



# IMF Working Paper

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## The Elusive Quest for Inclusive Growth: Growth, Poverty, and Inequality in Asia

*Ravi Balakrishnan, Chad Steinberg, and Murtaza Syed*

## **IMF Working Paper**

Asia and Pacific Department

### **The Elusive Quest for Inclusive Growth: Growth, Poverty, and Inequality**

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Authorized for distribution by Markus Rodlauer

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#### **Abstract**

This paper assesses how pro-poor and inclusive Asia's recent growth has been, and what factors have been driving these outcomes. It finds that while poverty has fallen across the region over the last two decades, inequality has increased, dampening the impact of growth on poverty reduction. As a result, relative to other emerging and developing regions and to Asia's own past, the recent period of growth has been both less inclusive and less pro-poor. Our analysis suggests a number of policies that could help redress these trends and broaden the benefits of growth in Asia. These include fiscal policies to increase spending on health, education, and social safety nets; labor market reforms to boost the labor share of total income; and reforms to make financial systems more inclusive.

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## I. INTRODUCTION

Income inequality has risen across the world over the last two decades. The academic literature attributes the rise mainly to three factors: globalization, skill-biased technical change, and the decreasing bargaining power of workers. The global crisis and recent social turmoil in different parts of the world have heightened awareness of the potential impact of rising inequality on economic and social stability and on the sustainability of growth. Such concerns have not bypassed Asia, with policymakers throughout the region looking for ways to arrest rising inequality and make growth more inclusive.

This paper examines how pro-poor and inclusive Asia's recent growth has been compared to its own history and other emerging regions, what factors lie behind these outcomes, and which policies could be considered to help make growth more inclusive in the region. The main findings are that poverty has fallen in recent decades in Asia but inequality has increased, and that the rise in income inequality has dampened the impact of growth on poverty reduction. Relative to other regions and to Asia's own past, the recent period of growth has been both less inclusive and less pro-poor. There is scope for policy measures to broaden the benefits of growth, notably enhanced spending on health and education, stronger social safety nets, labor market interventions, financial inclusion, and strengthened governance.

The rest of this paper is organized as follows. Section II motivates our research by comparing recent trends in poverty and inequality in Asia to those in other regions of the world. Section III proposes ways to quantify how pro-poor and inclusive growth is in any economy and uses a regression approach to assess Asia's performance on these metrics. Section IV analyzes what factors contribute to making growth pro-poor and inclusive. On this basis, section V proposes potential policy interventions for broadening the benefits of growth. Section VI concludes.

## II. HOW DOES ASIA COMPARE TO OTHER REGIONS?

Over the last two decades, growth in most Asian economies has been robust and higher on average than in other emerging regions (Figure 1). In turn, this has translated into significant reductions in poverty; nevertheless, Asia is still home to the largest number of the world's poor, with China and India together accounting for almost half (Table 1 and Box 1).

**Table 1. Number of People Living on Less Than \$1.25 per Day**  
(At 2005 PPP prices)

|                                 | Percent of Population |      | Number (millions) | Percent of World Total |      | Number (millions) | Percent of World Total |  |
|---------------------------------|-----------------------|------|-------------------|------------------------|------|-------------------|------------------------|--|
|                                 | 1990                  | 2008 |                   | 1990                   | 2008 |                   |                        |  |
| Europe and Central Asia         | 2                     | <1   | 9                 | <1                     | 2    | 0                 |                        |  |
| Latin America and the Caribbean | 12                    | 6    | 53                | 3                      | 37   | 3                 |                        |  |
| Middle East and North Africa    | 6                     | 3    | 13                | 1                      | 9    | 1                 |                        |  |
| Sub-Saharan Africa              | 57                    | 48   | 290               | 15                     | 386  | 30                |                        |  |
| <b>Asia</b>                     | 55                    | 25   | 1544              | 81                     | 855  | 66                |                        |  |
| China                           | 60                    | 13   | 683               | 36                     | 173  | 13                |                        |  |
| India                           | 47                    | 33   | 433               | 23                     | 395  | 31                |                        |  |
| Rest of Asia                    | 58                    | 31   | 427               | 22                     | 287  | 22                |                        |  |
| Total                           | 43                    | 22   | 1909              |                        | 1290 |                   |                        |  |

Source: World Bank, *PovcalNet* database.

