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# IMF Working Paper

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## Asia's Quest for Inclusive Growth Revisited

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**IMF Working Paper**

Asia and Pacific Department

**Asia's Quest for Inclusive Growth Revisited**

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Authorized for distribution by Odd Per Brekk

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**Abstract**

Despite the rapid economic growth and poverty reduction, inequality in Asia worsened during last two decades. We focus on the determinants of growth inclusiveness and suggest options for reform. A cross-country empirical analysis suggests that fiscal redistribution, monetary policy aimed at macro stability, and structural reforms to stimulate trade, reduce unemployment and increase productivity are important determinants of inclusive growth. The main policy implication of our analysis is that there is still room to strengthen such policies in Asia to better achieve growth with shared prosperity. In particular, scenario simulations based on our results suggests that the effect of expanding fiscal redistribution on inclusive growth could be sizeable in emerging Asia, since the estimated improvement in our proxy of inclusive growth – a measure of growth in average income “corrected” for the equity impact—ranges from about 1 to about 8 percentage points.

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## I. INTRODUCTION

Inequality has increased in the last decades in both advanced and developing economies as a result of various factors, including globalization and technological change. At the same time, there is a growing international consensus that economic inequality is bad for both growth and social cohesion, and that policies should play an important role to facilitate inclusive growth, or growth accompanied by an improvement in equality.

Against this background, the United Nations' Report on the World Social Situation 2013 emphasized that addressing inequalities is not only a moral imperative but it is also necessary in order to unleash the human and productive potential of each country's population and to bring development towards a socially-sustainable path. Similarly, recent World Economic Forum's Global Risks (WEFGR) reports argue that the widening gaps between the richest and poorest citizens threaten social and political stability as well as economic development.

Responding to the WEFGR analysis, International Monetary Fund's managing director Christine Lagarde said that "Excessive inequality is corrosive to growth" (Speech at Davos, Switzerland, January 23, 2013).<sup>2</sup> The WEFGR findings and Lagarde's comments are clear examples of how the international consensus is shifting from the past belief that there is a trade-off between economic growth and equality (e.g. Okun 1975) to a new conventional wisdom in which ensuring equality is seen as critical for sustainable growth. An empirical analysis by OECD (2014), for example, concluded that the long-term trend increase in income inequality has curbed economic growth significantly in its member countries.

Other examples of this new conventional wisdom can also be found in the work of Berg and Ostry (2011), who document, using a multi-decade and multi-country analysis, how greater equality can help sustain growth. The relationship between inequality and growth also has implication for poverty reduction. According to several authors, equality strengthens the poverty-reducing effect of growth. Son and Kakwani (2003), for example, use a theoretical framework to show that the impact of growth on poverty reduction is lower when inequality is high. Similarly, Gramy and Assane (2006) carry out an empirical analysis using data for over sixty developing countries, finding that growth accompanied by improved distribution works better than either growth or distribution alone in reducing poverty.

As Berg, Ostry, and Tsangarides (2014) stress, the fact that equality seems to drive higher and sustainable growth does not in itself supports redistribution, since inequality may impede growth at least in part because it calls forth efforts to redistribute that themselves undercut growth, as higher taxes and subsidies dumpen incentives to work and invest. While the latter was the assumption underpinning the analysis by Okun (1975), more recent contributions have also recognized that redistribution need not be inherently detrimental for growth. In some theoretical models, redistribution can increase both equality and growth, as progressive

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<sup>2</sup> "A New Global Economy for a New Generation" speech by Christine Lagarde, Managing Director, International Monetary Fund, Davos, Switzerland, January 23, 2013. Available online at <https://www.imf.org/external/np/speeches/2013/012313.htm>

taxes finance public investment and social insurance spending enhances the welfare of the poor as well as risk-taking (Benabou 2000), and higher health and education spending help offset labor and capital market imperfection (Saint-Paul and Verdier 1993, 1997). Empirically, Lindert (2004), finds that some categories of public spending which reduce inequality (such as health, education and infrastructure spending) have no apparent adverse impact on growth, while Berg, Ostry and Tsangardies (2014), conclude that the combined direct and indirect effects of income redistribution are on average “pro-growth”

The debate on the relationship between inequality, redistribution, poverty reduction and growth is particularly relevant for Asia, since, as stressed by Zhuang, Kanbur and Rhee (2014), although poverty reduction in developing Asia over the past two decades has happened faster than in any other region of the world, at any other time in recorded history, the bulk of the region’s population still lives in countries with rising inequality. Furthermore, Balakrishnan et al. (2013), point out that the more recent period of growth in Asia has been less inclusive and less pro-poor, compared to both other regions and Asia’s own past. This discussion suggests that there is scope for policy measures to broaden the benefits of growth in Asia. In this context, several recent papers, including Berg, Ostry, and Tsangarides (2014) and Bastagli et al. (2012) have focused on how fiscal policy can be used to reduce inequality through redistribution, promoting both economic efficiency and equity. Within the specific context of Asia, Zhuang, Kanbur and Rhee (2014) have argued that, in addition to efficient fiscal policy, measures to address regional disparity and to make growth more employment friendly are also needed to reduce inequality, while Balakrishnan et al. (2013) have stressed the importance of fostering financial inclusion.

In this paper, we revisit the issue of Asia’s quest for inclusive growth. Our analysis includes both a descriptive part, in which we review recent trends and stylized facts on poverty and inequality, and a cross-country empirical analysis of the determinants of inclusive growth. For the latter, we regress the measure of inclusive growth developed by Anand et al. (2013) on various determinants. Compared to previous papers which have used this approach (e.g. Anand et al. (2013) and Balakrishnan et al. (2013)), we explicitly include in our model a variable which proxies the impact of fiscal redistribution, as well as variables which seek to gauge the inequality impact of monetary policy.

Our cross country empirical analysis suggests that fiscal redistribution, monetary policy aimed at macro stability, and structural reforms to stimulate trade, reduce unemployment and increase productivity are important determinants of inclusive growth. The main policy implication of our analysis is that there is still room to strengthen such policies in Asia to better achieve growth with shared prosperity. In particular, scenario simulations based on our results suggests that the effect of expanding fiscal redistribution on inclusive growth could be sizeable in emerging Asia, since the estimated improvement in our measure of inclusive growth ranges from about 1 to about 8 percentage points.

The structure of the paper is as follows. Section II presents some trends and stylized facts regarding poverty, equality and inclusive growth in Asia. Section III reviews the literature on policies for inclusive growth. Section IV presents some empirical evidence based on a panel of countries, which is consistent with the findings by previous studies that fiscal transfers,

prudent monetary policy, and efficient structural reform could improve inclusive growth. Section V discusses effort and progress made towards inclusive growth in some Asian countries so far and provides some policy recommendations. Section VI concludes.

## II. INCLUSIVE GROWTH IN ASIA: TRENDS AND STYLIZED FACTS

Inclusive growth is a multidimensional and complex concept and there is no consensus in the literature and in policy discussions on how it should be defined and measured. One possible approach is to define growth as inclusive if people in the lower income brackets benefit from economic growth equally or more than the population as a whole. As an example of this point of view, Beegle et al. (2014) discuss the recent shift in the World Bank’s mission to focusing on promotion of shared prosperity, in addition to its traditional focus of ending extreme poverty (measured as then number of people living with less than USD 1.25 a day).<sup>3</sup> Beegle et al. (2014) stress that the new goal of promoting shared prosperity should be achieved by boosting the incomes of the poorest 40 percent of the population in every country. In operational terms, this would mean that the World Bank will need to add 1.3 billion people to its target population. In many countries, this will include individuals who are not poor in absolute term (i.e. they live with more than \$1.25 per day), but can still be considered as “relative poor” in their countries.

Other authors, on the other hand, have argued that inclusive growth should be “disadvantage-reducing” growth. Klasen (2010) for example, defined inclusive growth as growth that mainly benefits disadvantaged groups, i.e. growth that reduces regional, ethnic, and gender disparities.

