Millennium Development Goal One: How has Asia Fared?

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Abstract: As poverty remains rampant, the Millennium Development Goals have been established to address what is one of the most chronic challenges to growth and development. With numerous governments and international organizations adopting these eight international goals focused on combating both the income and non-income dimensions of poverty, it is imperative to measure the performance toward and success of the MDG initiative. By exploring the interplay among poverty, growth and inequality, this study evaluates the progress of 90 developing countries in attaining the income poverty target contained in the first MDG (MDG1), focusing on developing Asia. To help inform future, results-based development policies, it also examines whether adopting the MDGs has contributed to income poverty reduction by measuring the growth elasticity of poverty, controlling for growth. Through an achievement index developed by Kakwani in 1993, the study estimates that an annual poverty reduction of around 2.77% between 1990 and 2015 is needed for countries to attain MDG1. Across developing Asia, half of the 22 countries included in the study will definitely attain the target and 46% are "likely" to achieve it. Can such gains in poverty reduction be ascribed to the espousal of the MDGs? The study finds that improvements in poverty elasticity are statistically insignificant in the post-MDG period, implying that the acceleration of poverty reduction has been mainly due to economic growth and not the adoption of the MDGs.

Keywords: Millennium development goals, poverty, economic growth, inequality, developing Asia.

I. INTRODUCTION

In what remains as a persisting development challenge in many economies, combating poverty has been the overarching agenda of many governments and international organizations. The urgency of lifting people out of poverty is in fact widely recognized and reflected in the United Nations Millennium Declaration, which established the Millennium Development Goals (MDGs) in a bid to address the income and non-income dimensions of poverty.

All 193 United Nations member states and at least 23 international organizations adopted these eight MDGs. The first goal (MDG1) focuses on income poverty reduction.[1] It seeks to eradicate extreme poverty and hunger, and promote productive and decent work for all. Specifically, it calls for halving the proportion of the world's people living on less than $1.25 a day by 2015. The threshold was originally set at $1 a day, but was reviewed and later increased to $1.25 a day at 2005 purchasing power parity (PPP) prices. MDG1 also calls for full and productive employment and decent work for all, including women and young people. The MDGs subsequently adopted the target on decent employment after an amendment

of the MDG monitoring framework in 2007. Indicators for this target include the percentage of workers living on less than $1.25 a day or the working poverty rate, and the proportion of family-based workers in the population (ADB 2011). Finally, MDG1 calls for halving the proportion of people suffering from hunger by 2015. This target is measured as the percentage of children below five years of age who are moderately or severely underweight.

The MDGs are largely focused on social outcomes than economic growth, which has often been the path to significant poverty reduction since growth generates more resources and consequently raises incomes. Accelerated growth has been observed in some countries, particularly in East, Southeast, and more recently, South Asia. However, in many others, growth has been slow, highly volatile, or even negative for sustained periods, restraining progress in poverty reduction. At the same time, growth prospects in some economies appear bleak amid incomplete recovery from the 2008 global financial crisis, a still fragile global economy, and the ongoing euro zone crisis.

While economic growth stimulates poverty reduction, rising inequality constrains its impact. Many studies have shown that the pace of poverty reduction also depends on the initial level of inequality and changes in its level (Klasen 2004). Poverty reduction is slower in countries with high initial inequality or those experiencing rising inequality. Reducing inequality could therefore directly abate poverty and increase the poverty impact of growth. In the long term, it could also increase growth and accelerate poverty reduction.

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[1]MDG1 also includes a target on hunger reduction. However, the paper only deals with the target on poverty reduction as MDG1 focuses on extreme poverty.

By exploring the relationship among poverty, growth and inequality, this study examines the performance of countries toward achieving MDG1, as well as the contribution of the MDGs in encouraging poverty reduction. It has two main objectives. First, it assesses the progress of developing countries around the world in reducing poverty and determines which countries are on track to realize the MDG1 targets by 2015. Second, it examines the extent to which the Millennium Declaration of 2000 has contributed to poverty reduction and probes whether the adoption of the MDGs has accelerated or decelerated progress in poverty reduction across developing countries. By controlling for the impact of growth, the study also intends to capture poverty impacts before and after countries made commitments to achieving the MDG targets in 2000.

Following the introduction, Section II explains the approach and methodology the study uses. The study obtained poverty estimates from the World Bank's PovcalNet database. Section III presents the estimates of the average standard of living of countries worldwide using per capita gross domestic product (GDP) at 2005 PPP. Section IV discusses trends in economic growth and inequality as factors that significantly influence poverty reduction. Section V compares poverty levels across countries, particularly between developing countries in Asia and the Pacific and developing countries outside of the region. Section VI investigates whether poverty reduction has accelerated or decelerated following the adoption of the MDGs, while Section VII tracks which countries are likely to achieve or miss the MDG target on poverty reduction. Section VIII concludes and provides recommendations.

II. APPROACH AND METHODOLOGY

This study covers 90 developing countries, accounting for more than 5.3 billion people. The study categorized the countries, selected based on the availability of the data required to perform a robust analysis, into six mutually exclusive regions (Table **1**). The countries were further classified as the Asian Development Bank's (ADB) developing member countries (DMCs) or non-DMCs, where DMCs correspond to developing Asia. Of the 90 countries, 26 represent the DMCs in which 67% of the total developing world population resides. The remaining 64 developing countries are classified as non-DMCs.

Ideally, poverty analysis is performed using unit-record micro data from household income and expenditure surveys. These surveys provide detailed information on the socioeconomic and demographic characteristics of households and individuals living in these households, including their income and/or expenditures. However, it has not been possible to obtain micro data for many countries. Thus, this study employs poverty estimates obtained from the World Bank's PovcalNet program, which provides poverty estimates for any given poverty line at 2005 PPP. The main limitation of PovcalNet is that it does not use the micro-household data.

The study obtained poverty estimates, on the other hand, from income and expenditure decile shares by fitting a Lorenz function proposed by Kakwani (1980). The fitted Lorenz curve readily provides the estimates of the Gini index. The study uses the PovcalNet poverty and inequality estimates to evaluate MDG1 performance. While the PovcalNet estimates were not

Table 1: Number of Countries and Population Covered by the Study

Region	Number of countries	Population (million)
East Asia and the Pacific	11	1,749
Europe and Central Asia	23	423
Latin America and Caribbean	19	550
Middle East and North Africa	6	216
South Asia	9	1,782
Sub-Saharan Africa	22	582
All developing countries	90	5,302
Developing Member Countries	26	3,575
Non Developing Member Countries	64	1,727

Source: Author's calculations.

as accurate as the micro-household data estimates, they are reasonably sufficient to perform robust poverty analysis.

This study assesses progress in poverty reduction during the pre-MDG and post-MDG decades. The pre-MDG years span 1990–2000 and the post-MDG 2000–2010. The study looks at the trends in each period to measure a country's poverty reduction performance. This requires poverty estimates for each year within the pre- and post-MDG decades. But this information is not available because household surveys are not conducted every year. Countries also conduct household surveys in different years.

Given these limitations, the study measures the performance in poverty reduction using three survey years: (i) s_{i1} the survey year for the ith country closest to 1990; (ii) s_{i2} the survey year for the ith country closest to 2000; and (iii) s_{i3} the survey year for the ith country closest to 2010.[2] Then $S_{i1}=s_{i2}-s_{i1}$ and $S_{i2}=s_{i3}-s_{i2}$ are the numbers of ith country's survey years in the pre- and post-MDG decades. S_{i1} and S_{i2} will be different for different countries, but the study ensures that the differences across countries are small. To make robust comparisons of performance between the two decades, the study calculates the annualized performance in poverty reduction for each decade.

In conducting this study, it is important to point out the significant characteristics of poverty and its measures. Poverty measures such as headcount ratio have lower and upper limits. Poverty cannot be reduced below zero. Another important characteristic is that as poverty reaches its lower limit, the incremental reduction in poverty will be much harder and, therefore, should be deemed as a greater achievement. For instance, reducing the headcount ratio from 10% to 5% will be harder than reducing it from 40% to 35%. Similarly, reducing poverty from 5% to 0% will be harder still. Using an axiomatic approach, Kakwani (1993) derived an achievement index that accommodates the view that a further increase in the standard of living of a country when it is already at a higher level signifies a greater achievement than that of another country with an equal increase but that is starting from a lower base. The achievement index is then derived as the difference between the values of achievement in any two periods.

Following Kakwani (1993), this study estimates the annual performance of the ith country in achieving poverty reduction in the pre- and post-MDG decades as:

$$\varphi_{ipre-MDG} = 100 \times \frac{ln(P_{i2}) - ln(p_{i1})}{S_{i1}} \tag{1}$$

and

$$\varphi_{ipost-MDG} = 100 \times \frac{ln(P_{i3}) - ln(p_{i2})}{S_{i2}} \tag{2}$$

where P_{i1}, P_{i2}, and P_{i3} are the poverty measures in the ith country in the survey years 1, 2, and 3.

