Income Inequality in Korea: an Analysis of Trends, Causes and Answers

Oct. 25, 2011
Chong-Bum An and Barry Bosworth
Motivation

KOREA: a positive relationship between growth and equity

- high economic growth
- low inequality
- low rates of unemployment
- low rates of poverty
After the 1997 financial crisis

1) Income distribution has deteriorated
   ➔ Returning to the level in the early 1980s

2) Unemployment soared for an extended period

3) Rates of poverty have risen to levels well above those of the pre-crisis era.

4) Public perceptions deteriorated
   - 2008 BBC poll conducted within 34 major countries, the perception that the benefits and burdens of economic development have not been fairly distributed in their country is the highest in S. Korea (86%)
Key questions

1. Has there been a structural break in the relationship between growth and equity?

2. If so, what factors are responsible for the deterioration?

3. How has the government responded to the changed circumstances and have the policy actions been effective?
Contents

- Measuring Income Inequality and Poverty
  I. Trends in Korean Income Inequality
  II. The Dimensions of Poverty
- Socio-Economic Determinants of Inequality and Poverty
  III. Effects of Growth on Inequality and Poverty
  IV. Influence of Population Aging, Education, and Globalization on Inequality
- The Role of the Public Sector
  V. The Role of the Social Welfare System
  VI. The Role of the Tax System
  VII. Proposals for Improving the Efficacy of Redistributive Policies
I. Trends in Korean Income Inequality

- To assess the empirical measures of the changes in income distribution and poverty over the past two decades
- Macroeconomic distribution analysis
- Micro-survey data analysis:
  - NSHIE for 1996 and 2000
  - HIES for 1985 to 2008
  - OWS for 1985 to 2008
The basic pattern of a gradual improvement in up to the mid-1990s, followed by a very large deterioration in the years of financial crisis that is not reversed with economic recovery.

Source: Authors' estimates from the micro data files of the HIES. The Gini is computed using percentiles. The adjustment for family size is number of members raised to the 0.5 power.
1. Macroeconomic Findings

1) The household share of Gross National Income declined from 68 percent in 1988-97 to an average of only 60 percent in 2001-06.

2) Households have been experiencing major losses of purchasing power as prices of the consumer products they purchase have been rising more rapidly than the prices of the goods and services they produce. ➔ loss of terms-of-trade.
3) In the 2000-06 period, per capita real disposable income has grown at only one-third the rate of GDP per capita ➞ 1.3% vs. 4.2% per year.

<Figure 2-1> Trends in Household Disposable Income, 1985-2006

Source: Constructed by the authors from the table 'Income by Institutional Sector' of the National Accounts.
2. Findings from Micro-Data Analysis

1) The standard measures of the Korean income distribution systematically understate the degree of inequality by excluding many households in the top (the self-employed) and bottom (the unemployed and retired) portions of the distribution.

<Figure 2-3>
Distribution of Households by Type of Household and Income Decile, 1996 & 2000

Source: Computed by the authors from the micro data files of the NSHIE for 1996 and 2000.
2) Increases in the number of multiple earner households have tended to have an equalizing influence.

*In the U.S., the increased labor force participation of wives has lead to growing family inequality because of a strong positive correlation of spousal incomes* (Burtless, 1999).

- In the top quintile, 68 percent of male heads are the sole earner compared to only 46 percent in the bottom quintile.
- Families in the lower portion of the distribution: multiple earners (by the spouse or employed children)
- But very low percentage of households (4% in 2006) have income from both the spouse and other members.
3) Most of the growing inequality of family incomes over the past decade can be traced to a widening of the distribution of wage incomes.

<Figure 2-8>
Comparison of Earnings Inequality of Males, HIES and OWS, 1985-2006>

Source: Authors computations from the micro data files of the HIES and OWS. Data restricted to male heads of household in the HIES and males in the OWS.
4) Returns to Education ➔ Earnings Distribution

- The wage premium of those with a college degree relative to high school graduates consistently fell from 1985 up to the mid-1990s, but it has widened during the most recent decade.