Similarly to the example discussed above, the inclusive growth concept that we use in this paper is broader than definitions which focus only on reducing absolute poverty. Our definition and measure of inclusive growth refers to both the pace and distribution of economic growth. In particular, in the descriptive part presented in this section, we present a comparison of country-specific income distribution indifference curves over time. Such comparison allows us to capture both growth and equity. In the same vein, the proxy that we use in our empirical analysis in next section, developed by Anand et al. (2013), is an attempt to capture inclusive growth by accounting for both changes in growth and in income distribution. Before focusing on these measures of inclusive growth, we provide an overview of trends in poverty and inequality in Asia. These show how, despite rapid economic growth and poverty reduction, inequality has increased during the last two decades.

### A. Poverty

Poverty has fallen in recent decades in Asia. While this is part of a world-wide trend, the East Asia and Pacific region has experienced the most dramatic reduction of poverty—measured

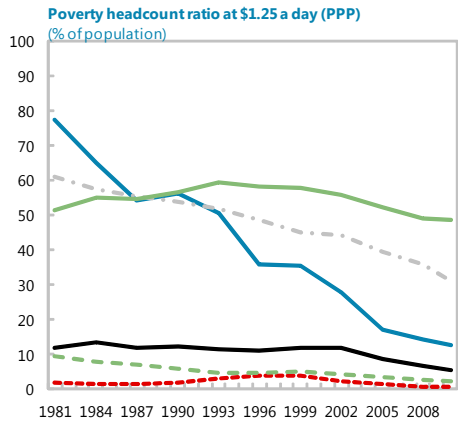
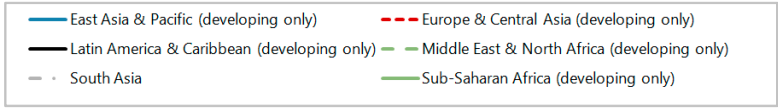
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<sup>3</sup> See also <http://blogs.worldbank.org/developmenttalk/poverty-shared-prosperity-and-trade-offs>

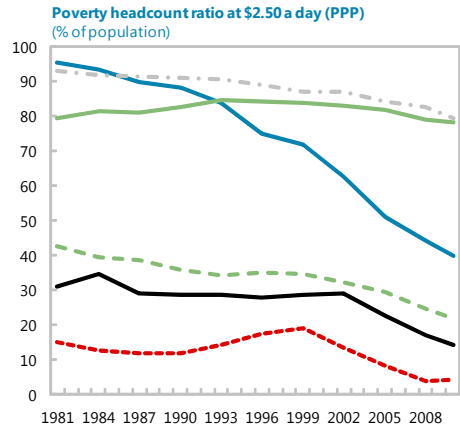
as the percentage of the population living below certain poverty lines (see panel chart below). Asia's poverty reduction trend was most remarkable at the absolute poverty level, measured as a poverty line of \$1.25-\$2.50 a day at 2005 international prices. Using the strictest definition (\$ 1.25), East Asia and the Pacific experienced the fastest decline in the world, followed by South Asia. Furthermore, such decline has happened in a steady way since the early 1980s. If we look at moderate poverty levels (\$4.00-\$5.00), a significant reduction in East Asia and the Pacific becomes evident since the early 1990s, at a pace comparable with that observed in Latin America and Europe and Central Asia (although the reduction in East Asia and the Pacific happened from higher levels of moderate poverty).

China alone accounted for most of Asia's decline in extreme poverty over the past decade. Between 1990 and 2010, the nation had about 530 million people moving out of extreme poverty. By comparison, during the same period, the rest of the developing world saw a reduction of poverty of 170 million. The remarkable reduction in poverty achieved by China implies that the share of population living on less than \$1.25 a day in China went down to 12% in 2009, from more than 60% in early 1990s. China's experience may be cited as a counter-argument to the need for curbing inequalities in order to reduce poverty, since the dramatic declines in poverty discussed above have been achieved in a context of high growth and rising inequality. However, some authors have argued that, without rising inequality, China's high growth would have translated into even higher poverty reduction (see for example Fosu (2011)).

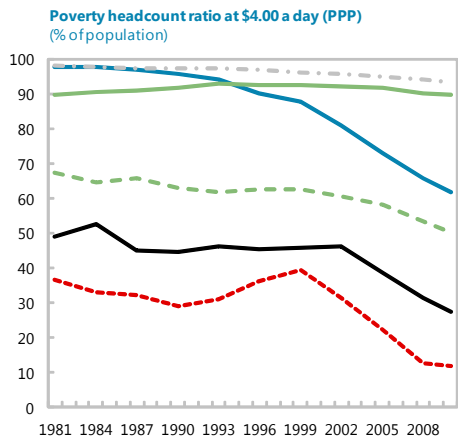
While China accounts for the bulk of poverty reduction in Asia, all other Asian countries that have sufficient data available also show significant progress since the early 1990s (text chart). Extreme poverty reduction was remarkable in Vietnam, where the percentage of the population living on less than \$1.25 per day dropped from 64 percent in 1993 to 17 percent in 2008. Indonesia also saw the extreme poverty rate dropping from 54 percent to 16 percent, and Cambodia from 45 percent to 19 percent. The drop in poverty in The Philippines was less marked, but this is mostly because the country started from lower (31 percent) extreme poverty rates in the early 1990s. Thailand and Malaysia have managed to reduce extreme poverty virtually to zero. Overall, all the countries included in the text chart have extreme poverty rates below 20 percent, with the exception of Lao PDR.



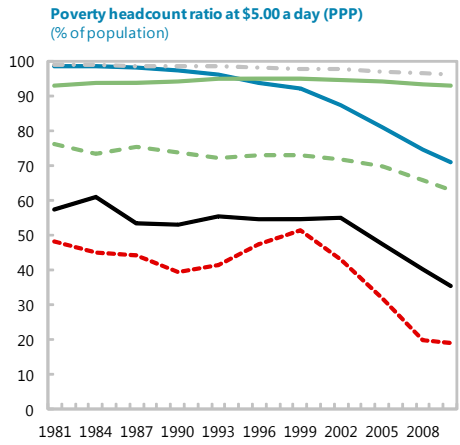
Sources:PovStats



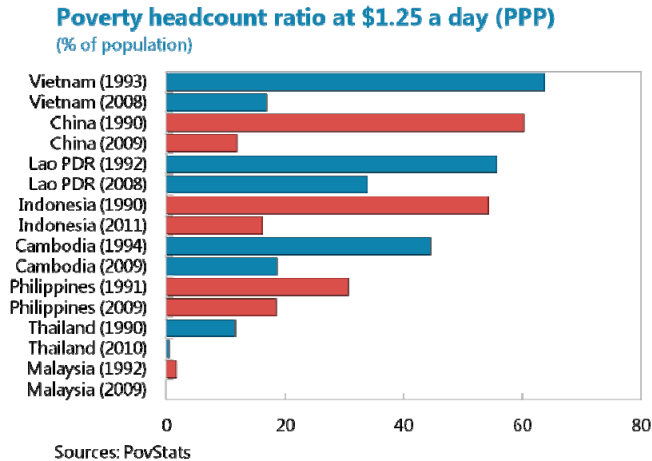
Sources:PovStats



Sources:PovStats



Sources:PovStats



Despite the sharp decline in poverty experienced by Asia, still 251 million people were living in extreme poverty in East Asia and Pacific as of 2010, accounting for about 20 percent of the world's extreme poor. Moreover, the \$1.25 per day measure used by the World Bank may not fully capture the extent of extreme poverty in the region. According to the Asian Development Bank (2014), if three other factors—the cost of consumption specific to Asia's poor; food costs that rise faster than the general price level; and vulnerability to natural disasters, climate change, economic crises, and other shocks—are considered, Asia's estimated extreme poverty rate would be as high as 41 percent in 2015 and it would fall only to about 17 percent by 2030, even with the assumption that current growth trend continues.