To illustrate these estimations, the study calculates the annual performance of achieving poverty reduction in 10 years from 50% to 45% as equal to 1.05%, whereas that from 20% to 15% in 10 years as equal to 2.9%. In this case, reducing poverty from 20% to 15% represents a much better performance compared to poverty reduction from 50% to 45%. Thus, the proposed index takes into account the initial conditions prevailing in a country.

MDG1 calls for halving the percentage of poor people as measured from 1990 and by 2015. To achieve this target, the annual performance index for achieving poverty reduction should be equal to −2.77%. As such, it can be said that the ith country is deemed to be on track for achieving MDG1 if its estimated annual performance index is less than −2.77. Mathematically,

- the ith country is on track in the pre-MDG decade *if* $\varphi_{ipre-mdg} < -2.77$.

- the ith country is on track in the post-MDG decade *if* $\varphi_{ipost-mdg} < -2.77$.

Based on the above, countries can be classified into four categories:

➢ **Achievers** are countries on track in pre-MDG decade and remain on track in the post-MDG decade.

➢ **Likely achievers** are countries not on track in the pre-MDG decade but that are on track in the post-MDG decade.

➢ **Unlikely achievers** are countries on track in the pre-MDG decade but not on track in the post-MDG decade.

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[2]Table A.1 in the Appendix presents three survey years for 90 developing countries used in this study.

➢   ***Non-achievers*** are countries not on track in both pre- and post-MDG decade.

To determine whether the percentage of countries on track to meet the MDG1 has improved significantly between the pre- and post-MDG decades, the study applies the following tests:

To begin, variables are defined as follows:

$\hat{\pi}_1$ = % of countries on track in the pre-MDG decade;

$\hat{\pi}_2$ = % of countries on track in the post-MDG decade;

n_1 = Number of countries in pre-MDG decade;

and n_2 = Number of countries in post-MDG decade.

In this case, the null hypothesis that there is no significant difference in the percentage of countries on track between the pre- and post-MDG decades can be tested by the *t*–value:

$$t = \frac{\hat{\pi}_2 - \hat{\pi}_1}{\sqrt{\dfrac{\hat{\pi}_1(100 - \hat{\pi}_1)}{n_1} + \dfrac{\hat{\pi}_2(100 - \hat{\pi}_2)}{n_2}}}$$

Given this, the study can conclude that the difference is significant at the 5% level of significance if the absolute value of *t* statistics is greater than 1.96. The above analysis will tell us whether there has been significant progress on MDG1.

To further determine whether the MDG initiative has contributed to a significant acceleration (or deceleration) in poverty reduction in the post-MDG decade, the study employs the following methodology:

Suppose φ_{it} is the *i*th country's performance index in the *t*th decade, where *t*=1 in the post-MDG decade and *t*=0 in the pre-MDG decade. Given this, the following two regression models can be used:

Regression Model 1: $\varphi_{it} = \alpha_0 + \beta t + u_{it}$

Regression Model 2: $\varphi_{it} = \alpha_1 + \beta_1(1 - t) + \epsilon_{it}$

where u_{it} and ϵ_{it} are the stochastic error terms with their mean equal to 0. When $t = 0$, $\varphi_{it} = \varphi_{ipre-MDG}$ and when $t = 1$, $\varphi_{it} = \varphi_{ipost-MDG}$. Substituting *t*=0 and *t*=1 in each of the two models gives the following three equations:

$$E(\varphi_{ipre-MDG}) = \alpha_0 \qquad (3)$$

$$E(\varphi_{ipost-MDG}) = \alpha_0 + \beta \qquad (4)$$

$$E(\varphi_{ipost-MDG}) = \alpha_1 \qquad (5)$$

where $\beta_1 = -\beta$

Subtracting equation (3) from equation (4) gives

$$E(\varphi_{ipost-MDG}) - E(\varphi_{ipre-MDG}) = \beta \qquad (6)$$

Therefore, the estimated regression coefficients, α_0 and α_1, directly provide the expected performance in poverty reduction in the pre- and post-MDG decades, respectively. Similarly, the regression coefficient β directly provides the difference in performance in the same period. The two regression models also provide the *t*–values for the estimated coefficients, which allows for the testing of the hypothesis on whether the performance in poverty reduction in the post-MDG decade is significantly better or worse than in the pre-MDG decade. This methodology can also be applied to test the hypothesis on whether performance in economic growth in the post-MDG period has been significantly better or worse than in the pre-MDG decade.

III. AVERAGE STANDARD OF LIVING ACROSS COUNTRIES

This section provides a comparative analysis of average standard of living across 90 developing countries during the pre- and post-MDG decades. Standard of living, generally expressed in degree of material wealth of a society, is usually measured by the aggregate consumption of essential goods and services. Gains in growth and/or poverty reduction should be thus reflected in improvements in the standard of living.

The study uses per capita GDP at 2005 PPP to measure the average standard of living. This measure is widely used to assess a country's productive capacity. Since the measure is based on 2005 constant PPP dollars, its value is comparable across countries and over time. Table **A2** in the Appendix presents monthly per capita GDP at 2005 PPP for 26 DMCs included in the study. Aggregated per capita GDP is also available for individual countries in six regions, DMCs and non-DMCs, and all developing countries. The aggregation was performed using the weighted average method with weights equal to individual countries' population. Using population weights is appropriate since larger countries should be assigned a

heavier weight when per capita GDP is aggregated across regions.

Table **2** presents the aggregate results. Based on the table, all developing countries enjoyed an average standard of living equivalent to $246 per month in the early 1990s, which increased to $305 in the early 2000s and to $430 in the late 2000s. Overall, the developing world has enjoyed an increase in average standard of living during the pre- and post-MDG decades.

South Asia and sub-Saharan Africa are the poorest regions, but South Asia has fared much better in increasing its average standard of living than Africa. Eastern Europe and Central Asia and Latin America and the Caribbean are the richest, enjoying more or less a similar average standard of living. The gap between these two richest and the two poorest regions is strikingly high.

The disparity in the standard of living between DMCs and non-DMCs is also high. However, DMCs have performed better than their non-DMC counterparts in the past two decades, narrowing the gap between the two in 2010.

A number of studies support the view that per capita GDP within the industrialized market economies has tended to converge over the last century, especially after the World War II (Kormendi and Meguire 1985; Abramovitz 1986; Baumol 1986). These studies led to the convergence hypothesis, which states that as a country becomes richer, it becomes harder for it to grow faster. This hypothesis is clearly important because it implies that poorer countries should be growing faster than the richer ones. If the hypothesis

holds, then the disparity in the standard of living between countries should decrease over time. The study tests this hypothesis by using Theil's index, which measures the disparity in per capita GDP between countries. For the convergence hypothesis to hold, the disparity index should decrease.

Table **3** shows that the disparity index for all developing countries has increased from 5.6% in the early 1990s to 10.7% in the early 2000s and to 12.4% in the late 2000s. These results have one important implication: this study's findings do not support the convergence hypothesis. In fact, there is evidence of divergence in the average standard of living measured by per capita GDP. This means that poorer countries do not necessarily grow faster than richer countries. As such, poorer countries may need to exert additional effort and/or require more external support to achieve more rapid improvement in their standards of living.

The convergence hypothesis also does not seem to hold for South Asia. In East Asia and the Pacific, however, the results are somewhat different because the disparity index declined sharply in the early 2000s, followed by a slight increase. The rapid growth in the People's Republic of China has primarily contributed to the decline in the disparity index for East Asia and the Pacific.

IV.   ECONOMIC GROWTH AND INCOME INEQUALITY

Achieving the MDG1 targets depends on the rate of economic growth and distribution of the benefits from growth, which can be measured by the change in income inequality. Both factors significantly influence poverty; focusing on growth alone, therefore, will be

Table 2:   Per Capita GDP at 2005 Purchasing Power Parity

Region	early 1990s	early 2000s	late 2000s
East Asia and the Pacific	165	262	452
Europe and Central Asia	637	690	978
Latin America and Caribbean	631	694	824
Middle East and North Africa	374	401	509
South Asia	106	161	233
Sub-Saharan Africa	135	141	171
All developing countries	246	305	430
Developing Member Countries	142	218	344
Non Developing Member Countries	466	490	609

Source: Author's calculations.

Table 3:   Disparity in Per Capita GDP Across Countries

Region	early 1990s	early 2000s	late 2000s
East Asia and the Pacific	6.3	3.1	3.5
Europe and Central Asia	8.6	10.0	8.3
Latin America and the Caribbean	5.1	5.0	4.7
Middle East and North Africa	7.0	7.9	8.6
South Asia	1.7	2.4	2.9
Sub-Saharan Africa	35.9	32.8	33.8
All developing countries	5.6	10.7	12.4
Developing Member Countries	7.2	5.9	8.8
Non Developing Member Countries	33.9	36.2	39.2

Source: Author's calculations.

insufficient to achieve maximum poverty reduction. To understand how poverty can be reduced, the study analyzes the performance of countries on economic growth and the change in income inequality. The study begins by posing a question about whether there has been a significant acceleration or deceleration of per capita GDP growth in the pre- and post-MDG decades; performance is therefore measured as annual per capita GDP growth for the two periods.

