the gain derived from increasing rent could be more than offset by the loss in real wage rate for the rural labor and migrants.

Equivalent variation (EV) is a welfare measure of how much more money a consumer would pay before a price increase to avert the price increase.