Implications of Economic Growth, Poverty and Inequality in Mongolia over the Period of 2008-2012

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Abstract

This paper empirically examines Mongolia's growth performance from the perspective of its poverty-reducing and distributional characteristics over the period 2008-2012. The main findings are (i) absolute poverty in Mongolia has fallen, and poverty reduction has accelerated in boom years (2010-2012), (ii) Inequality has fallen in the period, but the inequality has stagnated during the boom, (iii) the poorer people have not suffered during the economic slowdown years (2007/08-2009) due to safety net programs of the government, including the cash transfer program, while the richer people have been more vulnerable to the economic condition, and (iv) the growth has been in general pro-poor. These results have important policy implications, including sustaining overall economic growth to further progress in poverty and inequality reductions and better-targeted social policies to improve the growth inclusiveness.

1. Introduction

The conventional wisdom is that economic growth is the most powerful instrument for reducing poverty and improving the quality of life. However, economic growth does not in itself reduce poverty and inequality, and reducing poverty does not automatically lead to the reduction in inequality. In developing countries, the impact of economic growth upon the poverty and inequality is complex and contentious. For instance, the income of the poorest may increase less than proportionately with growth, and income inequality may increase with growth (Brueckner and Lederman, 2015, Ravallion, 2001).

Mongolia has achieved high economic growth in the last 15 years. The economy has experienced the growth rate of 8 per cent on average since 2000, and has been one of the fastest growing economies in the world during the period 2011-2013, clocking double-digit growth on the back of a mining boom. As a result, Mongolia is now classified as an upper middle-income country and a country with medium human development (Eriksson, 2015). However, there is debate about whether this high growth during the mining boom has benefited all society through reducing both poverty and inequality.

This paper empirically examines Mongolia's growth performance vis-á-vis changes in poverty and income distribution. In particular, we analyse inclusiveness of growth and pro-poor growth[1] in Mongolia over the period 2008-2012 (i.e., including the 2008-09 economic slowdown and the 2010-2012 mining boom) using the growth incidence curve (GIC) developed by Ravallion and Chen (2003). Though GIC is one of many alternative ways to measure growth inclusiveness, GIC is chosen as the main approach in the paper because the approach can simultaneously provide information about both growth inclusiveness and pro-poor growth.

Over the last four decades, economists have focused on the relationship between economic growth, poverty and inequality. The relationship can be traced back to the Kuznets (1955) and Solow (1956) models. Kuznets' inverted-U curve hypothesis suggests that economic growth in poor countries would initially lead to greater inequality, which would later decline as the economy continues to develop. However, Solow's growth model shows that poor countries tend to grow faster, and hence eventually converge with the developed countries. In recent years, a number of papers (ADB, 2004, Dollar and Kraay, 2002) has emphasized the importance of economic growth for poverty reduction. However, impact of growth on poverty is not straightforward. The overall impact of growth depends on a direct impact on poverty through an overall mean income growth, but also an indirect impact via changes in inequality.

As highlighted by Ravallion and Chen (2003), the information on how the gains from aggregate economic growth (or the losses from contraction) are distributed across households can provide deep insight about the impact of growth on poverty and inequality. To analyse the distributional effect of growth, several papers (Klasen, 2008, Kraay, 2006, Warr, 2005) have calculated the 'growth incidence curve'[2], showing the rate of growth over the relevant time period at each percentile of the distribution (ranked by income or consumption per person), for different countries. There are also few studies that have studied the impact of economic growth on poverty and income distribution in Mongolia (see for example, Smith, 2008, Marshall et al., 2008, and World Bank, 2011). This paper differs from the existing literature for Mongolia because of the difference in the sample periods, and this is one of the first attempts to identify growth inclusiveness and estimate the pro-poor growth during the mining boom period.

The remainder of the paper is organized as follows. Section 2 provides an overview of economic growth, poverty, cash-transfer programs and inequality in Mongolia based on the secondary data. Section 3 presents the methodology for constructing the growth incidence curve, identifying the inclusiveness of growth and estimating pro-poor growth. Section 4 describes the primary data based on Household Socio-Economic Surveys (HSES) conducted by National Statistical Office of Mongolia. Section 5 summarizes empirical results, investigating the impact of economic growth on poverty and inequality. Finally, section 5 concludes the paper with some policy implications.

2. An overview of economic growth, poverty, cash transfers and inequality in Mongolia

Mongolia is a resource-rich, landlocked country, which has a population of slightly over 3 million. The economy has achieved high economic growth over the last decade. An average annual growth rate was 8.6 per cent between 2002 and 2012 and has been one of the fastest growing economies in the world during the period 2011-2013, clocking double-digit growth on the back of a mining boom. The global financial crisis (GFC) affected every region of the world, and Mongolia was no exception. The economy experienced a slowdown and recession between 2008 and 2009 (See Figure 1).

With two very large mining projects (i.e., the Oyu Tolgoi copper/silver/gold mine and the Tavan Tolgoi coal mine), Mongolia has experienced a large-scale commodity boom during the period 2011 and 2013. Thus, the recent years' growth was not broad-based and largely driven by the mining boom.