*Figure 2-10*
Wage Differentials by Level of Educational Attainment in the HIES and OWS, ‘85–’08

Source: Authors computations from the micro data files of the HIES and OWS. Data restricted to male heads of household in the HIES and males in the OWS, ages 25-45 only.
II. The Dimensions of Poverty

- Korea has one of the highest incidences of poverty among the OECD countries.

1) This is due almost entirely to a very high rate of poverty among the elderly and it reflects the immature nature of the public pension system.

2) The poverty rate of families with children is well below the OECD average.
### Comparisons of Inequality and Relative Poverty: Korea, Taiwan, and the United States

**Source:** Korea: 1996 and 2000 NSHIE, 2006 HIES; Taiwan: FIES; United States: CPS

*HIES 2006 values for Korea are annual averages of monthly observations

**2006 values are 2005 for Taiwan

Note: "Elderly" is defined as 60 years and above, whereas "Children" is defined as those 19 years and younger

#### Korea*

<table>
<thead>
<tr>
<th></th>
<th>1996</th>
<th>2000</th>
<th>2006</th>
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<tr>
<td>Gini</td>
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<td>0.393</td>
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<td>4.90</td>
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<td>1.94</td>
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<td>50-10 Ratio</td>
<td>2.52</td>
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#### Relative Poverty

<table>
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<tr>
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<tbody>
<tr>
<td>All</td>
<td>8.4</td>
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<tr>
<td>Elderly Member</td>
<td>17.1</td>
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<tr>
<td>Non-elderly, with Children</td>
<td>6.3</td>
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#### Taiwan**

<table>
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<tr>
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#### Relative Poverty

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<th>2006</th>
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<td>4.8</td>
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<td>6.0</td>
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<tr>
<td>Elderly Member</td>
<td>7.8</td>
<td>8.4</td>
<td>10.4</td>
</tr>
<tr>
<td>Non-elderly, with Children</td>
<td>3.0</td>
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<td>3.0</td>
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#### United States

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<th>2006</th>
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<tr>
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<td>0.468</td>
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#### Relative Poverty

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<th>2006</th>
</tr>
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<td>All</td>
<td>21.2</td>
<td>20.5</td>
<td>21.1</td>
</tr>
<tr>
<td>Elderly Member</td>
<td>15.0</td>
<td>15.5</td>
<td>19.3</td>
</tr>
<tr>
<td>Non-elderly, with Children</td>
<td>21.9</td>
<td>20.9</td>
<td>21.8</td>
</tr>
</tbody>
</table>
1. No Kuznets Hypothesis in Korea!

- Changes in income levels have had no persistent association with the evolution of income inequality over time.
  - Market openness, such as the ratio of private capital flows to GDP, appear to be associated with increased inequality.
  - An increase in the share of the elderly results in an increase in the poverty rate and a worsening of the income distribution.
2. A More Dynamic Approach

- The change in income inequality associated with business cycle.
  - All income classes are affected by business cycle fluctuations, the impacts tend to be most pronounced for the lower-income groups.
  - When non-farm GDP falls by 1 percent, the income of households in the bottom income decile decreases by 1.6 percent, whereas the income losses of those in the higher deciles vary between 1.2 and 0.8 percent.
3. Relative income mobility

- The trend of household income mobility has decreased during 1999-2007. (mobility ratio: 73% → 65%)

- Private Transfer still helps in the income mobility as well as inequality reduction, while public transfer only works in Gini improvement.