To determine whether there has been a significant acceleration or deceleration in poverty reduction since the adoption of the MDGs in 2000, the study calculates the *t*–values of the difference in annual growth rates between the pre- and post-MDG decades. The calculations of *t*–values use the regression models 1 and 2 presented in Section II. If the absolute *t*–value is greater than 1.96, it implies the 5% level of significance. This means that the hypothesis of no change in performance in the growth rate can be true only with a probability of less than 0.05. The significance implies that the hypothesis of no change in performance should be rejected in favor of the alternative hypothesis of significant acceleration if *t*–value is positive or of significant deceleration if *t*–value is negative. Studies commonly use the 5% level of significance, but some studies also use the 1% level of significance, in which case the absolute *t*–value is greater than 2.58. The 1% level could be deemed as high significance level.

Table **4's** results are striking. The average growth rates are positive and highly significant for all regions in both the pre- and post-MDG decades. All developing countries grew at 3.8% annually in the pre-MDG decade, and accelerated to 5.9% annually in the post-

MDG decade. Growth in developing countries has been broad-based across regions in the past two decades or so. As expected, East Asia and the Pacific is the fastest growing region, with average annual growth of 8.7% during the post-MDG decade. South Asia is the second fastest, with annual growth of 5.8% in the post-MDG period. Even sub-Saharan Africa has begun to grow, with per capita GDP growth almost 3% in the post-MDG decade. However, Eastern Europe and Central Asia grew just 1.2% in the pre-MDG decade as the region transitioned in the post-Soviet years; the region's growth picked up in the post-MDG period, however, with growth of 5.5% a year. The DMCs have enjoyed much superior growth than non-DMC counterparts in both the pre- and post-MDG decades.

Economic growth accelerated significantly in the post-MDG decade; faster growth was broad-based across all regions. The *t*–values for the difference in performance presented in the last column of Table **4** are all greater than 1.96. The *t*–value for all developing countries is 4.68, higher than a highly significant level of 1%. Therefore, it can be concluded with high confidence that the growth performance of developing countries has accelerated in the post-MDG decade. People in the developing world have not previously enjoyed such high growth. This suggests a significant improvement in average standard of living in the new millennium. However, the growth rates were mostly low for developing countries or negative for some countries in the 1980s compared with the growth rates in the 1990s and 2000s. The 1980s were largely perceived as the lost decade for a large number of developing countries, particularly those in sub-Saharan Africa, and Latin America and the Caribbean.

Table 4:   Average Annual Performance in Per Capita GDP at 2005 Purchasing Power Parity

Region	Pre-MDG decade	t-value	Post-MDG decade	t-value	Difference b/w post-and pre-MDG	t-value
East Asia and the Pacific	6.07	7.1	8.66	9.88	2.59	2.11
Europe and Central Asia	1.15	2.2	5.54	10.66	4.39	5.93
Latin America and Caribbean	1.19	4.1	2.16	7.84	0.97	2.42
Middle East and North Africa	2.04	5.6	3.26	9.82	1.22	2.47
South Asia	3.88	8.1	5.83	13.49	1.94	3.01
Sub-Saharan Africa	1.00	2.7	2.93	8.59	1.93	3.85
All developing countries	3.84	11.9	5.94	19.14	2.10	4.68
Developing Member Countries	5.10	9.8	7.25	14.35	2.14	2.95
Non Developing Member Countries	1.13	5.0	3.23	14.97	2.10	6.68

Source: Author's calculations.

These findings raise two related questions. Why has there been such significant improvement in growth in the post-MDG period, and has the adoption of the MDGs, borne out through the MDG Summit in 2000 and subsequent commitments by various international agencies to promote the MDGs, contributed to such significant improvement in performance? These questions will be addressed later. For now, it is worth pointing out that since the 2008 global financial crisis, global growth rates have been slowing. While its duration cannot be specified, it is clear that the long–term economic downturn will hurt the achievement of the MDGs, including MDG1.

GDP per capita is widely used to assess the economic performance of countries. The growth rate in real per capita GDP has become a standard economic indicator used by economists, politicians, and business analysts in economic debates. As GDP measures the total output produced in the economy, GDP per capita is the population-adjusted total output that is produced by the economy's workforce. The output so produced is distributed to the work force in the form of market income. The larger GDP per capita, the greater the income or consumption of the population. However, the more appropriate measure of standard of living is the per capita consumption or income enjoyed by the population. GDP per capita includes many factors that do not contribute to people's welfare. For instance, it includes investment that does not directly contribute to people's welfare in the current period. Consumption or income per capita is a more direct measure of people's average standard of living. Poverty and inequality are

also measured based on per capita consumption/income.

How then have countries performed when the standard of living is measured by per capita consumption/income? Table **5** attempts to answer this question and presents the annual performance in per capita income/consumption by different regions, DMCs and non-DMCs.

The table shows that the growth rates in per capita consumption/income are generally lower than those observed in per capita GDP. For instance, GDP per capita in South Asia grew at annual rates of 3.9% and 5.9% during the pre- and post-MDG decades while per capita consumption/income only grew at a rate of 1.4% and 2.6% in the same periods. This wide gap between the two growth rates signifies that output growth in economies has not necessarily translated into growth in people's actual consumption. Thus, per capita actual consumption is a more appropriate measure of average standard of living.

The *t*–values presented in the last column of Table **5** show that growth performance in per capita consumption has significantly accelerated only in three regions since MDG implementation: Eastern Europe and Central Asia, Latin America and the Caribbean, and South Asia. For the remaining three regions, there is no significant acceleration or deceleration of performance in the average standard of living in the post-MDG decade. There is also no evidence of significant acceleration of average standard of living

Table 5:   Average Annual Performance in Per Capita Income/Consumption at 2005 Purchasing Power Parity

Region	Pre-MDG Decade	t–value	Post-MDG Decade	t–value	Difference b/w post- and pre-MDG	t–value
East Asia and the Pacific	6.24	9.48	5.85	8.66	-0.39	-0.41
Europe and Central Asia	-0.23	-0.25	7.45	8.29	7.68	6.01
Latin America and Caribbean	1.18	1.91	2.89	4.92	1.71	2.01
Middle East and North Africa	1.07	1.09	-0.46	-0.51	-1.53	-1.15
South Asia	1.44	4.06	2.61	8.15	1.17	2.44
Sub-Saharan Africa	0.63	1.01	1.74	2.98	1.11	1.3
All developing countries	2.99	8.5	3.87	11.5	0.89	1.82
Developing Member Countries	4.07	7.18	4.25	7.76	0.18	0.23
Non Developing Member Countries	0.66	1.45	3.10	7.12	2.43	3.85

Source: Author's calculations.

measured by per capita consumption/income in the DMCs, which is in sharp contrast to their performance in per capita GDP.

As pointed out earlier, the growth rate in real per capita GDP is widely used to assess countries' economic performance. However, it can give a misleading evaluation of countries' performance in improving standards of living.

There is general consensus that East Asia and the Pacific has achieved impressive economic growth, but inequality in the region remains pervasive and even rising, threatening to reverse achievements in growth and poverty reduction. Is this simply perception or based on evidence? The study evaluates how East Asia and the Pacific has performed in inequality compared with other regions using the Gini index, the most commonly used measure of income inequality.

Table **6** illustrates that in the early 1990s, Asia and the Pacific, which largely consists of East Asia, the Pacific, and South Asia, had much lower inequality than other regions. While the average Gini index for Latin America and the Caribbean was 54.5**%,** the corresponding figure for South Asia was only 30.9%. Sub–Saharan Africa had an average Gini index of 44.9%. The DMCs as a whole had an average Gini index of only 32.1% in the early 1990s, while the Gini index for their non-DMC counterparts averaged at 45.3% during the same period. However, the gap in inequality between DMCs and non-DMCs has narrowed considerably in the late 2000s. Towards the end of that decade, the average Gini index for the DMCs is 35.1% and 43.5% for non-DMCs. In general, DMCs are still enjoying a much lower level of inequality compared to the non-DMCs. The level of inequality among DMCs is not yet pervasive as has been

Table 6:   Gini Index

Region	early 1990s	early 2000s	late 2000s
East Asia and the Pacific	32.9	35.9	38.0
Europe and Central Asia	38.1	34.9	35.3
Latin America and Caribbean	54.5	56.5	51.2
Middle East and North Africa	37.9	38.2	35.9
South Asia	30.9	32.7	32.4
Sub-Saharan Africa	44.9	42.4	44.3
All developing countries	36.4	37.7	37.9
Developing Member Countries	32.1	34.5	35.1
Non Developing Member Countries	45.3	44.5	43.5

Source: Author's calculations.

perceived. However, inequality in DMCs has been on the rise in recent decades.

How significant is the rising inequality in DMCs compared with their non-DMC counterparts? The growth rates in Table **7** provide the answer; the table shows growth rates in Gini index by different regions along with their *t*–values. The *t*–values tell us whether or not the growth rates in the Gini index are statistically significant.