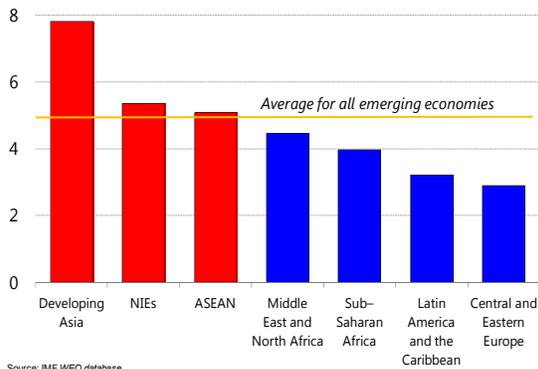
## Figure 1. Stylized Facts: Asia's Growth Experience over the Last Two Decades

Over the last two decades, Asia's growth has been much faster than its comparators outside the region...

...enabling significant reductions in poverty.

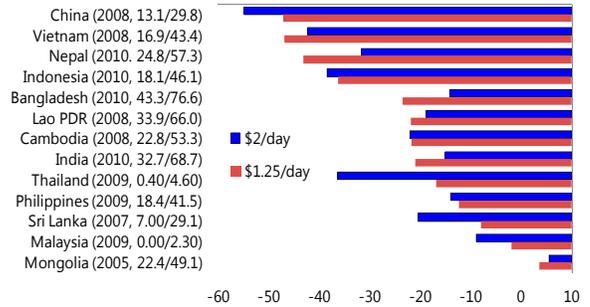
### Emerging Markets: Real GDP Growth

(annual percent change, 1990-2010)



### Asia: Change in Poverty Headcount, Last Two Decades<sup>1</sup>

(in percentage points since 1990)



Sources: World Bank; and IMF staff calculations.

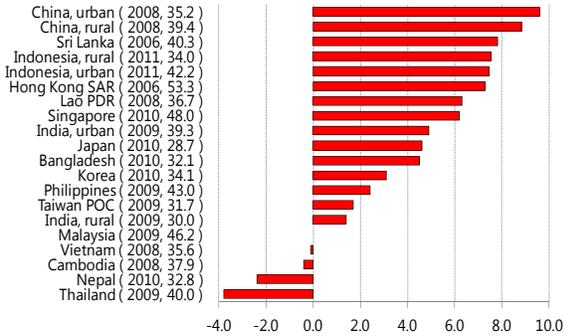
<sup>1</sup> At 2005 PPP prices. In parentheses, the latest available year and corresponding poverty headcount ratios at \$1.25 and \$2 per day, respectively.

However, inequality has increased across most of the region...

...in contrast to Asia's past record of equitable growth...

### Asia: Change in Gini Index, Last Two Decades<sup>1</sup>

(in Gini points, since 1990)

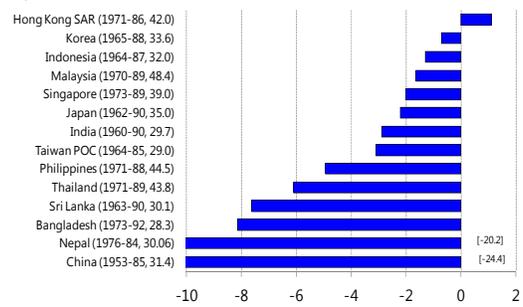


Sources: World Bank; national authorities and IMF staff calculations.

<sup>1</sup> In parentheses, the latest available year and corresponding Gini coefficients.