Figure 1. Economic growth and poverty in Mongolia
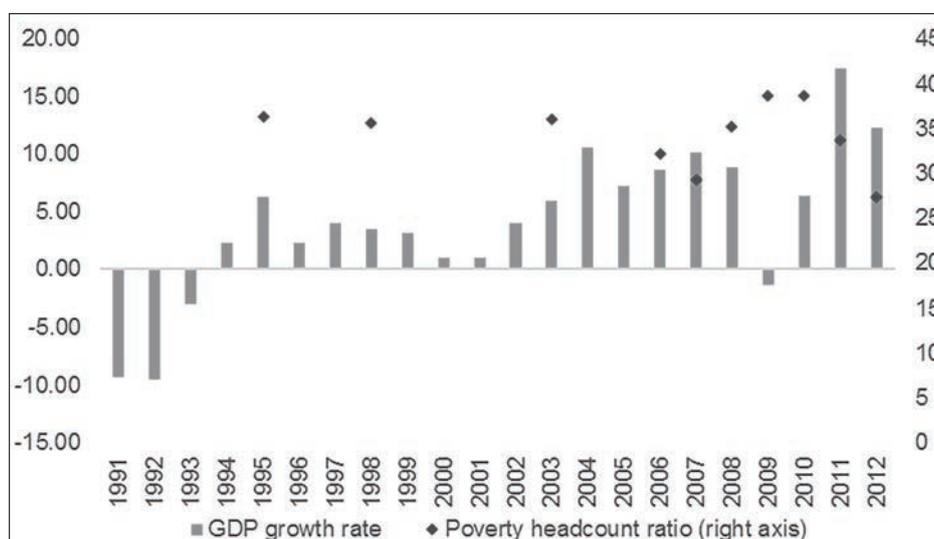
Source: Statistical Yearbooks, NSO, various years

Like other developing countries, the poverty measures in Mongolia have not been directly comparable until 2007/08. The poverty headcount ratio is calculated based on consumption expenditure rather than income. The minimum level of livelihood (national poverty line) is determined on the basis of monthly consumption per capita and is published by the National Statistical Office (NSO) annually by taking into account for inflation. Though there are two estimates of poverty in 1995 and 1998 reported by the NSO, the results are incomparable. There exist major differences in classifications, definitions, coverage, method and sampling error among the estimates (World Bank, 2008). The first household survey was conducted by the NSO in 2002/03 with the technical assistance from the World Bank and the United Nations Development Program (UNDP). However, since 2007/08, the NSO has annually conducted the HSES and the methodology has become consistent across surveys[3]. Thus, poverty measures calculated for the year 2007/08 and onwards are directly comparable. Table 1 presents all available poverty and inequality measures.

Table 1. Poverty and inequality measures, 1995-2012

Year	Poverty headcount ratio	Poverty gap	Ratio of consumption expenditure share of the top decile to that of the poorest decile	Gini coefficient[1]
1995	36.3[†]	10.9	8.2	33.2 (31.0)
1998	35.6[†]	11.7	7.5	30.3 (34.0)
2002/03	36.1	11	8.2	32.8 (32.9)
2006	32.2	10.1	-	-
2007/08	35.2	10.1	9.2	35.82
2009	38.7	10.6	-	-
2010	38.7	11.5	8.0	33.08
2011	33.7	9.2	8.2	33.88
2012	27.4	7.1	8.3	33.75

Source: Statistical Yearbooks, NSO and World Development Indicators, World Bank
Notes: [1]World Bank estimates. [†]The estimate is based on the Living Standards Measurement Survey[4]. The numbers in (·) are the Gini coefficients estimated by the NSO.

High poverty and rising inequality have been a major challenge in Mongolia over last two decades. Mongolia shifted from a centrally planned to a market-oriented economy in 1990. During the centrally planned system, poverty was almost non-existent in Mongolia. However, within one decade of market-oriented economy, a headcount ratio of poverty reached over 35 per cent. The household survey reported the headcount ratio as 36.1 per cent in 2002/03. As stressed by the World Bank (2011), the economic slowdown and recession driven by the GFC is associated with significant changes in aggregate poverty and inequality. For instance, the poverty rate has continuously increased during the period 2007-2009, and reached 38.7 per cent in 2009. However, poverty gap measuring the mean shortfall in consumption expenditure from the poverty line (expressed as a percentage of the poverty line) has been stable during the period 2002-2010.

Mongolia is the only developing country that has directly distributed natural resource wealth through cash transfers and actually introduced a resources-to-cash scheme. To counteract rising inequality and distribute the benefits of the mining boom more widely, the government of Mongolia set up a Human Development Fund (HDF) in November 2009 following announcement of the Oyu Tolgoi project agreement. The fund envisages cash handouts, payment of tuition fees and possibly financing of other social benefits. For instance, in 2010 every citizen received a cash handout of MNT 120,000 (equivalent to about US$ 86). During the 2008 parliamentary election, public promises were made by key political parties to make total cash transfers of MNT 1.5 million per capita (US$ 1,200). Monthly cash handouts of 10,000MNT (around US$ 7) were distributed between August to December 2010, and of 21,000MNT (approximately US $15) from January 2011 to June 2012. In 2011, the projected annual spending of the fund reached to almost 10 per cent of 2010 GDP (Isakova et al., 2012). Though the cash transfer arrangement had a number of pitfalls and disadvantages[5], the government cash transfers account for a large share of the poor's income in Mongolia, and markedly reduced the poverty to 27.4 per cent in 2012. Moreover, the depth of poverty measured by poverty gap has significantly declined.