## B. Equality

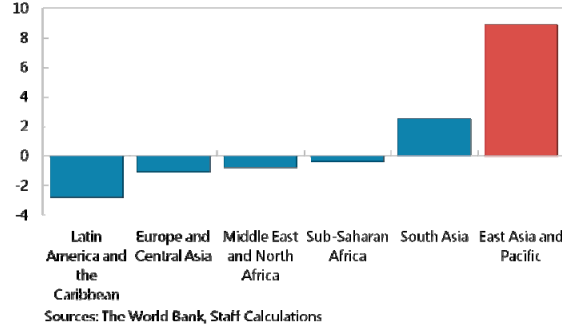
Despite remarkable growth and impressive declines in extreme poverty, inequality has increased in Asia over the past few decades. Regional aggregate data on inequality are not readily available, but our calculations using available country level data on the World Bank database, a population weighted average of the Gini Index for developing countries in East Asia and the Pacific Region increased on average by about 9 percentage points since the early 1990s (text chart)<sup>4</sup>. In contrast, the same indicator for developing countries in most other regions, except South Asia, has decreased. As a consequence, our measure of the aggregate Gini Index suggests that the level of inequality in developing East Asia and Pacific currently is closer to the one observed in Sub-Saharan Africa (text chart) and higher than in most other developing regions in the world (with the exception of Sub-Saharan Africa and Latin America and the Caribbean). Our estimate of the increase in inequality in Asia is consistent with the findings by Balakrishnan et al. (2013), who argue that the increase of inequality measured by changes in Gini Index in the last two decades in Asia was more

<sup>4</sup> China alone accounted for 7.8 percentage points change in population weighted Gini for East Asia and the Pacific Region, while some countries contributed negatively.

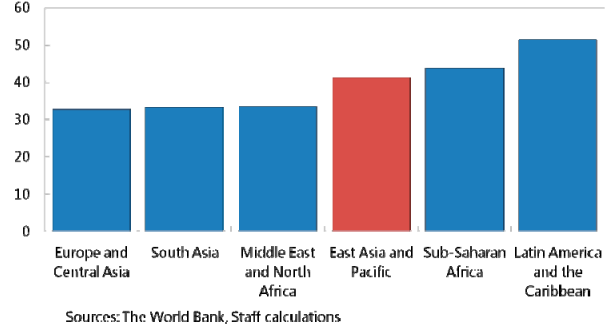


pronounced than in most other emerging markets.<sup>5</sup> Balakrishnan et al. (2013), also argue that the rise in income inequality has dampened the impact of growth on poverty reduction in Asia. The United Nations (2013) also noted that Asia, which historically has experienced lower inequality than other developing regions, has seen widespread increases in income inequality at the national level, as well as in both urban and rural areas.

**Developing Countries : Change in Gini Index, Since Early 1990s**  
(population-weighted, in Gini points)

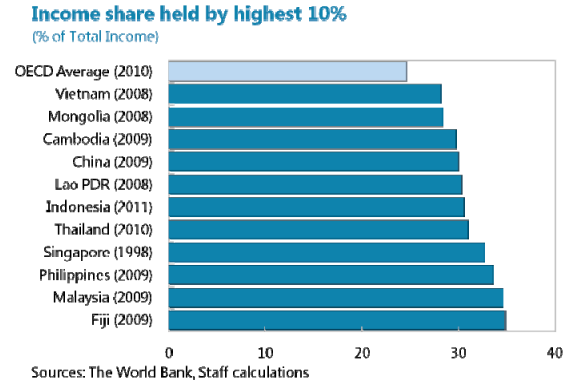
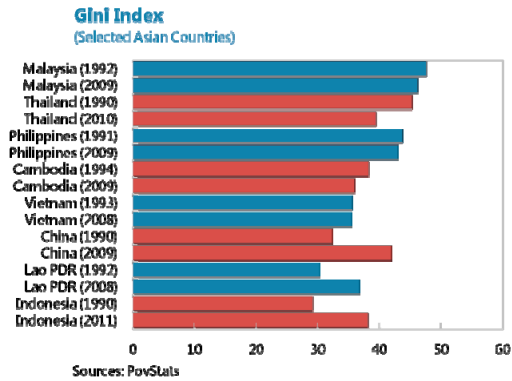


**Developing Countries: Latest Gini Index**  
(population weighted, in Gini points)



Looking at individual Asian countries which have sufficient data, we can see that, since the early 1990s, income inequality increased in China, Indonesia, and Lao PDR, and was stable or marginally decreasing in Malaysia, Philippines, Cambodia and Vietnam. The most recent data available for Malaysia, Philippines, and China (2009) show that, regardless of the trends experienced by these countries, they still have high inequality, with Gini indexes of 46, 43, and 42 respectively. Even in Thailand, the only country which managed to achieve a somewhat more significant decline in inequality, the Gini was still high at 39 in 2010. Furthermore, in emerging Asia and the Pacific, income tends to be concentrated unevenly at the top of the distribution ladder. As it can be seen in the text chart, the income share held by the highest 10 percent ranges from 28 percent in Vietnam to 35 percent in Fiji, all higher than the OECD average of 25 percent.

<sup>5</sup> The Gini Index is the most widely used measure of income inequality, and which ranges from 0 (perfect equality) to 100 (complete inequality: one person has all the income or consumption while all others have none).



### C. Growth Inclusiveness

The evidence presented so far has emphasized that inequality has increased in Asia despite considerable success in poverty reduction. As we have stressed in the discussion, this is problematic for at least two reasons: because inequality is bad for growth, and because the gains, in terms of poverty reduction, could have been stronger had growth been more equitable. It is thus important to focus on inclusive growth, a concept which refers to both the pace and distribution of economic growth.

One way to assess the degree of inclusive growth of a country is to use indifference curves in which the horizontal axis shows the population arranged in ascending order of income (with the leftmost being the bottom 20 percent, and rightmost the top 20 percent) and y-axis shows the mean income of each corresponding income group. Since a higher curve implies higher average income, we can define growth as inclusive if the curve moves upward at all points. However, the degree of inclusive growth varies depending on: (i) how much the curve moves up (growth); and (ii) how the distribution of income, or the steepness of the curve, changes (equity).

Eyeballing the indifference curves for the selected Asian countries highlights that in most cases, growth over last decades was inclusive according to the definition we are using here, since economic growth shifted the indifference curve upwards at all points (the only possible exception being Fiji, which has limited data available in a shorter time period). However, the indifference curves also show that many countries experienced growth which was not shared equally amongst the population, thus widening inequality. For example, China's rapid growth seems to have benefitted the society unevenly, as the indifference curve become much steeper over time. In other words, China's "inclusive growth" was driven by growth rather than by improvements in equality.

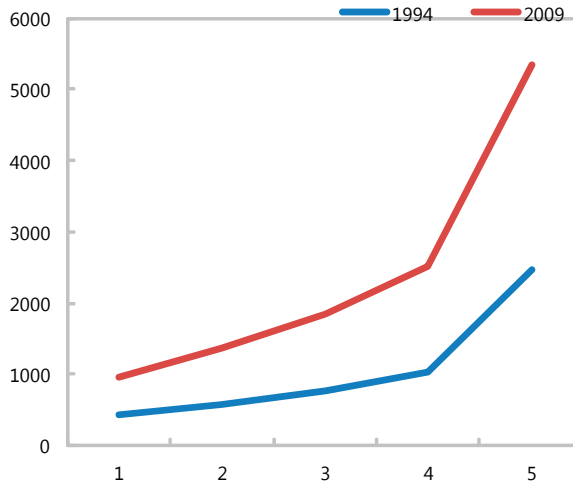
On the other hand, growth in other Asian countries, especially Thailand and the Philippines, seems to have been shared relatively more equally across income groups, as it can be inferred from the less marked increase in steepness in their indifference curves. Another interesting

conclusion which can be drawn from looking at the charts is that in most countries (with the exception of Fiji and, to a lesser extent, the Philippines), incomes at the very top increased much more than at other levels. These findings suggest that, although at varying degree, an uneven growth trend is common among Asian countries, and there is room to improve growth inclusiveness by achieving a more equal distribution of income.