In the pre-MDG decade, inequality in DMCs increased at an annual rate of 0.9%, which, statistically, is highly significant. The annual rate of decline in inequality, however, has slowed to only 0.3%— albeit a statistically insignificant level. In contrast, inequality in non-DMCs has been on the decline in both the pre- and post-MDG decades, with the rates of decline not statistically significant at the 5% significance level. Should we be concerned about the increasing inequality in DMCs? Since the rate of increase in inequality has significantly slowed in the post-MDG decade (as indicated by the *t*–value of –2.17), there should be less concern for inequality in DMCs as compared to non-DMCs but continuous effort is needed to reduce inequality.

V.   COMPARISONS OF POVERTY ACROSS COUNTRIES

After examining the pace of growth and patterns of inequality, which both affect poverty reduction, the study explores the trends in poverty across countries. International comparison of poverty is based on the two international poverty lines of $1.25 and $2 a day. Tables **8** and **9** provide a comparative analysis of poverty across regions using the two international poverty lines. Between the early 1990s and late 2000s, the proportion of population in developing countries who were living below $1.25 a day fell from 43% to 20.8%, while the corresponding figure based on the $2 a day poverty line dropped from 63.1% to 41.5%. As such, there has been a rapid reduction in poverty in the developing world during the past two decades.

While the percentage of poor is much higher in DMCs than in non-DMCs, DMCs have enjoyed a greater reduction in poverty than their non-DMC counterparts during the past two decades. Among the DMCs, South Asia is the poorest region, where 30.3% of the population is living below the poverty line of $1.25 per day in 2010. In contrast, the percentage of population living in poverty in Eastern Europe and Central Asia is only 0.4% and 5.7% in Latin America and the Caribbean. Among all developing countries, sub-Saharan Africa is the world's poorest region, with poverty incidence of 49.3% around 2010. The results suggest that the developing world is highly polarized in its poverty levels: countries in South Asia and sub-Saharan Africa have large incidence of poverty, while those in Eastern Europe and Central Asia, Latin America and the Caribbean, and Middle East and North Africa have quite low incidence of poverty. Countries in East Asia and the Pacific had a high incidence of poverty in the early 1990s, but poverty reduction in these countries has since been remarkable such that, in 2010, they had reflected a low incidence of poverty, leveling at 13.4%.

Table 7:   Average Annual Growth Rates in the Gini Index

Region	Pre-MDG Decade	t–value	Post-MDG Decade	t–value	Difference b/w post- and pre-MDGs	t–value
East Asia and the Pacific	1.14	5.40	0.47	2.18	-0.7	-2.21
Europe and Central Asia	-0.71	-1.68	0.01	0.02	0.7	1.20
Latin America and Caribbean	0.47	2.65	-1.19	-7.02	-1.7	-6.76
Middle East and North Africa	0.33	0.77	-0.76	-1.97	-1.1	-1.89
South Asia	0.50	1.35	0.17	0.5	-0.3	-0.67
Sub-Saharan Africa	-1.18	-2.06	0.53	1.00	1.7	2.19
All developing countries	0.46	3.02	0.12	0.80	-0.3	-1.62
Developing Member Countries	0.85	4.64	0.30	1.68	-0.6	-2.17
Non Developing Member Countries	-0.39	-1.53	-0.26	-1.08	0.1	0.36

Source: Author's calculations.

Table 8:   Percentage of Poor (%) at $1.25 a Day Poverty Line

Region	early 1990s	early 2000s	late 2000s
East Asia and the Pacific	55.3	27.8	13.4
Europe and Central Asia	3.0	2.2	0.4
Latin America and Caribbean	11.4	11.4	5.7
Middle East and North Africa	3.1	3.2	3.2
South Asia	51.8	42.4	30.3
Sub-Saharan Africa	57.2	53.8	49.3
All developing countries	43.0	30.0	20.8
Developing Member Countries	53.3	34.0	21.7
Non Developing Member Countries	21.4	21.5	18.9

Source: Author's calculations.

Table 9:   Percentage of Poor (%) at $2 a Day Poverty Line

Region	early 1990s	early 2000s	late 2000s
East Asia and the Pacific	75.1	52.2	30.4
Europe and Central Asia	10.3	7.8	2.1
Latin America and Caribbean	20.9	20.8	10.8
Middle East and North Africa	17.5	16.8	14.5
South Asia	81.7	75.0	64.7
Sub-Saharan Africa	76.1	74.3	71.2
All developing countries	63.1	52.8	41.5
Developing Member Countries	77.2	61.9	47.3
Non Developing Member Countries	33.3	33.6	29.5

Source: Author's calculations.

Overall, it can be concluded that poverty rates in DMCs are considerably higher than the average for both the developing world as a whole and the non-DMCs at both the $1.25 and $2 a day poverty line.

Apart from determining the percentage level of poverty, another question commonly raised is how many people are going in or coming out of poverty? To investigate this question, this study calculates the number of poor, which is the product of the incidence of poverty and population, such that the change in the number of poor will depend on the rate of poverty reduction and population growth. The higher the country's population growth, the more difficult it will be to reduce the number of people suffering from poverty. Tables **10** and **11** show the estimated number of poor based on the $1.25 and $2 a day poverty lines for the regions, DMCs, and non-DMCs.

The estimates show that the number of poor people in developing countries has been declining in the past two decades. A study by the World Bank also showed that both the number and share of the population living on less than $1.25 had declined rapidly between 1990 and 2010. The number of poor in the developing world annually declined by 48.2 million annually in the pre-MDG decade and 55.2 million in the post-MDG decade.

Results also reveal that most of the progress has been concentrated among the extreme poor, who make $1.25 per day. Progress has not been impressive for the poor, who make less than $2 per day. The number of poor making less than $2 per day declined 16.8 million annually in the pre-MDG decade. This accelerated to 58.7 million annually in the post-MDG decade. This suggests that poverty reduction strategies helped mostly those in extreme poverty.

Table 10: Number of Poor (Million) at $1.25 a Day Poverty Line

Region	early 1990s	early 2000s	late 2000s	Change in number of poor (annual)	
				Pre-MDG decade	Post-MDG decade
East Asia and the Pacific	933	513	234	-50.8	-40.7
Europe and Central Asia	13	9	2	-0.4	-1.2
Latin America and Caribbean	49	56	32	0.8	-3.4
Middle East and North Africa	5	6	7	0.1	0.1
South Asia	620	613	540	-0.8	-12.0
Sub-Saharan Africa	235	272	287	4.7	2.3
All developing countries	1,859	1,470	1,101	-48.2	-55.2
Developing Member Countries	1,559	1,132	775	-55.2	-54.2
Non Developing Member Countries	297	338	326	5.0	-1.9

Source: Author's calculations.

Table 11: Number of Poor (Million) at $2 a Day Poverty Line

Region	early 1990s	early 2000s	late 2000s	Change in number of poor (annual)	
				Pre-MDG decade	Post-MDG decade
East Asia and the Pacific	1,267	962	531	-36.9	-62.9
Europe and Central Asia	43	33	9	-1.3	-3.8
Latin America and Caribbean	91	103	60	1.4	-6.0
Middle East and North Africa	31	33	31	0.3	-0.2
South Asia	978	1,085	1,153	13.2	11.1
Sub-Saharan Africa	312	375	415	7.9	6.0
All developing countries	2,727	2,592	2,199	-16.8	-58.7
Developing Member Countries	2,259	2,062	1,690	-25.4	-56.6
Non Developing Member Countries	464	529	509	8.0	-2.9

Source: Author's calculations.

As would be expected, the progress in poverty reduction is not uniform across regions. For instance, in sub–Saharan Africa, the number of poor has been increasing in both pre- and post-MDG decades. It is also lamentable to find that in South Asia the number of poor living on less than $2 a day has been increasing. The main reason for this could be that the rate of population growth in South Asia is higher than its rate of poverty reduction for those living on less than $2 a day. Since the rate of poverty reduction is higher among the poor living on less than $1.25 a day, the study finds that the number of extremely poor has been declining in both pre-and post-MDG decades, but the rate of reduction is much higher in the post-MDG decade. This issue is further analyzed in the next section.

Table **10** reveals that more than 70% of the population in extreme poverty with per capita income less than $1.25 a day lives in DMCs. Thus, developing Asia is still home to the majority of the world's poor. In the late 2000s, 7 or 8 out of 10 poor people resided in developing countries in South Asia or East Asia and the Pacific, irrespective of the poverty lines. Given such a high percentage of poor in DMCs, international development agencies such as ADB will continue to play a major role in reducing the world poverty. As mentioned earlier, DMCs enjoy much higher economic growth compared to their non-DMC counterparts. As such, policy measures in DMCs seeking to ensure that growth in these countries is sustainable and also pro-poor are called for.

VI. Has Poverty Reduction Accelerated or Decelerated in Post-MDG Decade?

In this section, the study examines whether the MDG initiative has contributed to a significant acceleration (or deceleration) in poverty reduction in the post-MDG decade. To test this hypothesis, the study determines the *t*–values of the difference in annual performance in poverty reduction between the post- and pre-MDG decades. It then performs the calculations of *t*–values using regression models 1 and 2 presented in Section II.