- Female householders are a little more mobile than male. The percent of moving down is larger than moving up.
IV. Influence of Population Aging, Education and Globalization

1. Population Aging

*Figure 5-2*  Population by Age Groups, 1960-2050

1. Population Aging

<Figure 5-9a> Age 60 and Above: Labor Force Participation and Share of Total Population

Note: HIES 1985-2006 Male Head of Households
2. Education

<Figure 5-4> Average Years of Schooling: HIES vs OWS (Males Only All Ages)

Source: tabulated by the authors from the HIES and OWS. The comparisons are limited to males and in the case of the HIES, heads of households.
2. Education

Source: Male Household Head Earnings (Wage-Earners Only). Earnings differentials are measured relative to the earnings of high school graduates.
3. The Interaction of Education and Aging

1) Mincerian regressions using HIES 85-08

\[ \text{Income} = f (\text{education, age}) \]

- changes in the structure of education and age can account for both the initial decline in inequality and its rise in more recent years
2) Decomposition Analysis

- The gains in educational attainment are found to have had an equalizing effect in the early part of the period, as increases in the supply of skilled workers contributed to the narrowing of the wage distribution, but it has been a source of increased inequality more recently as the pace of improvements in educational attainment has slowed.

- The age share has been steadily increasing 4% of inequality in 1985 ➞ 10 % in 2006
<Figure 5-7> Decomposition of Coefficient of Variation (in logs) by Factor

Source: Computed by the authors as explained in text.
Note: Using HIES 1985-2008 Male Head of Household Earnings (Wage-Earners Only)
4. Globalization

1) The degree of wage inequality was very similar in the tradable and non-tradable industries and that they had changed in a parallel fashion over time.
   - no evidence that the change in inequality was more pronounced in those industries that were most exposed to international trade.

2) The increase in inequality was greatest in a group of service-dominated industries that we labeled potentially-tradable.
   - it appears to reflect the high wage structure within finance and is not directly related to the issue of trade.
<Figure 5-14>  Earnings in Traded and Non-traded Industries, 1985-2008

Source: Computed by the authors from the OWS as explained in text. Calculations are limited to the earnings of men, and there is a change in the industry classification in 1992-93.
5. The Role of the Social Welfare System

1. History and Budgets

- Dramatic Evolution of Korean public welfare system over the past two decades. ⇒ Existing programs have been expanded and new programs have been introduced.
  - the national pension (introduced in 1988),
  - national health insurance (1977),
  - unemployment insurance (1995),
  - workers’ compensation (1963),
  - long-term care insurance for the elderly (2008).
Social expenditures more than doubled as a percentage of GDP between 1995 and 2005, but they are still only one-third of the OECD average.

<Figure 6-1> Public Social Expenditures: Korea and OECD Average, 1990-2005

<table>
<thead>
<tr>
<th>Category</th>
<th>1990</th>
<th>1995</th>
<th>2000</th>
<th>2005</th>
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<tr>
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<td>Korea</td>
<td>2.9</td>
<td>3.3</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>OECD</td>
<td>18.1</td>
<td>19.9</td>
<td>19.3</td>
</tr>
<tr>
<td>Old Age</td>
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<td>1.1</td>
<td>1.7</td>
<td>1.9</td>
</tr>
<tr>
<td></td>
<td>OECD</td>
<td>9.2</td>
<td>9.9</td>
<td>9.7</td>
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<td>Health</td>
<td>Korea</td>
<td>1.6</td>
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<td>2.2</td>
</tr>
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<td></td>
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<td>4.9</td>
<td>5.2</td>
<td>5.4</td>
</tr>
<tr>
<td>Family</td>
<td>Korea</td>
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<td>0.1</td>
<td>0.1</td>
</tr>
<tr>
<td></td>
<td>OECD</td>
<td>4.9</td>
<td>5.2</td>
<td>5.4</td>
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<td>Labor Market</td>
<td>Korea</td>
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<td>0</td>
<td>0.5</td>
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<td></td>
<td>OECD</td>
<td>1.8</td>
<td>2.3</td>
<td>1.7</td>
</tr>
<tr>
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<td>0.1</td>
<td>0.3</td>
</tr>
<tr>
<td></td>
<td>OECD</td>
<td>0.4</td>
<td>0.5</td>
<td>0.5</td>
</tr>
</tbody>
</table>

Note: Old age includes the survivor and disability programs; and unemployment insurance is grouped with other labor market programs.
2. Two Challenges

- First, there is a problem of low coverage, particularly with the national pension system and the employment insurance program.