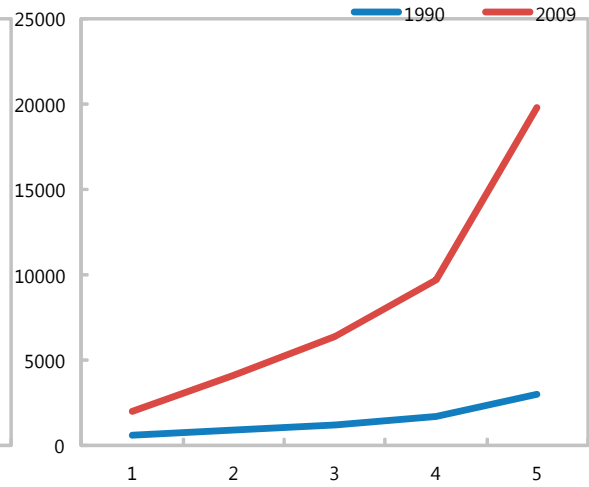
The visual analysis of the indifference curves carried out in this section has highlighted that inclusive growth has two components: how much growth increases, and how much equality increases. In the remainder of the paper, we will study the determinants of inclusive growth, and the implications for Asia, in a more systematic way, by estimating a cross-country model in which the dependent variable is the measure of inclusive growth developed by Anand et al. (2013), which takes into account changes in both growth and inequality. Before that, in the next session we review the literature on the determinants of inclusive growth.

### Indifference Curves for Selected Asian Countries

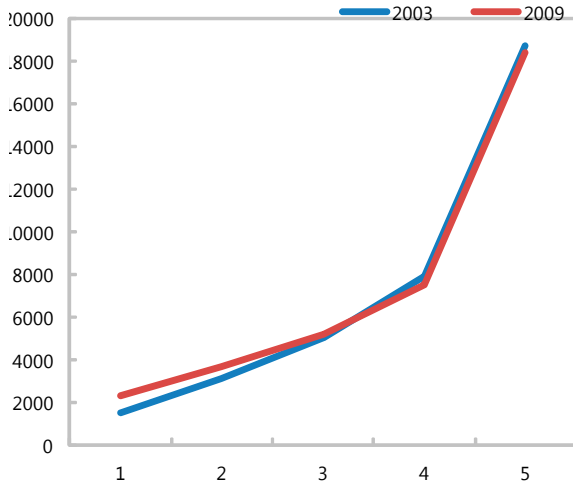
**Cambodia**  
(GDP per capita, PPP (constant 2011 international \$))