### Asia: Change in Gini Index, Pre-1990<sup>1</sup>

(in Gini points)



Sources: Milanovic (2010); and IMF staff calculations.

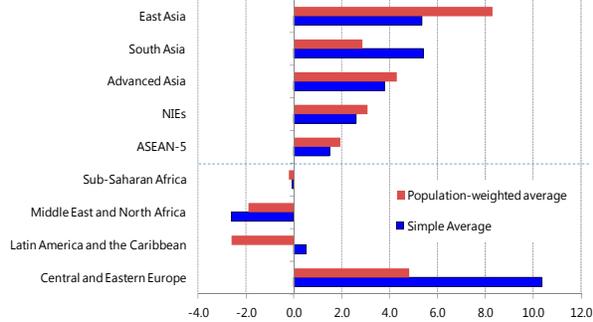
<sup>1</sup> In parentheses, the time period and end-value for the Gini coefficients.

...and more pronounced than in most other emerging markets...

...leaving parts of Asia less equitable than the Middle East and approaching Sub-Saharan Africa and Latin America.

### Emerging Economies: Change in Gini Index, Last Two Decades

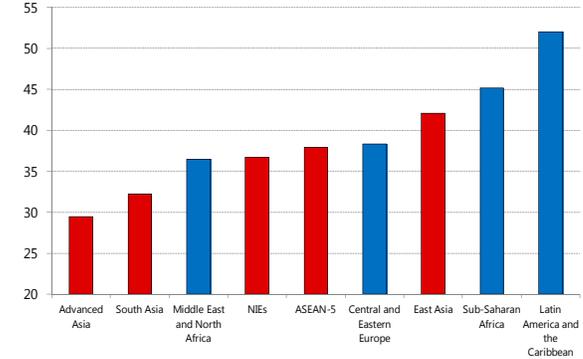
(in Gini points)



Sources: CEIC Data Company Ltd.; World Bank, PovcalNet database; WIDER income inequality database; Milanovic (2010); national authorities and IMF staff calculations.

### Latest Gini Index

(population-weighted, in Gini points)



Sources: CEIC Data Company Ltd.; World Bank, PovcalNet database; WIDER income inequality database; Milanovic (2010); national authorities and IMF staff calculations.

### **Box 1. China and India: Why Does a Rising Tide Not Lift All Boats?**

***Both China and India have seen considerable poverty reduction since their economic take-offs.***

**In China, poverty fell fastest during the early 1980s and mid-1990s, spurred by rural economic reforms and low initial inequality.** With a relatively equal allocation of land—through land use rights rather than ownership—agricultural growth unleashed by the rural economic reforms of the early 1980s translated into rapid poverty reduction. High access to health and education opportunities also ensured that the subsequent nonfarm growth was poverty reducing. When China's reforms began, it was one of the poorest countries in the world. In 1981, 84 percent of the population lived on less than \$1.25 a day, the fifth-largest poverty incidence in the world. By 2008, this proportion had fallen to 13 percent, well below the developing country average.

**Since the mid-1990s, however, the nature of poverty in China has been changing.** Growth in the agricultural sector has slowed and the benefits of agrarian reforms have started to dissipate. This has resulted in slower growth in rural employment and incomes, and an increased rural-urban income gap. At the same time, there has also been a rise in urban poverty, partly reflecting large-scale migration from rural areas.

**India has also had success in reducing poverty, although at a somewhat slower rate than in China.** In 1981, 60 percent of India's population lived on less than \$1.25 a day, lower than in China. By 2010, the share fell to 33 percent, but now two and a half times that in China. While reforms started about a decade later in India, the growth elasticity of poverty reduction has also been lower than in China (as discussed in section III).

**High inequality in education and health may have contributed to this outcome.** India's schooling, health and gender inequalities were larger than those of China at the beginning of their reform periods, and, despite significant progress in the last decade, continue to be high. This could have impeded the poor from being able to contribute to, and benefit from, India's high growth. These detrimental effects may have been especially pronounced since India's trend growth has been higher in the modern services sector, which is largely urban-based and requires higher human capital.