- Second, an extremely rapid period of population aging will put large strains on the system as the elderly account for a growing share of the expenditures.
3. National Pension

- Despite a series of recent reforms to the national pension system, Korea still faces several problems in developing an effective response to the problems raised by the aging of its population.
  - The 2007 reforms addressed the problem of high rates of poverty among the elderly by creating a new Basic Old Age Pension.

1) The country is aging at a very dramatic rate.
   - With regard to the first problem of long-term solvency of the NPS, it is vital that Korea maintain a strongly-funded pension program.
<Figure> Demographic Old-Age Dependency Rate, 2000, 2025, and 2050

<Figure 6-2> Dependency Rate of National Pension System, 2005-78

Note: Dependency ratio is computed as number of beneficiaries per contributor. The base case reflects a fertility rate that slowly rises to 1.28. The alternative assumes a larger increase in the fertility rate to 1.6 after 2010.
<Figure 6-3> Financial Condition of the National Pension System 2005-78

Panel A: Income and Cost Rate for National Pension

Contributions plus interest

Cost rate

Contribution rate

Cost rate = expenditures / tax base
Total income rate = (premium receipts plus investment income) / tax base
2) Korea currently has a severe problem of poverty among the elderly.

- Based on data from the 2006 HIES, 36% of households headed by a person age 65 and over reported size-adjusted income below the minimum income standard of the NBLS, compared to 10.5% for all households.

- In part, this is result of the immaturity of the NPS.

- Currently, only about 20% of those over age 65 receive benefits and those benefits are still quite low due to the short period of contribution (MIHWFA, 2008).
3) The coverage of the NPS remains surprisingly low because many workers do not contribute.

- In mid-2007 the NPS had about 18 million insurants, representing 77% of the total employed. (5% : separate public employee and private school teacher pension programs)
- That still leaves more than 15% of the workforce outside of the pension programs.
- Low participation is a particular problem among low-income workers, despite the favorable redistribution features of the benefit formula.
3. Health Care

1) Korea operates a universal public health care system that combines low public cost with a substantial degree of private payments.

- The low public cost is offset in part by a substantial level of private payments; but, the combined public and private costs, at 6.4% of GDP in 2008 (OECD average of 8.9%).
- Health care costs rise strongly with income, and Korea is likely to experience an increase in the share of GDP devoted to health care in future years.
An International Comparison of Health Care Expenditures, 2008

Public and Private Health Expenditures as a Share of GDP
OECD Countries, 2008

Source: OECD Health Data, 2010.
2) Health insurance is provided by a government-run single-payer system, but the provision of health care services is largely private.

3) Similar to the NPS, the national health insurance system has difficulties incorporating the self-employed and irregular workers, but the contribution rate is a flat percentage of income with no adjustment for family size.

- In contrast to health insurance, the health care delivery system is largely based on the private provision of services only 10% of hospitals are privately owned (Kwon, 2008).
- The system covers a limited range of services and charges a high level of copayments.
4) The overall health care system accounts for a low share GDP by comparison with other OECD countries, but there are common complaints regarding limited range of services, and high copayments.

- The government is under considerable pressure to expand the system by reducing the magnitude of the copayments.
- However, the current system relies on the insured to restrain costs, and a large reduction in the rate of copayment would limit the effectiveness of the cost constraints.
- Although copayments were changed in 2009 in order to reflect income levels, they still remain a large burden for the low income population.
4. Employment Insurance

- Employment insurance did not cover a meaningful percentage of the population until after the financial crisis of 1997-98.
- Coverage continues to be limited, with just over half of wage and salary workers enrolled in 2005, and there are strong restrictions on eligibility for benefits.
- Nevertheless, the program has made strides in including more of the population and expanding benefits, and it played a much bigger role during the 2008 global financial crisis than in the 1998 Asian financial crisis.
5. National Basic Livelihood Security System (NBLSS)

- The NBLSS was established in 2000 to replace an existing, smaller program.

- Although NBLSS expenditures grew by over ten percent annually during 2002-07, the current total remains equal to only 0.3 percent of GDP.