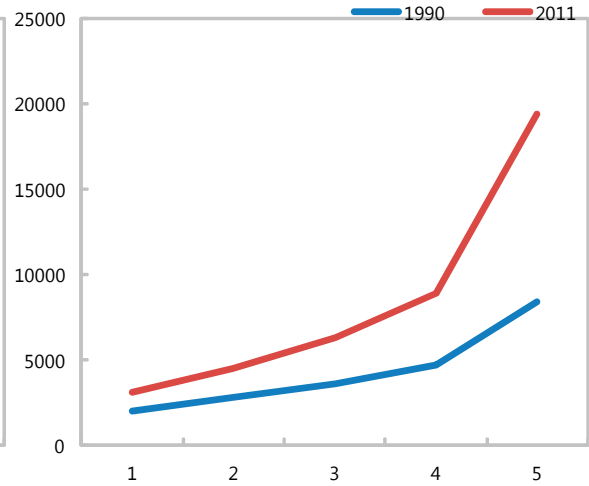
**China**



**Fiji**



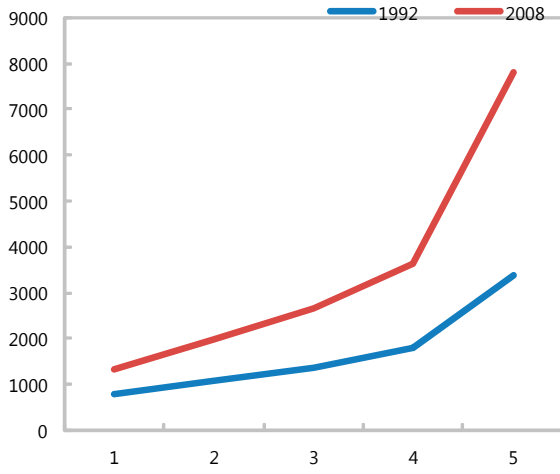
**Indonesia**



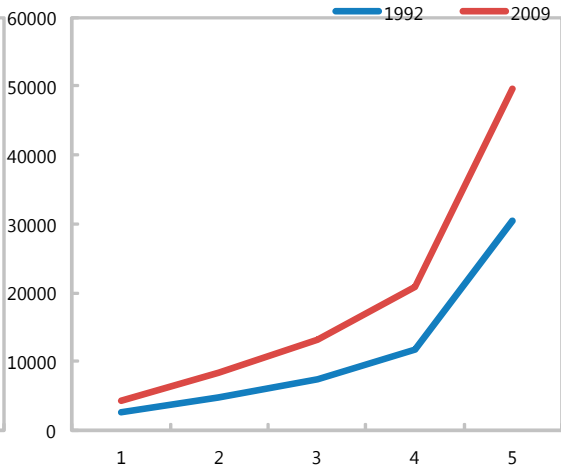
Source: PovStats

### Indifference Curves for Selected Asian Countries

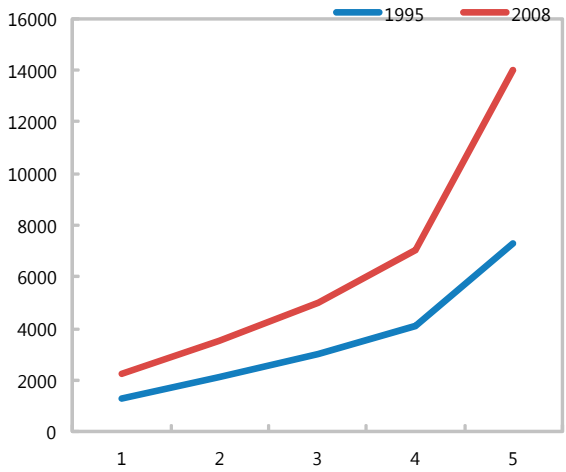
Laos



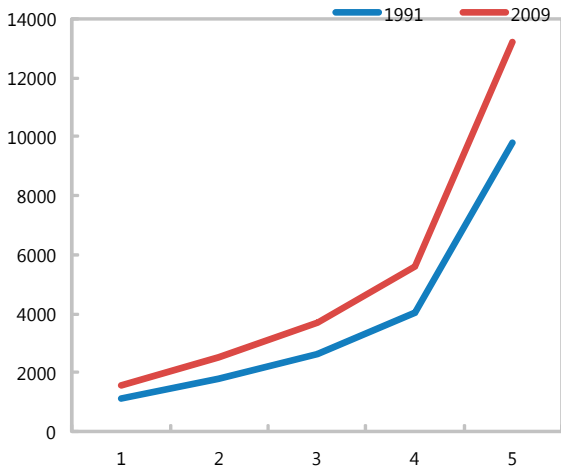
Malaysia



Mongolia

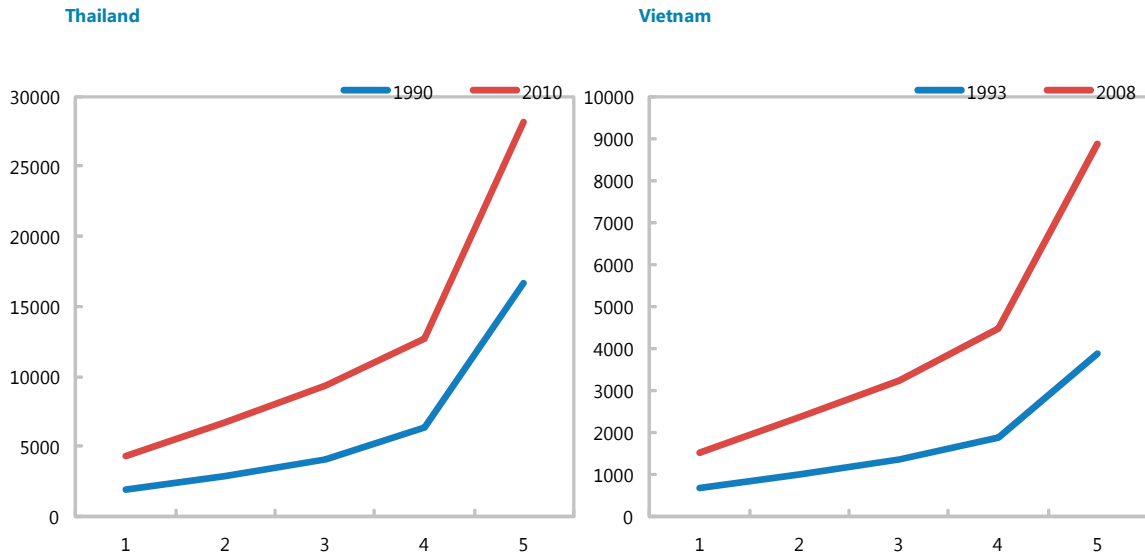


Philippines



Source: PovStats

### Indifference Curves for Selected Asian Countries



### III. DETERMINANTS OF INCLUSIVE GROWTH: LITERATURE REVIEW

There are very few studies which focus explicitly on inclusive growth. However, some existing studies find that fiscal, monetary and structural policies can play an important role in broadening the benefits of growth.

#### A. Fiscal Policy

Studies on the effects of fiscal redistribution on inclusive growth are divided, but the consensus seem to have shifted in recent years towards the idea that fiscal redistribution can foster both growth and equality. The negative effect of redistributive policies is indeed the central theme of Arthur Okun’s famous book on the tradeoffs between efficiency and equity (Okun 1975). While the argument that redistribution hurts growth is based on its direct effect, as higher taxes and subsidies dampen incentives to work and invest, some authors have also stressed that more indirect effects of redistribution imply that it can actually increase growth. Benabou (2000) and Saint-Paul and Verdier (1993) for example point that some redistributive policies, especially higher health and education spending, benefit the poor while at the same time enhancing growth through improved human capital. A recent study by Ostry et al. (2014), conclude that the combined direct and indirect effects of income redistribution are on average “pro-growth”. According to their findings, the treatment for inequality—redistribution—is not worse for growth than the diseases itself (inequality), as some policy makers may worry. Similarly, OECD (2014) also concludes that tackling inequality through tax and transfer policies does not harm growth, provided these policies are well designed and implemented. These findings seem to justify the use of fiscal redistribution as a policy tool to foster inclusive growth.

## **B. Monetary Policy**

Although the role of monetary policy in addressing inclusive growth has received relatively little attention in the economics literature, analysis by Romer et al. (1999) for example provide interesting insights. Their findings imply that, in pursuing its traditional goal of macroeconomic stability, monetary policy can also play a role in reducing poverty and inequality. This is because monetary policies aimed at restraining inflation and minimizing output fluctuations are likely to be associated with improved conditions for the poor over time. Moreover, the view that monetary policy's main contribution to macroeconomic stability is to maintain price stability (Coeuré 2012) is consistent with the idea that monetary policy can contribute to inclusive growth, given cross-country evidence showing that inflation worsens income distribution (Albanesi (2007), Li and Zou (2002)). Price stability maintained by credible monetary policy could also have an indirect positive effect on inclusive growth, as price stability appears to be conducive to economic growth, low unemployment and subdued income volatility (Coeuré 2012).

It is important to stress that other studies (e.g Coibion et al. 2012) have argued that contractionary monetary policy can increase inequality through various channels. While this discussion underscores that there is no agreement in the literature on the direction in which monetary policy aimed at macro stability affects inequality, it also reinforces the case for including in our model some variables which seek to empirically capture the impact of monetary policy.

## **C. Structural Policies**

The existing literature suggest that, in addition to fiscal and monetary policies, more long-term structural policies are needed for inclusive growth. Zhuang et al. (2014) document how key drivers of rapid growth—such as technological progress, globalization and market-oriented reforms—have also increased inequality in developing Asia by favoring skilled over unskilled labor, capital over labor, and urban and coastal areas over rural and inland regions. Zhuang et al (2014) conclude that, in order to soften the negative aspect of those changes, Asia needs effective labor market and industrial competitiveness policies to create productive jobs for a wide section of the population, so that growth can be sustainable and inclusive.

Bastagli et al. (2012) points to the fact that various countries have tried to better target program aimed at tackling inequality, for example by introducing “in-kind benefits” that link receipt of benefits to employment. Countries have also tried to increase the effectiveness of their active labor market programs by tightening rules for continued eligibility for unemployment benefits. Bastagli et al. (2012) argue that those efforts are all in the right direction and should be further encouraged.

Barro (2000) and Lundberg and Squire (2003) suggest that greater openness to trade would go along with higher inequality. However, more recently, IMF (2007) found that trade globalization is associated with a reduction in inequality, as opposed to financial globalization which is associated with an increase in inequality. This would seem to suggest that a policy of careful sequencing, in which barriers to trade are reduced before complete

financial account liberalization, would allow the benefits of globalization to be shared more equally.

#### IV. DETERMINANTS OF INCLUSIVE GROWTH: EMPIRICAL RESULTS

In this section, we assess the impact of various determinants of growth inclusiveness by estimating a structural model for a panel of 31 countries. The dependent variable is a measure of inclusive growth developed by Anand and et al. (2013), which integrates both the pace and distribution of economic growth.

Intuitively, this proxy of inclusive growth is a weighted average of growth in average income and of the change in an equity index which takes into account income distribution. The equity index is built in a way that it is bounded between zero and one, with one being a perfectly equitable income distribution. This measure of inclusive growth is equivalent to average income growth in the hypothetical case of growth which leaves income distribution unchanged, but deviates upward (downward) from average income growth when growth is achieved by making income distribution more equal (unequal). In other words, our proxy can be interpreted as a measure of growth in average income “corrected” for the equity impact. For a more technical discussion of this variable, see the appendix.<sup>6</sup>

Our proxy of inclusive growth is regressed on variables aimed at capturing the impact of the policies discussed in the previous section, as well as on relevant macroeconomic control variables. Regressors include: (i) the share of employment in agriculture, (ii) the unemployment rate, (iii) the difference between the Gini coefficients for market and net inequality, which captures the impact of fiscal redistribution (see Ostry et al. 2014), (iv) the CPI inflation rate, (v) GDP volatility, (vi) productivity, (vii) trade openness, (viii) the lag of GDP per capita. We also control for country fixed effects and we include a lag of the dependent variable to allow for autocorrelation. The countries included in the panel are selected based on data availability. The sample is annual and includes observations for 1992-2011 (or less, depending on availability). More details on data sources, variable definitions, and on the econometric specification are provided in the Appendix.<sup>7</sup> Table 1 presents the estimation of our benchmark model with various estimation techniques. The Hausman specification test concluded that a fixed effect model is preferred.

Our results suggest that redistributive fiscal policy and monetary policy aimed at macro stability are effective in fostering inclusive growth. The coefficient of fiscal redistribution is positive and statistically significant, meaning that the government’s redistributive policy encourages inclusive growth, as Ostry et al. (2014) suggested. The negative and somewhat significant (at the 17 percent level in the estimation with fixed effects and robust standard errors) coefficient on inflation and the negative and significant coefficient on GDP volatility

<sup>6</sup> See also Anand and et al. (2013) for more details.