Tables **12** and **13** present the empirical results on progress in reducing the percentage of poor based on $1.25 and $2 a day poverty lines, respectively. Results demonstrate that in developing countries, the percentage of extremely poor living on less than $1.25 a day declined at an annual rate of 5.1% in the pre-MDG decade. Since the *t*–value for the estimate is -4.4, which is highly significant, it can be said with confidence that the incidence of poverty was already declining even before the MDGs Declaration. A related question then is whether the MDG initiative has further accelerated the already impressive performance in poverty reduction. In the post-MDG decade, the percentage of poor declined at an annual rate of 12.0%, with the *t*–value of –8.1 that is even more highly significant. The rate of poverty reduction has accelerated by 6.9 percentage points, with the *t*–value equal to –3.2. As such, the study can conclude that there has been a significant acceleration of progress in reduction in extreme poverty in the post-MDG decade. The same result holds for performance in poverty based on $2-a-day poverty line (Table **13**).

Of the six regions, East Asia and the Pacific has enjoyed the highest rate of poverty reduction. The percentage of poor living on $1.25 a day declined at an annual rate of 10.2% in the pre-MDG decade and 14.3% in the post-MDG decade. This could be deemed as an unprecedented performance in poverty reduction. Among the DMCs, South Asia is the poorest region, but its rate of poverty reduction—albeit not as spectacular as East Asia and the Pacific's—has also been significant in both pre- and post-MDG decades. The rate of poverty reduction has accelerated by 3.8 percentage points, with the *t*–value of –3.8 that is highly significant. Therefore, the progress in poverty reduction in South Asia has significantly accelerated in the post-MDG decade.

Unlike South Asian countries and the rest of the developing world, sub–Saharan African countries have not experienced accelerated improvement in poverty reduction in the post-MDG decade. In fact, progress in poverty reduction in these countries has been the world's slowest, making it unlikely for the region to achieve the progress urgently needed to meet the MDG1 targets.

DMCs have been able to achieve a much better performance in poverty reduction than the non-DMCs. This is mainly due to two factors: (i) the outstanding performance of East Asian countries, which includes the Peoples Republic of China, and (ii) the low initial levels of poverty in Central Asia, where a small reduction in poverty amplifies its performance.

The main conclusion emerging from this section is that, with the exception of sub-Saharan African countries, most developing countries have experienced

Table 12: Average Annual Performance in the Headcount Ratio (Based on $1.25 a Day Poverty Line)

Region	Pre-MDG Decade	t-value	Post-MDG Decade	t-value	Difference b/w pre- and post-MDG	t-value
East Asia and the Pacific	-10.2	-4.94	-14.3	-6.77	-4.1	-1.40
Europe and Central Asia	-6.5	-0.93	-51.8	-6.27	-45.3	-4.25
Latin America and Caribbean	1.5	0.93	-9.2	-6.09	-10.7	-4.86
Middle East and North Africa	-4.8	-1.28	-2.8	-0.82	2.0	0.40
South Asia	-1.9	-2.50	-5.6	-8.39	-3.8	-3.75
Sub-Saharan Africa	-1.8	-1.85	-1.9	-2.10	-0.1	-0.08
All developing countries	-5.1	-3.30	-12.0	-8.10	-6.9	-3.20
Developing Member Countries	-6.4	-4.40	-10.2	-7.20	-3.8	-1.90
Non Developing Member Countries	-2.4	-0.90	-15.7	-4.60	-13.3	-2.70

Source: Author's calculations.

Table 13: Average Annual Performance in the Headcount Ratio (Based on $2 a Day Poverty Line)

Region	Pre-MDG Decade	t-value	Post-MDG Decade	t-value	Difference b/w pre- and post-MDG	t-value
East Asia and the Pacific	-5.5	-3.14	-10.9	-6.06	-5.4	-2.15
Europe and Central Asia	1.7	0.27	-36.3	-5.86	-38.0	-4.32
Latin America and Caribbean	0.8	0.59	-8.8	-7.26	-9.6	-5.43
Middle East and North Africa	-1.5	-0.64	-3.3	-1.59	-1.9	-0.60
South Asia	-0.8	-1.77	-2.5	-6.20	-1.7	-2.84
Sub-Saharan Africa	-0.8	-1.50	-0.8	-1.77	-0.1	-0.10
All developing countries	-2.2	-1.77	-8.5	-7.05	-6.3	-3.60
Developing Member Countries	-3.4	-2.79	-7.0	-5.95	-3.6	-2.13
Non Developing Member Countries	0.2	0.10	-11.7	-5.25	-11.9	-3.69

Source: Author's calculations.

a significant acceleration in poverty reduction in the post-MDG decade. Can we attribute this progress to the establishment of the MDGs, which were adopted by the 2000 United Nations General Assembly to help end world poverty? This is indeed a pertinent question. As poverty is impacted by many factors, it is difficult to isolate the impact of MDG commitments on poverty reduction.

As this study already showed, the growth performance of developing countries has significantly accelerated in the post-MDG decade. People in the developing world, previously, had never enjoyed high growth rates. Since economic growth directly affects poverty reduction, the main contributing factor that accelerates poverty reduction could be economic growth. MDGs, however, are largely focused on poverty reduction and not on economic growth. One way to isolate the impact of MDGs would be to assess the progress on combating poverty while controlling for growth. This allows the study to better evaluate the impact of MDGs on poverty reduction. To control for economic growth, the study calculates the growth elasticity of poverty, defined as the growth performance in poverty divided by the growth performance in per capita GDP. Tables **14** and **15** present the elasticity estimates, along with their respective *t*-values, based on $1.25 a day and $2 a day poverty lines, respectively.[3]

In the pre-MDG decade, the growth elasticity of poverty based on $1.25 a day is –0.48 for South Asia, suggesting that 1% growth reduces poverty by 0.48% for that region. The elasticity has changed to –0.96 in the post-MDG decade, which means that the impact of economic growth on poverty reduction has improved. It is important to find out if this improvement is statistically significant or simply due to sampling error. The *t*–value of difference between the elasticities in the pre- and post-MDG decade is –0.91, which is not statistically significant at the 5% level of significance.

From Tables **14** and **15**, the *t*–values in the last column show that the improvements in poverty elasticity are statistically insignificant in the post-MDG period. This result holds uniformly across all regions for both extremely poor (with the poverty line of $1.25 a day) and poor (with the poverty line of $2 a day). It also implies that the acceleration in poverty reduction has mainly occurred due to economic growth, which has been broad based in almost all regions. After controlling for economic growth, there is no significant evidence of a post-MDG acceleration of poverty reduction.[4]

The MDGs have led to an unprecedented mobilization of the United Nations and other development institutions. The multinational development banks, such as the ADB, swiftly adopted

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[3]A more direct corroboration by assessing the impact of growth and factors other than growth such as inequality reduction and human capital improvements on poverty reduction would have helped strengthen the conclusion. A separate study would be needed to examine this issue.

[4]Growth is shaped by a multitude of forces. For example, human development (e.g., access to health, education, water and sanitation, and equality and participation – all of which are promoted under the MDGs) help to foster growth. As such, it is safe to assume that an improvement in growth could be driven by the MDG agenda to a certain extent. However, it is difficult to quantify the impact of human development and other factors on growth.

Table 14: Growth Elasticity of the Headcount Ratio Based on $1.25 Poverty Line

Region	Pre-MDG decade	t-value	Post-MDG Decade	t–value	Difference b/w post- and pre-MDG	t–value
East Asia and the Pacific	-1.67	-2.40	-1.65	-2.68	0.02	0.03
Europe and Central Asia	-5.67	-1.01	-9.36	-2.17	-3.69	-0.52
Latin America and Caribbean	1.24	0.68	-4.26	-1.48	-5.50	-1.61
Middle East and North Africa	-2.33	-1.10	-0.85	-0.76	1.48	0.62
South Asia	-0.48	-1.56	-0.96	-2.22	-0.49	-0.91
Sub-Saharan Africa	-1.84	-0.90	-0.66	-1.35	1.17	0.56
All developing countries	-1.34	-1.89	-2.02	-2.29	-0.68	-0.60
Developing Member Countries	-1.26	-2.23	-1.41	-2.55	-0.15	-0.19
Non Developing Member Countries	-2.11	-0.92	-4.86	-1.69	-2.75	-0.75

Source: Author's calculations.

Table 15: Growth Elasticity of the Headcount Ratio (Based on $2 a Day Poverty Line)

Region	Pre-MDG decade	t–value	Post-MDG Decade	t–value	Difference b/w post- and pre-MDG	t–value
East Asia and Pacific	-0.91	-2.42	-1.26	-2.89	-0.35	-0.62
Europe and Central Asia	1.50	0.36	-6.55	-2.31	-8.04	-1.58
Latin America and Caribbean	0.64	0.72	-4.08	-1.47	-4.72	-1.62
Middle East and North Africa	-0.71	-0.72	-1.01	-1.17	-0.30	-0.23
South Asia	-0.21	-1.79	-0.44	-2.09	-0.23	-0.96
Sub-Saharan Africa	-0.77	-0.83	-0.29	-1.28	0.48	0.51
All developing countries	-0.58	-1.42	-1.43	-2.31	-0.85	-1.15
Developing Member Countries	-0.66	-2.20	-0.96	-2.47	-0.30	-0.61
Non Developing Member Countries	0.21	0.10	-3.62	-1.73	-3.83	-1.32

Source: Author's calculations.

the MDGs as the new benchmark for measuring and monitoring development effectiveness. Unfortunately, this study finds no significant evidence of the effectiveness of MDG initiatives on poverty reduction. The acceleration in poverty reduction has occurred mainly due to economic growth. Given that the MDGs are completely silent on economic growth, can we really attribute the acceleration in economic growth witnessed in almost all regions of the developing world to the MDGs?[5]

By and large, MDGs are focused on outcomes rather than means. Furthermore, these outcomes are focused on the social sector, leaving out the crucial role of economic transformation in promoting growth and development. With rapid growth contributing significantly to poverty reduction, the MDGs should take into account the link between economic transformation and long-term growth and development.