The Gini coefficient in Mongolia has been reported differently in different documents. The National Human Development Reports (NHDR) prepared by the UNDP shows even higher Gini coefficient. For instance, the NHDR 2003 reports the Gini coefficient in 2003 is 44 per cent, which is significantly higher than 32.8 per cent and 32.9 per cent estimated by the World Bank and the NSO, respectively. According to the World Bank estimates, income inequality had risen during the period 2002-2008. The Gini coefficient increased to 35.8 per cent in 2008. Since then, the rising income inequality has gained increasing public attention. Some economists argue that the higher income inequality can be a consequence of resource dependence as commodity rents accrue to a relatively small portion of the population.

As agreed by most economists, there are both benefits and threats of inequality. Some degree of the inequality may not be a problem since it provides the incentives for people to compete, save, and invest to move ahead in life (Dabla-Norris et al., 2015). However, high and sustained levels of inequality cause large social costs. Rising inequality can be a signal of lack of income mobility and opportunity. Deep-rooted inequality does not generate the 'right' incentives, and hence results in adverse social and economic consequences. The adverse consequences may include resource misallocation, financial and political instability, high crisis risk and eroding social cohesion and citizen's confidence in the future. Moreover, rising income inequality may increase pressure to focus government policies on redistribution at the expense of growth (Persson and Tabellini, 2000).

Fortunately, the resources-to-cash scheme and higher employment during the mining boom has also contributed to reduce the income inequality in Mongolia. For instance, income inequality measured by the Gini coefficient and the ratio of share of consumption expenditure of the top decile to that of the bottom decile decreased during the period 2008-2010 years and since then has stabilized. It should also be noted that income inequality in Mongolia is not very extreme compared to other countries.

Overall, absolute poverty has significantly declined during the 2010-12 mining boom mainly because of the direct cash-transfer scheme. Moreover, Gini coefficients suggest that income inequality has been slightly reduced in the beginning of the boom. However, the cash-transfer scheme was not a good example of sustainable social policy as it accelerates the boom-bust cycle and results in a greater threat to fiscal sustainability. Though these results show general overview about dynamics of poverty and inequality, they do not provide information about growth inclusiveness.

3. The methodology: The growth incidence curve

A dynamic measure of growth inclusiveness can be derived from the growth incidence curve introduced by Ravallion and Chen (2003). Constructing the growth incidence curve is a methodology that shows how each percentile of households benefits from growth. Inclusive growth should simultaneously reduce poverty and inequality. Growth reduces poverty if the mean income of the poor rises. Growth reduces inequality if it helps to straighten the Lorentz curve, which plots the percentage of total income earned by various portions of the people when the people are ranked by the size of their incomes (Kireyev, 2013).

Ravallion and Chen (2003) show that income (or expenditure) of p-th percentile (ordered by the size of people's income) is as follows:

$$y_t(p) = F_t^{-1}(p) = L'_t(p)\mu_t \qquad (y'_t(p) > 0) \tag{1}$$

where $F_t(y)$ denotes the cumulative distribution function (CDF) of income (or expenditure), giving the number of the household with income less than y at date t, $F_t^{-1}(p)$ is inversion of the CDF at p-th percentile, $L_t(p)$ is the Lorentz curve (with slope $L'_t(p)$), letting p vary from zero to 100 and μ_t is the mean income.

Comparing two dates, $t-1$ and t, the growth rate in income (or expenditure) of the p-th percentile is $g_t(p) = [y_t(p)/y_{t-1}(p)] - 1$ Consequently, the growth incidence curve, which shows variability of income (or expenditure) growth by the percentile of households, can be defined as:

$$g_t(p) = \frac{L'_t(p)}{L'_{t-1}(p)}(\gamma_t + 1) - 1 \tag{2}$$

where γ_t is the growth rate of mean income, μ_t, and $L'_t(p)$ is a slope of the Lorenz curve. From equation (2), it follows that

• $g_t(p) = \gamma_t$ for all p if $L'_t(p) = L'_{t-1}(p)$: growth at each percentile of the curve will be equal to the growth of mean income of the distribution, if the Lorenz curve doesn't change (inequality remains the same) over time.

- $g_t(p) > \gamma_t$ if $L'_t(p) > L'_{t-1}(p)$: growth at each percentile of the curve will be higher than the average growth of the distribution, if the slope of the Lorenz curve decreases over time.
- $g_t(p) < \gamma_t$ if $L'_t(p) < L'_{t-1}(p)$: growth at each percentile of the curve will be lower than the average growth of the distribution, if the slope of the Lorenz curve increases over time.
- The slope of the curve is positive (or negative) if $g'_t(p) = \dfrac{L''_t(p)L'_{t-1}(p)}{L''_{t-1}(p)L'_t(p)} > 1$ (or < 1).