***However, inequality has increased.***

**The rise has been more dramatic in China.** According to official estimates, China's Gini increased from 37 percent in the mid 1990s to 49 percent in 2008. It has since ticked down to 47.4 in 2012 but remains higher than that in the United States and close to levels in parts of Africa and Latin America. India has also witnessed a rise in inequality, though much less pronounced than in China, with its Gini ticking up from 33 percent in 1993 to 37 percent in 2010 according to the ADB.

**However, there are other important dimensions of inequality in India that are not evident in conventional inequality indices based on consumption or income.** These are inequalities associated with identity, such as gender or caste, and inequalities in access to education and health. According to some estimates, while growth has benefitted almost every segment of society, poverty reduction has been slower in disadvantaged groups (notably Scheduled Castes and Scheduled Tribes) during the reform period (Thorat and Dubey, 2012). This is consistent with the econometric results presented in section III.B.

**In both China and India, a significant part of the rise in inequality reflects a widening of disparities between rural and urban areas as well as between regions.** Estimates suggest that spatial disparities account for between one-third and two-thirds of overall inequality in China and India (Asian Development Bank, 2012). In China, the rural-urban income gap has increased significantly since 1998, reaching a ratio of more than 3:1. Notwithstanding a slight decline since 2009, this gap remains high by international standards and is estimated to explain almost half of overall inequality in China. For most other Asian economies, the ratio

### **Box 1. China and India: Why Does a Rising Tide Not Lift All Boats? (concluded)**

falls between 1.3–1.8 (Eastwood and Lipton, 2004). At the same time, the historically slower pace of income growth in central and western regions, compared to the export heartlands on China's eastern coast, has also opened up income gaps among regions. Similar patterns have been observed in India, where the ratio of urban to rural per capita consumption increased continuously from around 1.5 in 1987–8 to nearly two in 2009–10. At around three, rural-urban per capita income differentials are even larger (Sen and Himanshu, 2005) and regional disparities have also increased recently: for instance, the ratio of the per capita GDP of the richest major state (Punjab) to that of the poorest major state (Bihar) rose from 2.9 in 1980 to 4.1 in 2010.

***The existing literature highlights a variety of potential causes of this rising inequality, including:***

**Health and education spending.** Fiscal decentralization is much higher in China than in OECD and middle-income countries, particularly on the spending side. More than half of all expenditure takes place at the sub-provincial level, including social spending, but they lack own-revenue sources. The result has been that poor villages cannot afford to provide good services, and poor households cannot afford the high private costs of basic public services. Public spending per capita in the richest province is almost 50 times that in the poorest. Similar patterns are observed in India, putting an onus on central efforts to assure greater fiscal redistribution to poor regions from better-off ones.

**Declining labor share of income.** Across most of the OECD as well as Asia, the last two decades have seen a decline in the income share of labor and a rise in that of capital—in the case of China and India, the share of labor income to manufacturing value added fell from 50 percent in both countries during the early 1990s to around 40 and 25 percent, respectively, by the mid 2000s according to the Asian Development Bank (2012). This contributes to inequality, since capital income tends to be less evenly distributed than income from basic wage labor. It is partly the result of technological change that has raised the return to capital and lowered the employment elasticity of growth—between 1991 and 2011, this elasticity fell from 0.44 to 0.28 in China and from 0.53 to 0.41 in India. This has been exacerbated in the case of China by an artificially low cost of capital. In both countries, the pool of surplus labor in rural areas has also reduced the bargaining power of workers, contributing to holding down wages relative to productivity. In India, for instance, between 1990 and 2007, while labor productivity rose by nearly 7½ percent annually, real wages grew by only 2 percent per year (Kumar and Felipe, 2010).