Second generation MDGs could therefore push for a new global consensus on inclusive and sustainable growth to ensure that economic growth processes and benefits are accessible, particularly to the poor. Arriving at this consensus is indeed a difficult feat. But any post-2015 agenda on inclusive and sustainable growth should ensure that these are useful at the national or global levels.

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[5]The MDGs do not include a target on growth. Moreover, the MDGs are silent on how poverty reduction can be achieved. Evidence indicates that poverty reduction has been mainly driven by economic growth. The impact of growth on poverty reduction can be accelerated by various policies, but the MDG initiative has not significantly contributed to such policies.

VII. ASSESSING THE MDG ON POVERTY BY COUNTRY PROGRESS

The MDG1 target of reducing extreme poverty to half of its 1990 level is targeted for 2015. However, progress on MDG1 at the country level is uneven. Considering that 2015 is fast approaching, some countries may in fact miss it.

This section examines which countries are on track on poverty reduction. As discussed in Section II, a country is deemed to be on track if its annual rate of poverty reduction is greater than 2.77%. Table **16** presents the number and percentage of countries on track in meeting the targets during the pre- and post-MDG decades. To test the hypothesis whether the progress made in achieving the target has accelerated or decelerated in the post-MDG decade, the study needs to determine the *t*–values of the difference in the percentage of countries meeting the target. Table **16** presents these *t*–values in the last column.

Sufficient data is available for 84 countries in the pre-MDG period. Of these, 36 countries (43% of the total) are deemed to be on track in achieving the MDG1 target. In comparison, 68 of the 90 developing countries for which data is available in the post-MDG decade are on track to meet the poverty target by 2015. The *t*–value for the difference is 4.6. Therefore, the progress in achieving the MDG1 target has significantly accelerated in the post-MDG decade**.**

In DMCs, data is only available for 26 countries in the post-MDG decade; 25 of these are expected to meet the MDG target of halving poverty by 2015. In contrast, the corresponding figure for the pre-MDG decade was 54.5%, or 12 out of 22 DMCs, for which data is available. The *t*–value of the difference is 3.7, which suggests a significant improvement. As such, there has been a significant post-MDG improvement in most DMCs for poverty reduction. As shown in Table **16**, the remarkable performance in poverty reduction among developing countries in South Asia during the post-MDG period largely explains this conclusion. All nine countries for which data is available in the post-MDG decade are deemed to be on track to meet the MDG target of poverty reduction, while merely one-third of countries for which data were available are categorized as on track in the pre-MDG period.

These findings point to accelerated progress in poverty reduction relative to the establishment of the MDGs (as discussed in the changes in trends during the pre- and post-MDG periods). As argued earlier, rapid progress in poverty reduction has been mainly due to impressive economic growth in the post-MDG decade. Controlling for growth, such positive impacts of MDG1 are not evident at the global level. It cannot be concluded with confidence that the MDGs have helped to galvanize the political commitment and policy focus of governments, donors and other stakeholders to reduce poverty, facilitating greater and better efforts to combat poverty.

Table 16: Countries on Track Based on $1.25 Per Day Poverty Line

Region	Pre-MDG decade			Post-MDG decade			*t*-value for the difference
	No. of countries	Countries on track	% of countries on track	No. of countries	Countries on track	% of countries on track	
East Asia and the Pacific	10	8	80.0	11	10	90.9	0.7
Europe and Central Asia	22	8	36.4	23	17	73.9	2.7
Latin America and Caribbean	19	7	36.8	19	18	94.7	4.7
Middle East and North Africa	5	4	80.0	6	3	50.0	-1.1
South Asia	6	2	33.3	9	9	100.0	3.5
Sub-Saharan Africa	22	7	31.8	22	11	50.0	1.2
All developing countries	84	36	42.9	90	68	75.6	4.6
Developing Member Countries	22	12	54.5	26	25	96.2	3.7
Non Developing Member Countries	62	24	38.7	64	43	67.2	3.3

Source: Author's calculations.

Taking a step further, the study classified countries into four groups depending on their achievement toward meeting the MDG target of halving poverty by 2015 benchmarked against the poverty level in 1990. The classification of the four groups is already discussed in Section II. The findings reveal that progress toward the MDG target on poverty reduction is uneven across countries. Results also show that a significant proportion of developing countries in the world–mostly from sub-Saharan Africa and Eastern Europe–will not be able to meet the poverty target. Twenty of the 84 developing countries for which data is available in the pre-MDG period are classified as either "unlikely achievers" (2 countries) or "non achievers" (18 countries). Some studies suggest that the target was unfair to or unrealistic for certain regions. For instance, the GDP of the average African country would need to grow 7% each year for 15 years to achieve the MDG1 target. However, only five countries managed to reach such GDP growth levels between 1985 and 2000 (Clemens 2007).

Meanwhile, the results for developing Asia portray an optimistic picture that the region will achieve the target by 2015. While half of 22 DMCs will certainly meet the target, 10 will be "likely" to achieve it. As would be expected, the People's Republic of China, Indonesia, Thailand, and Viet Nam, among others, are classified as "achievers" because they have performed exceptionally well in achieving poverty reduction in the past two decades or so (see Table **A6** in the Appendix). Countries such as Bangladesh, Cambodia, and India are categorized as "likely achievers" for the MDG target. Unfortunately, the Philippines is the only DMC in developing Asia classified as being "unlikely" to achieve the target by 2015.

There has been a weak link between growth and poverty in the Philippines, with many workers engaged in low-productivity jobs, real average wages declining, and income inequality high. Moreover, the country's industry has stagnated as the economy is primarily relying on remittances to keep afloat (ADB 2012). The Philippines needs to bolster its poverty reduction efforts.

Moving forward, the challenge will be to sustain the gains in poverty reduction amid economic and political challenges. Rising inequality, volatility in the food, fuel and financial markets, and environmental challenges pose threats, and may potentially push people further into poverty. On the political front, financial pressure among donor countries may compromise the flow of aid into poor countries to help the latter with their poverty reduction efforts. On the brighter side, more stringent external support among donor countries has stressed the need for results-based management of aid projects.

Moreover, regions and countries where poverty reduction is not sufficient to meet the MDG1 target should be helped to implement better poverty reduction efforts, whether in targeting poverty groups or addressing primary constraints to poverty reduction. Best practices from the experiences of countries that have met MDG1 may be assessed and replicated in economies that have yet to reach the target.

VIII. CONCLUSIONS AND RECOMMENDATIONS

The MDGs represent both strategic development priorities and important milestones in the broader fight against poverty. Adopted by many economies and international organizations, the MDGs seek to combat poverty in terms of income and non-income dimensions, with MDG1, in particular, aiming to eradicate extreme poverty and hunger, and promote decent work for all.

With such paramount role in the development field, it is imperative to evaluate the MDGs' contribution to poverty reduction to help inform the formulation of strategic development policies and underscore the need for results-based development initiatives. This study assessed the progress on realizing MDG1 across the developing world, particularly in Asia. It also examined how the MDGs have influenced the pace of poverty reduction by capturing poverty impacts before and after countries made commitments to achieving the MDG targets in 2000.

Looking at the progress on meeting MDG1 across country and regional levels, the study found that significant strides in reducing income poverty were achieved globally, including in developing Asia. In the developing world, the proportion of the population living below $1.25 a day fell from 43% to 20.8%, while the corresponding figure based on the $2-a-day poverty line dropped from 63.1% to 41.5% from the early 1990s to the late 2000s. Between DMCs and non-DMCs, DMCs registered greater poverty reduction during the past two decades. Furthermore, the rate of poverty reduction was higher among the extreme poor, or those living below $1.25 a day.

To attain the MDG poverty target, an annual reduction in poverty of around 2.77% a year for the 25-

year period would be required. Given the observed level of poverty reduction, are gains sufficient to meet the MDG target on poverty reduction by 2015? For developing Asia, the prospects are optimistic.

Half of the 22 DMCs are certain to meet the target, while 45.5% of the countries will be "likely" to achieve it. The Peoples Republic of China, Indonesia, Thailand, and Viet Nam are categorized as "achievers" in realizing the poverty reduction target, while Bangladesh, Cambodia, and India are classified as "likely achievers." The Philippines is the only DMC deemed "unlikely" to achieve the target by 2015 given the weak link between growth and poverty in the country.