According to the definition of Ravallion and Chen (2003), the rate of pro-poor growth, g_t^{pp}, is the mean growth rate of the poor, given by

$$g_t^{pp} = \int_0^{H_t} g_t(p)dp/H_t \qquad (3)$$

where $H_t = F_t(z)$ is the headcount index of poverty (i.e., the number of households with income (or expenditure) less than z), and z is the poverty line (noting that $y_t(H_t) = z$). From equation (3), it follows that the rate of pro-poor growth will be equal to the average growth of the distribution ($g_t^{pp} = \gamma_t$), if all incomes grow at the same rate.

As emphasized by Kireyev (2013), pro-poor and inclusive growth can be derived based on the incidence curve. For simplicity of illustration, the linear incidence curve is assumed in Figure 2, which illustrates stylized indicators for identifying inclusive growth.

Figure 2. Stylized indicators for identifying inclusive growth
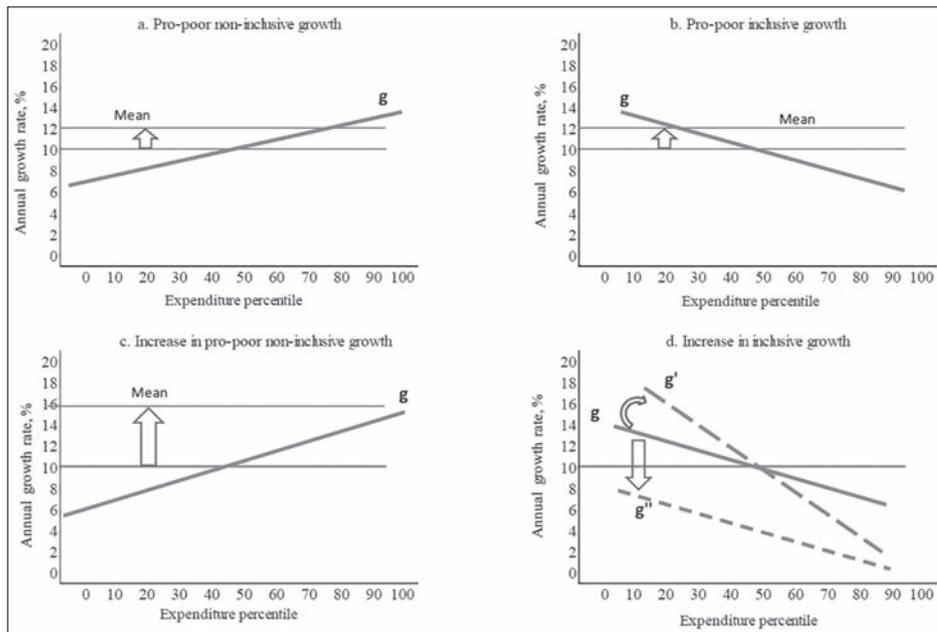
Source: Extracted from Kireyev (2013)

Pro-poor and inclusive growth can be identified as follows: (a) pro-poor growth shifts the mean expenditure of the poor up while the slope of the curve is positive, suggesting that growth is not inclusive; (b) pro-poor inclusive growth shifts the mean expenditure up even if the incidence curve is negatively sloped; (c) accelerations of pro-poor growth just shift the median expenditure further up, while the slope of the incidence curve may remain positive, suggesting the growth remains non-inclusive; and (d) an increase in the inclusiveness of growth suggests that the incidence curve becomes negatively sloped (g), the slope increases (g') and/or the whole

curve shifts to g'' as inequality declines and $L'_t(p) < L''_{t-1}(p)$. In general, improvements in the degree of inclusiveness of growth would be signalled by the growth incidence curve changing the slope from positive to negative, and progress in poverty reduction would lead to the mean of the growth incidence curve and the curve itself moving up.

4. Data

In the rest of this paper, we use the analytical framework of the previous section to build the growth incidence curves and to estimate the rate of pro-poor growth. In the estimations, we use the whole sample data of household socio-economic surveys (HSES) between 2008 and 2012. The HSES covers all 21 provinces and the capital of Ulaanbaatar. In order to obtain representative statistics for the country as a whole, we use sampling weights in the calculations[6]. Starting period is selected as 2007/08 since the HSES data has become comparable starting from this period onward. Though 5 years can be considered as short period for an impact assessment, the analysis based on the available data will provide us the overview of the studied issue. For expenditure, we use all non-durable consumption (which is classified by the NSO) only to minimize imputation problems association with the consumption of durables.

The data is directly collected from the NSO of Mongolia, and is transformed into real values using nationwide consumer price index (CPI). We focus on changes in poverty and inequality over the business cycle. For this purpose, the period 2007/08-2009 is referred to as the economic slowdown and recession period and the period 2010-2012 is called the booming period. We employ Stata for the distribution-based analysis of poverty and inequality, the calculation of Lorenz and growth incidence curves. Table 2 reports some statistics on the real consumption expenditure per person in Mongolia.