- Compared to an OECD average of roughly 6 percent of GDP, spending on public assistance is the area of greatest divergence between Korea and comparator countries in regards to social insurance programs.
VI. The Role of the Tax System

1. Evaluation of the role of the tax system in the income distribution.

- We show that most of the changes in the tax system have had an equalizing effect on the income distribution, but they have been largely offset by the growth of nominal incomes, which pushes taxpayers into higher marginal tax brackets.
- The Korean income tax is not fully indexed for inflation and most past analysis does not account for inflation in the evaluation of tax progressivity.
2. Effectiveness in Reallocating Income for Reduce Inequality

- The Gini coefficient of after-tax income is barely smaller than that of pre-tax income, primarily because of the large tax exempt amount in the income tax system.

3. Tax Evasion Problem

- In addition there are significant problems of tax evasion by the self-employed. Problems of tax exemption and tax evasion will only become exacerbated by the recent extension of the National Pension system coverage to the self-employed.
<Table 7-5> Differences in Inequality Before and After Taxes and Transfers, OECD Countries

<table>
<thead>
<tr>
<th>Country</th>
<th>Market Income to Disposable Income YM-YD</th>
<th>Market Income to Gross Income YM-YG</th>
<th>Gross Income to Disposable Income YG-YD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Korea</td>
<td>0.017</td>
<td>0.011</td>
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</tr>
<tr>
<td>Japan</td>
<td>0.051</td>
<td>0.048</td>
<td>0.003</td>
</tr>
<tr>
<td>United States</td>
<td>0.084</td>
<td>0.041</td>
<td>0.044</td>
</tr>
<tr>
<td><strong>OECD average</strong></td>
<td><strong>0.105</strong></td>
<td><strong>0.081</strong></td>
<td><strong>0.034</strong></td>
</tr>
<tr>
<td>France</td>
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<td>Great Britain</td>
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<td>Denmark</td>
<td>0.160</td>
<td>0.118</td>
<td>0.042</td>
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</tbody>
</table>


Note: Concentration coefficient is similar to a Gini coefficient, but individuals are initially ranked by disposable income. Underlying surveys are from the mid-2000s. Gross income includes transfers, disposable income is after taxes.

Source: Sung (2011a).
VII. Proposals for Improving the Efficacy of Redistributive Policies

1. Target Efficiency

- Most of that analysis suggests that the public transfer programs are not well-targeted on the population of poor households.
- We then discuss pre- and post-evaluation methods to improve program effectiveness, and we propose some policy measures by which Korea can construct an institutionalized system for evaluating and improving its welfare programs.
<Table 6-5> Measures of the Target Efficiency of Public Transfer Programs (Beckerman model), 2006 and 2007

<table>
<thead>
<tr>
<th>Classification</th>
<th>2007</th>
<th>2006</th>
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<tr>
<td>Vertical expense efficiency</td>
<td>0.5078</td>
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<tr>
<td>Ratio of excessive expense</td>
<td>0.1977</td>
<td>0.1738</td>
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<tr>
<td>Poverty reduction efficiency</td>
<td>0.4074</td>
<td>0.4486</td>
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</tbody>
</table>

Source: Author calculations as described in the text.
2. Proposals

- Evaluating and improving welfare programs in order to return to a state of strong economic growth in combination with improved income equality.

1) Introduction of target efficiency and reinforcement of rigorous evaluation

- A method of reinforcing pre and post evaluation system for welfare policies must first be considered.

- Establish an evaluation organization, reinforcement of the role of external evaluation systems, and construction of a social infrastructure for evaluation.
2) **Tasks for reforming tax administration and delivery system**
   - Use accurate investigation on income and property levels of recipients in order to increase efficiency of welfare policies.
   - Improve welfare delivery system by installing an administrative institution for welfare.

3) **Budget restructuring**
   - Budget distribution structure should be changed to satisfy increasing welfare demand while avoiding to bring large burden on the budget.
THANK YOU !!!