Despite this rapid poverty reduction and significant growth, Asia remains home to the majority of the world's poor. About 7 or 8 out of 10 poor people live in developing countries in South Asia or East Asia and the Pacific regardless of the poverty lines. Furthermore, poverty rates are still higher in DMCs than in non-DMCs and the developing world as a whole, both for the $1.25 and $2 a day poverty lines.

What can explain persisting poverty levels in Asia and the Pacific? One, growth in output of economies has not necessarily translated into growth in people's actual consumption and improvements in their welfare. This is reflected in per capita income/consumption growth rates, which are lower than observed per capita GDP growth rates, based on the findings. Per capita income/consumption is a more direct measure of average standard of living compared to per capita GDP, which covers factors that do not contribute to people's welfare. Among the DMCs, the study found no evidence of significant acceleration of per capita consumption/income in contrast to their performance in per capita GDP. Two, growth has been coupled with inequality among DMCs that has been slowing down the pace of poverty reduction. While the level of inequality in DMCs is generally lower than in the non-DMCs and not yet as widespread as perceived, the study found that inequality has been increasing in DMCs over the past two decades. This still warrants continued efforts to curb rising inequality to ensure that all individuals can benefit from and contribute to growth.

As inequality retards the pace of poverty reduction, policies aimed at promoting growth that is sustainable, pro-poor and even inclusive should be put in place. This will help to ensure that the benefits of economic growth trickle down and are available particularly to the poor. Moreover, efforts to promote growth and poverty reduction should take into account the lingering negative impacts of the 2008 financial crisis as well as the adverse effects of the ongoing euro zone crisis.

Developing partners and other stakeholders could begin by developing a consensus on the definition of inclusive and/or sustainable growth. There is currently no formal definition of inclusive growth. Since constraints to inclusive growth vary from one country to another, development partners and governments could jointly establish a set of cross-cutting measures that address inclusive and/or sustainable growth. Post-2015 MDGs could also be revised to include targets on growth and improve the existing target on the creation of decent and productive employment opportunities for all. This could help reinstate proper attention to economic transformation, which is crucial to growth and development. While determining targets for the level of growth may be difficult, the post-2015 agenda could push for policies and programs that promote economic transformation that benefits all particularly the poor.

The study also evaluated the extent to which the MDG commitment has influenced the target on poverty reduction by measuring and comparing the progress on poverty reduction during the pre- and post-MDG periods. The findings revealed that growth has primarily driven the gains in poverty reduction. Growth in developing countries has been broad-based across regions, with per capita GDP in all developing countries growing at an annual rate of 3.8% in the pre-MDG decade, and 5.9% per annum in the post-MDG decade.

Upon controlling for growth, improvements in poverty elasticity were found to be statistically insignificant in the post-MDG period. DMCs also displayed a much superior performance than the non-DMCs in both pre- and post MDG periods. While the gap in per capita GDP between DMCs and non-DMCs has narrowed, the finding did not support the convergence theory since poorer countries did not necessarily grow faster than their richer counterparts.

With the MDGs generally silent on targets related to growth, achievements in income poverty reduction cannot be ascribed to the adoption of the MDGs. The MDGs were focused on establishing benchmarks for social outcomes, rather than identifying strategies to achieve such outcomes.

This finding weakens the perceived contribution of the MDGs in bolstering political and policy commitment

to reducing poverty. Moreover, it is difficult to ascertain the role of MDGs in encouraging accelerated growth, which primarily propelled gains in poverty reduction. While development institutions such as ADB quickly adopted the MDGs as the new standards for measuring and monitoring development effectiveness, this study found no significant evidence on the effectiveness of MDGs at least on poverty reduction.

While MDGs have rallied support and stressed the need to reduce poverty, the goals are at best only benchmarks for ensuring development effectiveness. The findings suggest that donors, governments and other stakeholders should implement such goals in more concrete terms by supporting and replicating policies and programs that work in terms of combating poverty. Fostering growth has been found effective in helping to curb poverty. Donors and governments could

thus focus on mechanisms that promote growth as a means to reduce poverty.

The post-2015 agenda should look into ways on how to sustain growth and ensure that the poor are able to contribute to and benefit from such growth. High level of growth has only occurred in selected economies in East, Southeast, and more recently South Asia, and has been associated with rising inequality. Thus, growth needs to be both rapid and inclusive across various countries and regions.

ACKNOWLEDGEMENT

APPENDIX

Table A1: List of Countries and Data Points Used for the Study

Country	Survey Year		
	late 2000s	**early 2000s**	**late 1990s**
Albania	2008	2002	1996.8
Argentina–Urban	2010	2001	1992
Armenia	2008	2001	1996
Azerbaijan	2008	2001	1995
Bangladesh	2010	2000	1995.5
Belarus	2008	2001	1995
Bhutan	2007	2003	-
Bolivia	2008	2000	1993
Brazil	2009	2001	1993
Bulgaria	2007	2001	1994
Burkina Faso	2009	2003	1994
Burundi	2006	1998	1992
Cambodia	2008	2004	1994
Cameroon	2007	2001	1996
Central African Republic	2008	2003	1992
Chile	2009	2000	1994
People's Rep. of China–Rural	2008	2002	1994
People's Rep. of China–Urban	2008	2002	1994
Colombia	2010	2002	1992
Costa Rica	2009	2002	1994

(Table A1). Continued.

Country	Survey Year		
	late 2000s	**early 2000s**	**late 1990s**
Croatia	2008	2001	1988
Côte d'Ivoire	2008	2002	1993
Dominican Republic	2010	2002	1992
Ecuador	2010	2000	1994
Egypt, Arab Republic	2008.3	1999.8	1990.5
El Salvador	2009	2002	1991
Estonia	2004	2000	1993
Ethiopia	2005	1999.5	1995
Fiji	2008.5	2002.5	-
Georgia	2008	2001	1996
Ghana	2005.5	1998.3	1991.5
Guatemala	2006	2000	1989
Guinea	2007	2003	1994
Honduras	2009	2002	1994
Hungary	2007	2000	1993
India–Rural	2009.5	2004.5	1993.5
India–Urban	2009.5	2004.5	1993.5
Indonesia–Rural	2010	2002	1993
Indonesia–Urban	2010	2002	1993
Iran, Islamic Republic	2005	1998	1994
Jamaica	2004	1999	1993
Jordan	2010	2002.5	1992
Kazakhstan	2009	2002	1993
Kenya	2005.4	1997	1992
Kyrgyz Republic	2009	2002	1993
Lao PDR	2008	2002.2	1992.2
Latvia	2008	2002	1993
Lithuania	2008	2000	1993
Madagascar	2010	2001	1993
Malaysia	2009	1997	1992
Maldives	2004	1998	-
Mali	2010	2001	1994
Mauritania	2008	2000	1995.5
Mexico	2010	2000	1992
Moldova, Republic	2010	2002	1992
Morocco	2007	2000.8	1990.5
Mozambique	2007.5	2002.5	1996.2

(Table A1). Continued.

Country	Survey Year		
	late 2000s	**early 2000s**	**late 1990s**
Nepal	2010.2	2003.3	1995.5
Nicaragua	2005	2001	1993
Niger	2007.5	2005	1994.4
Nigeria	2009.8	2003.7	1992.3
Pakistan	2007.5	2001.5	1990.5
Panama	2010	2002	1995
Paraguay	2009	2002	1995
Peru	2010	2002	1994
Philippines	2009	2000	1994
Poland	2009	2002	1996
Romania	2009	2002	1994
Russian Federation	2009	2002	1993
Rwanda	2010.8	2000	1984.5
Senegal	2005	2001	1994.4
Serbia	2009	2002	-
Slovak Republic	2009	2004	1996
Slovenia	2004	2002	1993
South Africa	2008.7	2000	1993
Sri Lanka	2006.5	2002	1995.5
Swaziland	2009.5	2000.5	1994.5
Tajikistan	2009	2004	1999
Tanzania	2007	2000.4	1991.9
Thailand	2009	2002	1994
Timor-Leste	2007	2001	-
Tunisia	2005	2000	1995
Turkey	2008	2002	1994
Uganda	2009.3	2002	1992
Ukraine	2008	2002	1992
Uruguay	2010	2006	1989
Venezuela, RB	2006	2001	1992
Vietnam	2008	2002	1992.7
Yemen, Republic	2005	1998	-
Zambia	2006	2002.8	1993

Note: - indicates data not available.
Source: PovcalNet (accessed in September 2012).

Table A2: Per Capita GDP at 2005 PPP for DMCs

Country	Actual values			Annual growth rates	
	early 1990s	early 2000s	late 2000s	Pre-MDGs	Post-MDGs
Armenia	153	210	468	6.37	11.43
Azerbaijan	155	226	669	6.36	15.48
Bangladesh	69	81	124	3.46	4.28
Bhutan	-	261	350	-	7.35
Cambodia	65	112	158	5.43	8.55
People's Rep. of China	141	259	476	7.65	10.14
Fiji Islands	-	339	358	-	0.93
Georgia	167	220	376	5.5	7.66
India	106	171	239	4.35	6.68
Indonesia	200	231	323	1.6	4.22
Kazakhstan	453	562	860	2.41	6.07
Kyrgyz Republic	137	130	172	-0.61	4.00
Lao PDR	81	122	168	4.02	5.63
Malaysia	623	854	1044	6.33	1.67
Maldives	-	332	475	-	5.97
Nepal	67	77	90	1.66	2.28
Pakistan	135	154	194	1.17	3.85
Philippines	206	225	280	1.47	2.45
Sri Lanka	205	256	312	3.39	4.40
Tajikistan	75	114	158	8.32	6.48
Thailand	438	482	597	1.19	3.06
Timor-Leste	-	61	56	-	-1.28
Viet Nam	84	149	218	6.18	6.34

Note: - indicates data not available.
Source: Author's calculations.