Table 2. Some statistics of real household expenditure, at constant 2010 prices

Year	Mean	Median	Coefficient of variation	Decile range	
				P10	P90
2007/08	144,055.1	110,972.5	0.89	42,817.6	116,149.2
2009	139,046.6	111,862.9	0.81	45,746.6	114,804.1
2010	143,703.6	116,629.3	0.77	45,177.6	117,811.8
2011	158,970.4	126,205.0	0.87	50,099.5	130,391.2
2012	181,487.7	148,291.4	0.75	57,710.0	153,108.0

Notes: Real expenditures are in MNT per person per month, at constant 2010 prices. The coefficient of variation is the standard deviation divided by the mean. Decile range means, in the case of P10, the average real expenditure below which the poorest 10 per cent of the population is located and in the case of P90, the value which the below 90 per cent of population is located.
Source: Authors' estimations, using HSES and CPI data from NSO

The mean exceeds the median for all years, reflecting the asymmetry of the distribution of the expenditure skewed towards higher levels of the expenditure. The growth rate of median expenditure has constantly increased over time. For instance, the growth between 2010 and 2012 is 27.1 per cent, which is considerably higher than the 5.1 per cent growth between 2007/08 and

2010. However, the mean expenditure has declined slightly during the economic slowdown, and since then, it has dramatically increased. The next column shows the coefficient of variation of real expenditure, indicating an 18.7 per cent decline in the dispersion of the distribution during the period 2007/08-2012. Decile range of the distribution suggests that the expenditure difference reduced in relative terms, but increased in absolute terms over time. Both values of P10 and P90 have increased, but the ratio of them has reduced because the proportional increases in the P10 values were much larger. Moreover, the difference between them has expanded, reflecting an increase in the spread of the distribution. The average expenditure of the population below 90 per cent is lower than the average consumption expenditure and this indicates that the top decile consumption expenditure is much higher than the average. The top decile's consumption is 3.4 times higher than that of the bottom 90 per cent of population.

5. Results

In this section, we analyse the growth inclusiveness using the distribution-based analysis of poverty and inequality, growth incidence curves and estimates of pro-poor growth.

5.1 The distribution-based analysis of poverty and inequality

We begin by constructing the CDF of expenditure per capita, $F_t(y)$. Figure 3 shows the CDFs for 2007/08, 2010 and 2012, along with the poverty line in 2010.

Figure 3. CDFs of household consumption per capita for 2007/08, 2010 and 2012
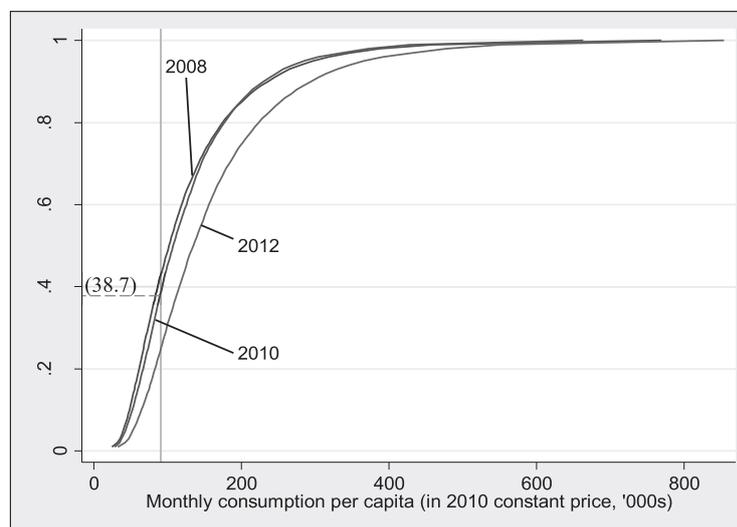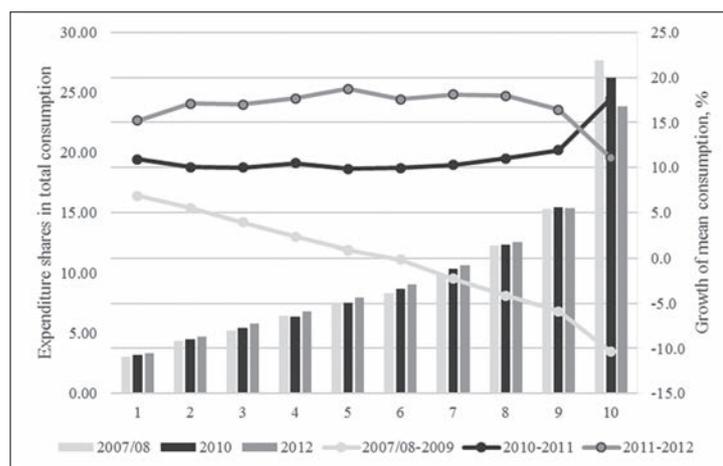

Source: Author's calculation using HSES data, NSO

Left-half of the CDFs has shifted to right-hand side over time, indicating that the absolute poverty reduced. The intersection of the poverty line with the cumulative density function provides the poverty incidence for 2010[7], which is 38.7 per cent. When we use a universal for each year, the poverty incidence is also closer to the official estimate for 2012, but not for 2007/08.

Figure 4 shows the average growth rates of real expenditure per capita (lines with marker, right axis) and consumption expenditure shares by deciles (bar graphs, left axis).