<sup>7</sup> Due to data limitation, only two Asian countries, Cambodia and Thailand, are included in our sample.



(as measured by standard deviation of GDP growth over previous five years) imply that monetary policy aimed at macroeconomic stabilization—by containing inflation and income volatility—also supports inclusive growth.

Our analysis also shows that, in addition to the macro policies discussed above, longer-term structural reforms also matter. The positive and significant coefficient on trade openness (as measured by sum of export and import divided by GDP) is in line with recommendation by the IMF (2007) that encourages countries to open up trade to foster inclusive growth. The unemployment rate has a negative and statistically significant impact on inclusive growth. Our results imply that a one percentage point reduction in the unemployment rate would increase our measure of inclusive growth by 0.72 percentage points, a sizable impact. We also find that productivity has a positive and significant impact on growth inclusiveness. Our results can be read as implying that a USD 1,000 (at constant 1990 PPP exchange rates ) increase in GDP per person employed increases inclusiveness by 1 percentage point. This result is consistent with the conventional wisdom that raising average labor productivity would improve growth and its inclusiveness. Overall, our findings suggest that structural reforms that facilitate trade openness, lower unemployment and increase productivity, are effective policies to foster inclusive growth.

Table 1. Determinants of Inclusive Growth in a Panel of Countries: Regression Results 1/

	Fixed Effects (Robust SE)	Fixed Effects	Random Effects
<b>Dependent Variable: Proxy of Inclusive Growth</b>			
Redistribution (5-year moving average)	0.647 [1.94]*	0.647 [1.61] <sup>2/</sup>	0.195 [1.55]*
CPI Inflation	-0.103 [-1.41]	-0.103 [-2.43]**	-0.054 [-1.33]
GDP Volatility (Standard Deviation of Growth over 5 years)	-0.654 [-1.81]*	-0.654 [-2.39]**	-1.145 [-5.30]***
Share of Employment in Agriculture	0.185 [3.18]**	0.185 [2.56]**	0.115 [2.78]**
Unemployment Rate	-0.717 [-3.05]**	-0.717 [-3.01]***	-0.052 [-0.70]
Productivity	0.001 [3.25]**	0.001 [3.05]***	0.000 [3.05]**
Trade Openness	0.157 [4.45]***	0.157 [3.74]***	0.020 [1.52]
Lagged GDP per capita (t-1)	-0.002 [-4.34]***	-0.002 [-4.82]***	0.000 [-2.58]***
Lagged Dependent Variable (t-1)	-0.159 [-2.80]*	-0.159 [-2.33]**	-0.030 [0.48]
R-squared	0.424	0.424	0.313

Source: IMF Staff Calculations

1/ T-statistics are reported in parenthesis. \* denotes significance at 10% level, \*\* significance at 5% level, and \*\*\* significance at 1% level.

2/ Level of significance is 11 percent

In addition to fiscal, monetary, and structural policies, the structure of the economy also has an impact on the degree of growth inclusiveness. The coefficient on the share of employment in agriculture, which is included in the regression to control for the structure of the economy, is positive and statistically significant. This result suggests that a reduction in the share of agriculture in the economy reduces the degree of growth inclusiveness, probably due to an increase in inequality which accompanies the industrialization and urbanization process. However, we should not conclude from this result that industrialization is bad for growth. Indeed, as Ali and Zhuang (2007) noted, no country in developing Asia that has sustained fast growth and economic catch-up without successfully industrializing. We rather see our result as emphasizing the need to pursue adequate macroeconomic and structural policies for inclusive growth, in order to offset the negative but unavoidable impact of industrialization on inclusive growth.

Our results also shows that GDP per capita (which enters the regression on lagged form to address the endogeneity bias) has a negative and significant impact on inclusive growth. This can be explained in light of the convergence theory, which implies that poorer economies tend to grow faster than richer ones. Table 2 presents some robustness checks, in which alternative macroeconomic control variables are used. The results reported there broadly confirm the effectiveness of the macroeconomic and structural policies for inclusive growth discussed above. Our results are also robust to Arellano-bond estimation (not shown here for brevity) to account for endogeneity.

**Table 2. Determinants of Inclusive Growth in a Panel of Countries: Alternative Specifications 1/**

	<b>Productivity Growth as Alternative to Productivity</b>	<b>Export as Alternative to Trade Openness</b>	<b>GDP per capita as Alternative to Lagged GDP per capita</b>
<b>Dependent Variable: Proxy of Inclusive Growth</b>			
Redistribution (5-year moving average)	0.586 [1.73]*	0.585 [1.67] <sup>2/</sup>	0.655 [1.79]*
CPI Inflation	-0.073 [-1.77]	-0.100 [-1.38]	-0.100 [-1.28]
GDP Volatility (Standard Deviation of Growth over 5 years)	-0.463 [-1.66] <sup>2/</sup>	-0.785 [-2.21]**	-1.101 [-2.86]***
Share of Employment in Agriculture	0.155 [4.61]***	0.162 [2.87]***	0.186 [3.04]***
Unemployment Rate	-0.728 [-4.04]***	-0.769 [-3.43]***	-0.660 [-2.40]**
Productivity		0.001 [2.64]***	0.000 [1.50]
Trade Openness	0.107 [2.64]***		0.147 [3.80]***
Lagged GDP per capita (t-1)	0.000 [-2.29]**	-0.002 [-3.91]***	
Lagged Dependent Variable (t-1)	-0.174 [-3.08]***	-0.129 [-2.19]**	-0.148 [-2.57]**
Productivity Growth	0.517 [4.80]***		
Export (% GDP)		0.193 [3.01]***	
GDP per capita			-0.001 [-2.15]**
R-squared	0.551	0.424	0.339

Source: IMF Staff Calculations

1/ T-statistics are reported in parenthesis. \* denotes significance at 10% level, \*\* significance at 5% level, and \*\*\* significance at 1% level. 2/ Level of significance is 11 percent

In summary, the results presented in this section suggest that fiscal redistribution, monetary policy aimed at macro stability, and structural reforms to stimulate trade, reduce unemployment and increase productivity are important determinants of inclusive growth. In next section, we will discuss the implications of our findings for Asia.

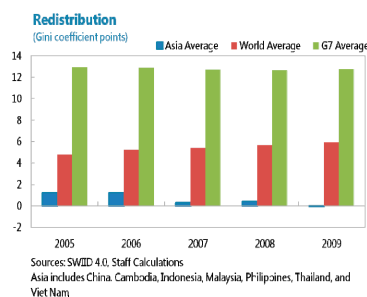
In interpreting our results, it is important to keep in mind that the inclusive growth concept we are using suffers from some limitations. In particular: i) it is not immune to the social welfare function problem (i.e. it implicitly assumes a social welfare function, and thereby an implicit weighting of growth vs inequality-reduction objectives); and ii) in practice, growth, more than inequality, may be the main driver of our inclusive growth measure, as China comes out as the Asian country with the highest degree of inclusive growth.

The fact that our inclusive growth proxy might be highly driven by growth might bias our results against finding that redistribution policy matters. We are therefore quite confident about our finding that fiscal redistribution is important in helping inclusive growth, because it would be robust to alternative measures of inclusiveness which would put more weight on inequality.