Table A3: Percentage of Poor in DMCs Based on $1.25 a Day Poverty Line

Country	Actual levels			Annual growth rates	
	early 1990s	early 2000s	late 2000s	Pre-MDGs	Post-MDGs
Armenia	17.50	19.84	1.28	2.51	-39.15
Azerbaijan	16.26	6.32	0.43	-15.75	-38.40
Bangladesh	60.91	58.59	43.25	-0.86	-3.04
Bhutan	-	26.23	10.22	-	-23.56
Cambodia	44.50	37.69	22.75	-1.66	-12.62
PRC–Rural	80.61	43.69	22.27	-7.66	-11.23
PRC–Urban	12.55	2.97	0.89	-18.01	-20.08
Fiji Islands	-	29.16	5.88	-	-26.69

(Table A3). Continued.

Country	Actual levels			Annual growth rates	
	early 1990s	early 2000s	late 2000s	Pre-MDGs	Post-MDGs
Georgia	4.71	19.53	15.27	28.45	-3.52
India–Rural	52.46	43.83	34.28	-1.63	-4.92
India–Urban	40.77	36.16	28.93	-1.09	-4.46
Indonesia–Rural	58.14	33.37	17.75	-6.17	-7.89
Indonesia–Urban	47.01	24.24	18.33	-7.36	-3.49
Kazakhstan	4.21	5.15	0.11	2.24	-54.95
Kyrgyz Republic	18.61	34.03	6.23	6.71	-24.26
Lao PDR	55.68	43.96	33.88	-2.36	-4.49
Malaysia	1.62	0.54	0	-21.97	-52.43
Maldives	-	25.59	1.48	-	-47.5
Nepal	67.97	53.13	24.82	-3.16	-11.03
Pakistan	64.71	35.87	21.04	-5.36	-8.89
Philippines	28.11	22.45	18.42	-3.75	-2.20
Sri Lanka	16.32	13.95	7.04	-2.41	-15.20
Tajikistan	49.4	20.77	6.56	-17.33	-23.05
Thailand	4.11	1.64	0.37	-11.48	-21.27
Timor-Leste	-	52.94	37.44	-	-5.77
Viet Nam	63.74	40.05	16.85	-5.00	-14.43

Note: - indicates data not available.
Source: Author's calculations.

Table A4: Percentage of Poor in DMCs Based on $2 a Day Poverty Line

Country	Actual levels			Annual growth rates	
	early 1990s	early 2000s	late 2000s	Pre-MDGs	Post-MDGs
Armenia	38.16	49.73	11.79	5.30	-20.56
Azerbaijan	38.22	26.31	2.64	-6.22	-32.85
Bangladesh	85.07	83.90	75.80	-0.31	-1.02
Bhutan	-	48.82	29.06	-	-12.97
Cambodia	74.56	65.35	52.35	-1.32	-5.55
PRC–Rural	94.3	71.88	47.90	-3.39	-6.76
PRC–Urban	38.93	15.04	4.54	-11.89	-19.96
Fiji Islands	-	48.03	22.24	-	-12.83
Georgia	13.63	39.86	31.58	21.46	-3.33
India–Rural	84.51	78.78	72.59	-0.64	-1.64
India–Urban	71.37	65.04	56.76	-0.84	-2.72
Indonesia–Rural	88.31	74.31	48.02	-1.92	-5.46
Indonesia–Urban	75.56	55.62	42.8	-3.4	-3.28
Kazakhstan	17.03	20.89	1.03	2.27	-43.00

Country	Actual levels			Annual growth rates	
	early 1990s	early 2000s	late 2000s	Pre-MDGs	Post-MDGs
Kyrgyz Republic	29.69	65.77	21.08	8.84	-16.25
Lao PDR	84.28	76.11	64.61	-1.02	-2.82
Malaysia	10.85	6.56	2.06	-10.06	-9.65
Maldives	-	36.67	11.78	-	-18.93
Nepal	88.59	76.74	56.27	-1.84	-4.50
Pakistan	87.76	73.02	59.1	-1.67	-3.53
Philippines	51.9	44.14	40.8	-2.7	-0.87
Sri Lanka	45.71	38.9	28.35	-2.48	-7.03
Tajikistan	82.98	48.9	26.86	-10.58	-11.98
Thailand	19.77	12.85	4.33	-5.39	-15.54
Timor-Leste	-	76.91	71.97	-	-1.11
Viet Nam	85.27	67.98	42.46	-2.44	-7.84

Note: - indicates data not available.
Source: Author's calculations.

Table A5: Gini Index for DMCs

Country	Actual levels			Annual growth rates	
	early 1990s	early 2000s	late 2000s	Pre-MDGs	Post-MDGs
Armenia	44.42	36.22	30.86	-4.08	-2.29
Azerbaijan	34.96	36.50	33.71	0.72	-1.14
Bangladesh	33.46	33.46	32.12	0	-0.41
Bhutan	-	46.83	38.06	-	-5.18
Cambodia	38.28	41.85	37.85	0.89	-2.51
PRC–Rural	33.84	38.02	39.4	1.46	0.59
PRC–Urban	29.22	33.46	35.15	1.69	0.82
Fiji Islands	-	46.81	42.83	-	-1.48
Georgia	37.13	41.04	41.34	2.00	0.10
India–Rural	28.59	30.46	29.96	0.58	-0.33
India–Urban	34.34	37.59	39.28	0.82	0.88
Indonesia–Rural	25.97	26.07	31.45	0.04	2.35
Indonesia–Urban	35.34	34.70	38.13	-0.20	1.18
Kazakhstan	32.67	34.95	29.04	0.75	-2.65
Kyrgyz Republic	53.70	31.67	36.19	-5.87	1.91
Lao PDR	30.43	32.63	36.74	0.70	2.05
Malaysia	47.65	49.15	46.21	0.62	-0.51
Maldives	-	62.69	37.37	-	-8.62
Nepal	35.23	43.83	32.82	2.80	-4.19

(Table A5). Continued.

Country	Actual levels			Annual growth rates	
	early 1990s	early 2000s	late 2000s	Pre-MDGs	Post-MDGs
Pakistan	33.23	30.39	30.02	-0.81	-0.20
Philippines	42.89	46.09	42.98	1.20	-0.78
Sri Lanka	35.41	41.06	40.26	2.28	-0.44
Tajikistan	29.01	33.61	30.83	2.94	-1.73
Thailand	43.47	41.98	40.02	-0.44	-0.68
Timor-Leste	-	39.52	31.93	-	-3.55
Viet Nam	35.68	37.55	35.57	0.55	-0.90

Note: - indicates data not available.
Source: Author's calculations.

Table A6: Classification of Countries by their Achievements in Attaining the MDG1 Target Based on the Poverty Line of $1.25 a Day

Achievers	Likely Achievers	Unlikely Achievers	Non-achievers	No data available
PRC–Rural	Cambodia	Guatemala	Albania	Fiji
PRC–Urban	Lao PDR	Egypt, Arab Rep.	Croatia	Timor-Leste
Indonesia–Rural	Armenia	Iran, Islamic Rep.	Hungary	Serbia
Indonesia–Urban	Belarus	Cameroon	Latvia	Yemen, Rep.
Malaysia	Bulgaria	Kenya	Slovenia	Bhutan
Thailand	Georgia	Mali	Burundi	Maldives
Viet Nam	Kazakhstan	Philippines	Central African Rep.	
Azerbaijan	Kyrgyz Rep.		Côte d'Ivoire	
Estonia	Moldova, Rep.		Madagascar	
Lithuania	Turkey		Mauritania	
Poland	Ukraine		Nigeria	
Romania	Argentina–Urban		Rwanda	
Russian Federation	Bolivia		Zambia	
Slovak Rep.	Colombia			
Tajikistan	Costa Rica			
Brazil	Dominican Rep.			
Chile	Ecuador			
Honduras	El Salvador			
Jamaica	Mexico			
Nicaragua	Paraguay			
Panama	Peru			
Jordan	Uruguay			
Tunisia	Venezuela, RB			
Nepal	Morocco			
Pakistan	Bangladesh			

(Table A6). Continued.

Achievers	Likely Achievers	Unlikely Achievers	Non-achievers	No data available
Ghana	India–Rural			
Niger	India–Urban			
Senegal	Sri Lanka			
Swaziland	Burkina Faso			
	Ethiopia			
	Guinea			
	Mozambique			
	South Africa			
	Tanzania			
	Uganda			

Source: Author's calculations.

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