Figure 4. Growth rates of mean consumption and mean expenditure shares in total consumption by deciles, in per cent
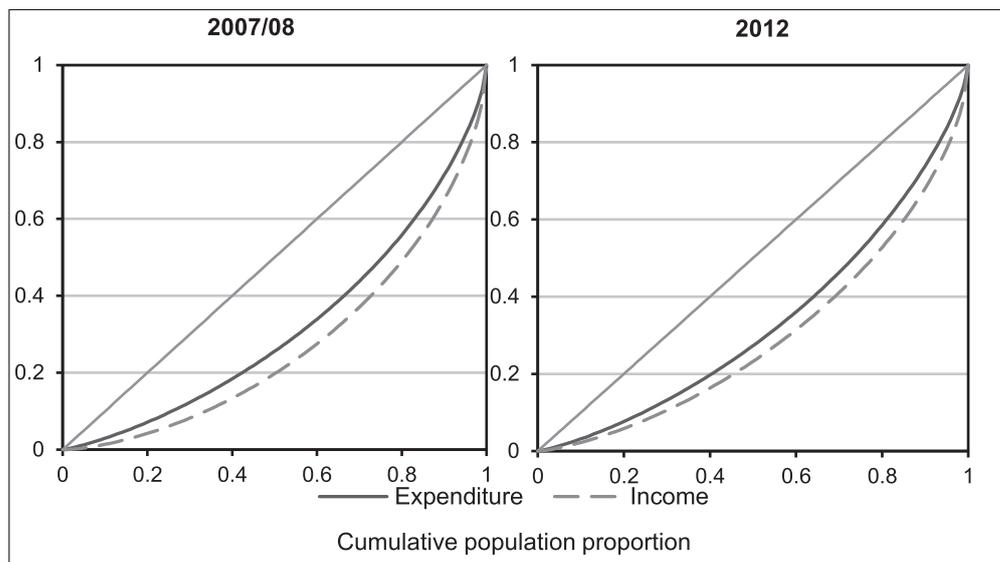

Source: Author's calculation using HSES data, NSO

The decile consumption shares suggest that the level of inequality remains high. The ratio of consumption expenditure in the top decile to the bottom decile of the population declined slightly between 2007/08 and 2012 from 9.2 to 7.2, suggesting that the richest consume on average 7-9 times more than the poorest. The consumption share for the richest has reduced for the period 2007/08-2012, and the consumption share has been transmitted to the middle class (from 4 to 8 deciles). However, the top two deciles of the population still consume about half the goods and services (roughly the same amount as the eight bottom deciles of the population), suggesting a substantial level of income disparity and inequality in the country.

Consumption expenditure of the top three deciles has been reduced during the recession period of 2007/08-2009. However, in the years of mining boom, all deciles have increased their consumption expenditures, and the increase in the consumption expenditure of the richest decile was the highest on average compared to others. The high growth rate of consumption expenditure for the six bottom deciles in both recession and boom periods can be partly explained by the cash transfer scheme.

5.2 The Lorenz curves

The Lorenz curve illustrates income (or expenditure) shares of each percentile group of population receives (or spends), and indicates higher level of inequality when the curve further bowed out from the diagonal. Figure 5 displays the Lorenz curves for 2007/08 and 2012, which are calculated in terms of both income and expenditure.

**Figure 5. Lorentz curves for 2007/08 and 2012**

Source: Author's calculation using HSES data, NSO

The Lorentz curves suggest that income inequality is higher than consumption expenditure inequality in Mongolia. The Lorentz curve has shifted to left-hand side between 2007/08 and 2012, suggesting that inequality, measured in terms of expenditure shares that every percentile of people spends, has declined. However, there is no improvement for the consumption share of the bottom 20 per cent of population. The reduction in inequality is mainly driven by the rise in the consumption shares of the middle class. The curve remains at almost same position for 2010 and 2012, indicating that the inequality has not considerably changed during the booming years.

5.3 Growth incidence curves

We construct the growth incidence curves, showing the annualized growth rate of consumption expenditure for every percentile of expenditure distribution. The curves allow us to assess how consumption at each percentile changes over time. The part of the curve above zero points at the deciles implies that the people at the deciles benefit from the growth.

Figure 6 shows the growth incidence curves, along with growth rate in mean consumption and mean growth rate of the population.