## V. INCLUSIVE GROWTH POLICIES IN ASIA

In Asia, policymakers have traditionally used macroeconomic policy primarily to support growth, rather than to redistribute income. However, growing concerns about rising inequality are prompting a major rethink, and many governments in the region are responding to the recent rise in inequality by developing medium-term development plans to make growth more inclusive (OECD 2014, ADB 2012).<sup>8</sup>

Conditional cash transfer programs (CCT) are being increasingly used in emerging economies, such as Brazil and Mexico, and considered as being successful (IMF 2011). For example, the Philippines have introduced a CCT program in 2008 (“the 4Ps”) to help redirect resources toward socially desirable programs in a well targeted way. As of June 2013, the program covered almost 4 million households. The econometric results that we have presented in the previous section are good news for such efforts, since they suggest that policies



<sup>8</sup> Examples of such development plans are: Cambodia (2009-2013) “Growth, employment, equity and efficiency”; the Philippines (2011-2016) “Pursuit of inclusive growth”; Thailand (2012-2016) “A happy society with equity, fairness and resilience under the philosophy of a Sufficiency Economy”; China (2011-2015) “Rebalancing the economy, ameliorating social inequality and protecting the environment”; and India (2012-2017) “Faster, more inclusive and sustainable growth”. Indonesia (2010-2014) also offers a vision supported by inclusive and fair development, and Malaysia (2011-2015) adopts an inclusive development approach, aiming at improving the livelihood of the poorer 40 percent of households.

can be successful in pursuing equality and growth at the same time. Despite ongoing efforts, fiscal redistribution in Asia—measured by the relative difference between the Gini coefficient of market income and that of disposable income—remains way below the world average and levels observed in G7 countries (text chart).

Given the existing space for further fiscal redistribution in Asia, we have estimated by how much this policy could contribute to inclusive growth in the region on the basis of our empirical analysis. The results are presented in Table 3. Specifically, we have calculated by how many percentage points our measure of inclusive growth could be increased for a representative Asian countries, if the redistribution index that we used as regressor were to increase from our Asian countries' average of 0.62 to: the world average of 5.40; and G7 average of 12.79. The results vary depending on which regression coefficients we use amongst the ones presented in Table 2, which correspond to various estimation methods. Overall, Table 3 suggests that the effect of expanding fiscal redistribution on inclusive growth could be sizeable compared to our panel's mean of inclusive growth of 3.7 percentage points, since the estimated improvement in the inclusive growth proxy range from about 1 to about 8 percentage points. Although our inclusive growth indicator is so driven by growth, this simulation results support the benefit of redistribution especially in the case of more aggressive reform scenario.

**Table 3. Estimated Policy Effects of Fiscal Redistribution on Inclusive Growth**  
(proxy of inclusive growth, percentage points)

	Fixed Effects	Random Effects	Average of Estimation Methods
Asia Average to World average (index from 0.62 to 5.40)	3.1	0.9	2.0
Asia Average to G7 average (index from 0.62 to 12.79)	7.9	2.4	5.1

\*Asia includes China, Cambodia, Indonesia, Malaysia, Philippines, Thailand and Viet Nam

Source: IMF staff calculations

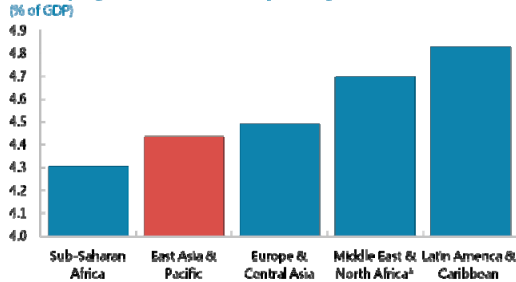
In drawing fiscal policy implications from our analysis, it is important to keep in mind that, while our results point to the fact that fiscal redistribution is on average associated with inclusive growth, we are not looking at the effects of particular fiscal instruments in isolation.<sup>9</sup> In practice, the effects of different redistributive fiscal policies on inequality and growth differ, and it could well be the case that some redistributive fiscal instrument might hurt growth. Thus it is very important for countries to adopt the redistributive fiscal policy instruments with the least negative efficiency impact. IMF (2014), provides a menu of policy options—which can help achieve redistributive goals in an efficient manner. The policies suggested by IMF (2014), which would need to be examined and applied selectively on a country specific base, include: using mean-tested and conditioned cash transfer programs; conditioning eligibility for benefits on participation in active labor market policies; making

<sup>9</sup> The same remarks applies to the results presented by Berg, Ostry, and Tsangarides (2014), although one important difference to keep in mind is that, while they focus on growth in their econometric analysis, our dependent variable is a weighted average of growth and inequality, so policies that substantially reduce inequality but lowers growth slightly would on net still improve inclusive growth in our analysis.

income (including pension income) taxation and benefit cuts progressive; greater use of in-work benefits, designing unemployment benefits in a way that strengthens incentives to take up employment; and expanding health coverage and reducing or eliminating user charges for low-income households.

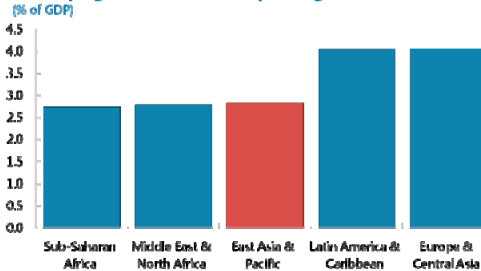
It is also important to keep in mind when considering our results, that the expansion of public spending needed to pursue redistributive fiscal policies may jeopardize fiscal sustainability in some circumstances. This implies that policies such as Korea's basic old age pension, Thailand's price subsidy for rice farmers, and India's food subsidy need to be well calibrated. Asian countries must strengthen their revenue base, rationalize subsidies, and target social and infrastructure spending to make sure that their impact is both growth-friendly and pro-poor. In particular, education and health, both areas in which the government spending is relatively low in developing countries in Asia (text chart), may need more public support.

**Developing Countries: Public Spending on Education 2010**



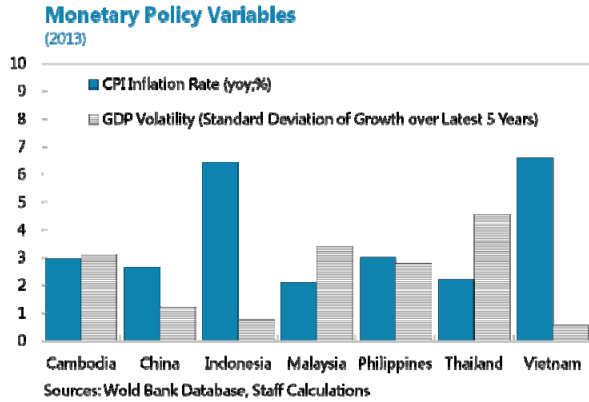
Sources: The World Bank  
\* 2008 Data

**Developing Countries: Public Spending on Health 2012**

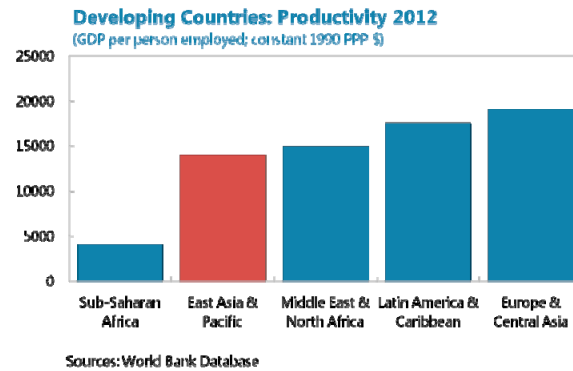
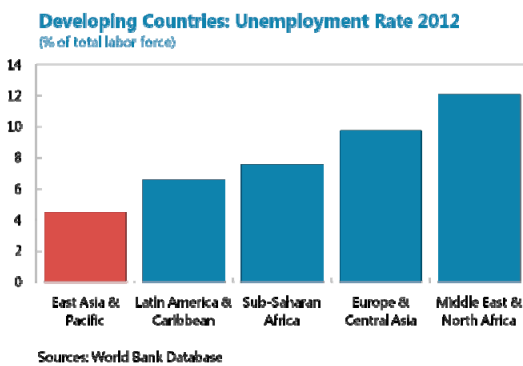


Sources: The World Bank

On the monetary policy side, our results suggest that policies should aim for longer term macro stability rather than trying to generate temporary booms. On one hand, expansionary monetary policies can help lower unemployment, which, as our model suggests, would contribute to inclusive growth. However, the cyclical effects of monetary policy on unemployment are inherently temporary and furthermore, expansionary monetary policies also generate inflation, which according to our estimates has negative effects on inclusive growth. Our estimates also suggest that lower GDP volatility is a key determinant of inclusive growth. The combined impact of these variables imply that monetary policies which seek to keep inflation low and aggregate demand stable are best for inclusive growth. Currently, observed inflation and GDP volatility in the region are not particularly worrisome on average (text chart); however, Asian policy makers should stand ready to act in case problems materialize in the future.