Figure 6. Growth incidence curves for total population, 2007/08-2012
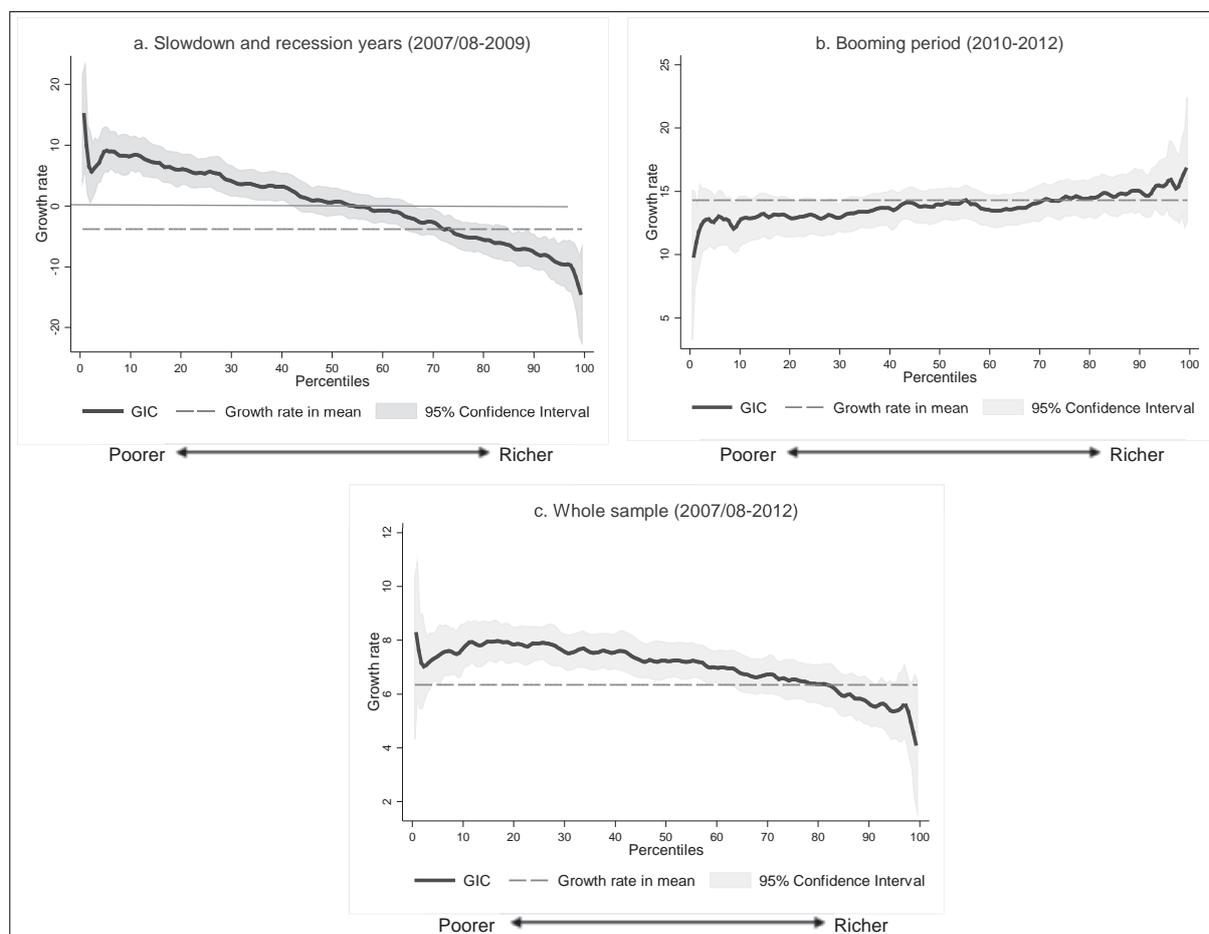
Source: Author's calculations using the data of HSES, NSO, Mongolia

Though the growth incidence curves provide different signals on distributional shifts, they confirm that people in the bottom and middle of the consumption distribution have been benefited from the high economic growth in recent years. Figure 6a shows that the growth rate of mean consumption expenditure per capita was negative, implying that people experienced a decline in their consumption on average during the slowdown and recession period of 2007/08-2009. However, the growth incidence curve is negatively sloped, suggesting the decrease in inequality during this period. For instance, consumption growth rates of the poorer deciles (up to 5th deciles) were positive while the growth rate of the richer deciles (from the 6th to 10th deciles) was negative at the significance level of 5 per cent. In particular, the richest decile's consumption has decreased by more than 15 per cent.

During the booming years (Figure 6b), all groups have benefited from high economic growth, and the mean of the growth incidence curve is very high (around 14 per cent), confirming the decline in poverty. The curve has a slightly positive slope, suggesting that the high growth was not inclusive. However, an overall change in inequality is very small as the growth rates in percentiles are equal to each other (as well as to the mean growth rate) at the significance level of 5 per cent.

On average for 2007/08-2012 (Figure 6c), all groups have experienced positive growth in their consumptions, and the high growth in the poorer deciles confirms the decline in poverty.

The low middle class (from 10th to 50th deciles) experienced a relatively high growth in their consumptions, which is above the mean growth and the growth in the mean consumption at the significance level of 5 per cent. The growth incidence curve has a negative slope, indicating that the economic growth was generally pro-poor in this period. However, there is no improvement in the degree of inclusiveness of growth over time as the growth incidence curve changing the slope from negative (in the slowdown period) to positive (in the booming period).

5.4 Estimates of the rate of pro-poor growth

This section attempts to examine whether the recent economic growth has been pro-poor. Table 3 summarises results of growth calculations, including the rate of pro-poor growth proposed by Ravallion and Chen (2003) for both slowdown and boom periods. All results are calculations of annualized growth rates per capita. The first row shows the growth rates of mean expenditure for the whole population, and the second row presents the growth of median consumption expenditure. The next rows show the mean of the growth rates of expenditure for the whole population (row 3) and the population initially below the poverty line (row 4). In calculating the mean growth rate for the poor with discrete data, the poor is defined as those living below the poverty line at the initial period $t - 1$. Thus, the measure can be interpreted as the mean growth rate for the poorest H_{t-1}%. For this purpose, it is selected as $H_{t-1} = 35.2$% for the period 2007/08-2009 and $H_{t-1} = 38.7$% for the period 2010-2012, which are respectively the poverty headcount ratios in the initial year of the relevant periods. For comparison, the last row shows the growth rate of the real GDP per capita.