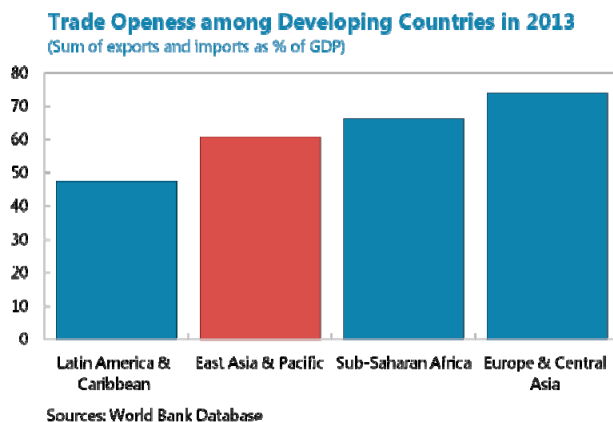


Our analysis also implies that fiscal and monetary policy alone cannot be sufficient for sustainable and inclusive growth, and policy makers should also pursue structural reforms. Our findings have stressed that labor market reforms to reduce unemployment and increase competitiveness by raising productivity are important for inclusive growth. The unemployment rate in developing countries in East Asia and Pacific is relatively low compared to other developing countries so there may not be much scope to act there. On the other hand, the developing Asia's productivity, as measured by GDP per person employed, is still low and there is a scope to improve labor productivity in general.



Our results also imply that further increasing trade openness would be beneficial in terms of growth inclusiveness. Trade openness in the region, measured by the sum of exports and imports as percentage share of GDP ranges from about 50 percent in Indonesia and China to about 150 percent in Thailand and Malaysia (text chart). A comparison of the level of trade openness in East Asia and the Pacific with that of other parts of the world suggests that there is some more room to improve trade openness, since the level of openness in the region as a whole is lower than in Sub-Saharan Africa and in Europe and Central Asia. One policy implication is that completing negotiation for various bilateral and multilateral trade talks in which several Asian countries are involved, such as the Regional Comprehensive Economic

Partnership (RCEP) and the Trans Pacific Partnership (TPP)<sup>10</sup>, would be beneficial for inclusive growth.



## VI. CONCLUSIONS

Despite rapid economic growth and reduction in poverty rate during the last decades, Asia's inequality is rising. Responding to increasing inequality and changing international policy consensus, policy makers in Asian countries are shifting their focus from the pace to both pace and distribution of growth. Our empirical model on a panel of countries confirms that redistributive fiscal policy, monetary policy aimed at macro stability, and structural reform such as efficient labor market and industrial competitiveness policies would help improve growth inclusiveness. Our simulation suggests that the effect of expanding fiscal redistribution on inclusive growth could be sizeable in Asia. We also think Asia on average has room to improve monetary policy to contain inflation and growth volatility, and pursue structural reforms to stimulate trade, reduce unemployment and increase productivity, which would further improve growth inclusiveness.

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<sup>10</sup> RCEP negotiations involve sixteen countries (ten ASEAN member countries, China, Japan, Korea, India, Australia and New Zealand) while TPP negotiations involve twelve countries (Australia, Brunei, Canada, Chile, Japan, Malaysia, Mexico, New Zealand, Peru, Singapore, the United States and Vietnam).



## APPENDIX

**A. Measure of Inclusive Growth**

The measure developed by Anand et al (2013), drawing on previous work by Ali and Son (2007), is based on a generalized concentrations curve, the social mobility curve  $S^C$ , such that:

$$S^C = \left( y_1, \frac{y_1 + y_2}{2}, \frac{y_1 + y_2 + y_3}{3}, \dots, \frac{\sum_j^n y_j}{n} \right)$$

where  $n$  is the number of persons in the population with incomes  $y_1, y_2, \dots, y_n$ , where  $y_1$  is the poorest person and  $y_n$  is the richest person.

The  $S^C$  can be used to calculate an index, which we can call the Social Mobility Index (SMI), defined as the area under the  $S^C$ , that is,  $\bar{y}^* = \int_0^{100} \bar{y}_i d_i$ .

The greater the  $\bar{y}^*$ , the greater is the income. If everybody has the same income (completely equitable income distribution) then  $\bar{y}^* = \bar{y}$ . An income equity index (IEI) can therefore be defined as

$$\omega = \bar{y}^* / \bar{y}$$

The value of the IEI is equal to one when the income distribution is totally equal (i.e. everyone possesses the same income,  $\bar{y}$ ), and zero when it is totally unequal (i.e. one person possesses the entire income). Rearranging the terms, we obtain:

$$\bar{y}^* = \omega \bar{y} \quad (1)$$

Equation (1) can be ‘decomposed’ by total differentiation:

$$d\bar{y}^* = \bar{y}d\omega + \omega d\bar{y} \quad (2)$$

Equation (2) shows that change in the SMI is a weighted average of the change in IEI and of the change in average income, whose weights are the level of the counterpart: when the average income (equity) is high, the contribution of change in equity (income) is higher, and viceversa. Since inclusive growth requires  $d\bar{y}^* > 0$ , equation (2) also shows that inclusive growth can be achieved by: (i) increasing  $\bar{y}$ , i.e. increasing average income through growth; (ii) increasing the equity index of income  $\omega$ , through increasing equity; or (iii) a combination of (i) and (ii). Accordingly, as in Anand et al (2013), we use the growth in  $\bar{y}^*$  — a proxy of inclusive growth—as dependent variable in our regressions.

## B. Benchmark Model

An econometric model of determinants of inclusive growth was estimated for a panel of 31 countries for the 20 years between 1992 and 2011 (or less, depending on availability).

### 31 Countries were selected based on Data Availability

Armenia; Belarus; Bolivia; Brazil; Cambodia; Colombia; Costa Rica; Croatia; Dominican Republic; Ecuador; Estonia; Georgia; Guatemala; Hungary; Kazakhstan; Kyrgyz Republic; Latvia; Lithuania; Macedonia, FYR; Mexico; Moldova; Peru; Poland; Romania; Russian Federation; Slovak Republic; Slovenia; Thailand; Turkey; Ukraine; Uruguay

Our dependent variable is a proxy of inclusive growth, calculated based on the method developed by Anand and et al. (2013) using data available from the World Bank Database.

Explanatory variables and data sources are as follows:

- The share of employment in agriculture is measured as % of total employment available from the World Bank Database.
- Unemployment is measured as % of total labor force (modeled ILO estimate) available from the World Bank Database.
- Redistribution (which enters the regression in 5-year moving average), is calculated based on the method used by Ostry et al. (2014) using data available on the Standardized World Income Inequality Database (SWIID) 4.0. (available on the web at : <http://myweb.uiowa.edu/fsolt/swiid/swiid.html>) It is defined as the difference between the Gini coefficient for market and for net inequality.
- CPI Inflation is the annual percentage change in the consumer prices available from the World Bank Database.
- GDP Volatility is calculated as standard deviation of GDP growth over previous five years using real growth data from the World Bank Database.
- Productivity is measured as GDP per person employed (constant 1990 PPP \$) available from the World Bank Database.
- Trade openness is calculated as amount of trade (sum of export and import) divided by GDP, available from the World Bank Database.
- Lag of GDP per capita is a t-1 GDP per capita data available from the World Bank Database.

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