Table 3. Rates of pro-poor growth, constant 2010 prices, per cent, per person, per year

Growth indicators	Slowdown 2007/08-2009	Boom 2010-2012	Whole sample 2007/08-2012
Growth rate of mean expenditure per capita	-3.82	14.30	6.34
Growth rate of median expenditure per capita	0.57	13.95	7.21
Mean growth rate of expenditure per capita	0.34	13.78	7.01
Mean growth rate of expenditure per capita of the poor (*Pro-poor growth*)	6.44	12.83	7.66
Growth rate of real GDP per capita	2.31	13.07	7.05

Source: Author's calculations using the data of HSES, NSO, Mongolia

Differences in the growth rates are statistically significant at the 5 per cent level in the slowdown period, confirming that the inequality has been reduced between 2007/08 and 2009. In this period, though real GDP per capita increased at 2.3 per cent on average, the growth rate of mean consumption was negative. However, consumption expenditures for the poor group of the population (up to 50th percentile) have increased in the period. In general, the growth has been pro-poor as the pro-poor growth rate of 6.44 is greater than all other measures of growth rate in the consumption expenditure. The pro-poor growth is higher than the growth of real GDP per capita, implying the poorer benefited more from the growth.

For the booming period, the growth rates are closer to each other (i.e., difference is not statistically significant at the 5 per cent level), but represent a slight increase in inequality. The growth rate of mean expenditure (14.3 per cent) is higher than the pro-poor growth rate of

expenditure (12.8 per cent), implying that the growth was not pro-poor enough in this period. According to growth rates of the whole sample, it seems that the growth has been pro-poor. However, the growth was pro-poor during the slowdown period, but not during the booming period.

6. Conclusion

Mongolia has achieved impressive economic growth over the past ten years. The economy has grown at an average annual rate of 8 per cent on the back of a mining boom since 2000. This paper has examined the economic growth performance from the perspective of its poverty-reducing and distributional characteristics.

The main findings are as follows. First, absolute poverty in Mongolia has fallen in the period 2007/08-2012, and poverty reduction has accelerated in recent boom years. The cash transfer program has played an important role in the poverty reduction. Second, the high economic growth seems to have benefitted all people in the country. Inequality has fallen as the bottom and middle classes of the consumption distribution have benefited more than the richer group. However, the reduction in inequality has stagnated during the economic boom, and there still remains a substantial level of income disparity in the country. For instance, the top two deciles of the population consume about half the goods and services, which is roughly the same amount as the bottom eight deciles of the population. Third, the poorer people have not suffered (in terms of their real consumption) during the economic slowdown period due to safety net programs of the government, including the cash transfer program, while the richer people have been more vulnerable to the economic condition. Finally, even though, in general, growth has been pro-poor for the period of our analysis. However, there is no improvement in the degree of inclusiveness of growth over time as the GIC changing the slope from negative (in the slowdown period) to positive (in the booming period). There is evidence that the rich benefits more from the growth in the booming period.

Though the commodity-based high growth has helped to reduce poverty and inequality, it was not sustainable, equitable and inclusive enough to benefit all in the society. Thus, policy makers need to think about life after the mining boom. Sustaining overall economic growth is a precondition for further poverty reduction and enhancing inclusiveness of the growth. Well-designed policies that stimulate growth and reduce inequality are also important to promoting inclusiveness. In particular, attention should be given to the distributional dimension of growth, and measures should target at raising incomes of people in the bottom deciles of the distribution relative to the average income. To this end, reforms are needed to improve the management of existing social welfare programs in Mongolia.

The analysis conducted in the paper should be constantly updated using more recent data in order to enhance the relevance and significance of the analysis in the policy making.

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[1] There are three main measures of pro-poor growth developed by Kakwani and Pernia (2000), Ravallion and Chen (2003), and Son (2004). Kakwani and Pernia (2000) and Son (2004) definitions are relative measures of pro-poor growth while Ravallion and Chen (2003) measure is the absolute one. In this paper, we use Ravallion and Chen (2003) definition stating that pro-poor growth is growth which reduces poverty.

[2] 'Growth incidence curve' is also a useful tool to analyse pro-poor growth as it shows the impacts of aggregate economic growth over a wide range of the distribution.

[3] The NSO updated the consumption basket to obtain comparable results from 2002/03 and 2007/08 surveys. This effort was for getting a more accurate poverty measure while the usage of new poverty line without adjusting the previous one makes it impossible to compare the estimates.

[4] The poverty estimates in 1995 and 1998 are incomparable with other years because of differences in classifications, definitions, coverage, methodology and sampling error FIDE (1999).

[5] There are some weaknesses in the current programs, including limited beneficiary targeting and programs' fragmentation. Moreover, there is no clear link between transfer and the performance of the underlying mining assets, transfers are unsustainable if commodity prices decline or project investments are delayed, transfer itself causes high inflationary pressures, transfers do not necessarily address the deeper causes of inequality and the cash transfer increases the current consumption rather the saving for future generation.

[6] The weight, which was assigned to each household, corresponds to the inverse of the selection probability and the sampling strategy into account.

[7] The results of poverty incidence slightly differ from the official data on poverty headcount ratio because the official data uses region-specific poverty lines in the calculations. However, the presented result is similar for 2010 and 2012, but not for 2007/08.

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