**Unbalanced regional development.** The coastal regions, China's export heartlands, have provided more opportunities for nonagricultural employment and income. In India, coastal states have also fared better than inland ones. In both cases, this was partly the result of geographical advantages but compounded by preferential policies as well as persistent disparities in human capital and infrastructure (Fan, Kanbur, and Zhang, 2009).

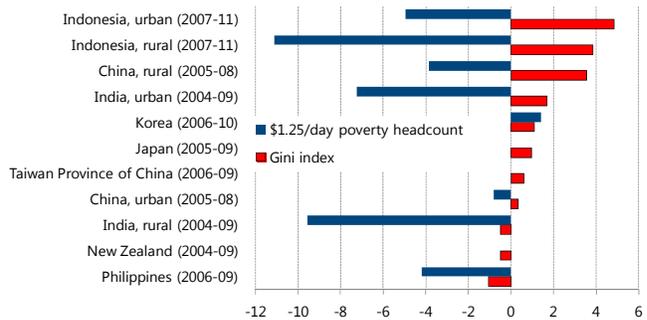
**Skill premia and increasing returns to human capital.** Between 1988 and 2003, wage returns to one additional year of schooling increased in China from 4 to 11 percent (Zhang and others, 2005) and disparities in educational attainment beyond primary school have emerged. In India, schooling inequalities are even larger and have inhibited pro-poor growth (Ravallion and Datt, 2002).

**Financial exclusion.** For both China and India, several empirical studies suggest that uneven access to financial services has contributed to inequality. For instance, Zhang and others, 2003 find that after controlling for other factors—such as provincial infrastructure, institutional transition in rural areas, and degree of international integration—differential financial development and urban biases in lending have contributed significantly to the rise in China's urban-rural income disparity since the late 1980s. In the case of India, Ang (2008) finds that underdevelopment of financial systems hits the poor more than the rich, resulting in higher income inequality.

Moreover, inequality has increased across Asia—in sharp contrast to the previous three-decade record of fast and equitable growth in Japan, the Newly Industrialized economies (NIEs), and the ASEAN. While some decline in the impact of growth on poverty is to be expected as poverty rates fall, in Asia this has been exacerbated by the larger rise in inequality than in other emerging regions. Earlier work (IMF, 2006) attributes this rise in inequality to skill-biased technological change and the transition from agriculture to industry for lower-income Asian economies (consistent with the Kuznets hypothesis).<sup>2</sup> At the same time, even as the size and purchasing power of Asia’s middle class has grown in the last two decades, their share of overall income has fallen while that of the richest quintile has increased. By contrast, in Latin America and the Middle East and North Africa, the share of the richest quintile has fallen.

More recently, poverty has generally continued to fall in Asia, but the global crisis has exacerbated the rise in inequality in several economies for which data are available (Figure 2). This trend has been particularly pronounced in rural China and Indonesia, but has also been observed for Japan and some NIEs.

**Figure 2. Selected Asia: Change in Poverty and Inequality during Global Crisis**  
(In percentage points)



Sources: CEIC Data Company Ltd.; PovcalNet database; WIDER income inequality database; national authorities and IMF staff calculations.

### III. THE LINKS BETWEEN GROWTH, POVERTY, AND INEQUALITY

Going beyond the stylized facts, regression analysis can be used to quantify how pro-poor and inclusive growth has been in Asia relative to other emerging regions.<sup>3</sup>

#### A. What is Pro-Poor and Inclusive Growth?

There are various ways to interpret what it means for growth to be inclusive and pro-poor. In this paper, we follow the Ravallion and Chen (2003) approach and define growth as pro-poor simply if it reduces poverty. Inclusive growth, on the other hand, is defined as growth which is not associated with an increase in inequality, following Rauniyar and Kanbur (2010). In particular, we define growth as inclusive when it is not associated with a reduction in the income share of the bottom quintile of the income distribution.

<sup>2</sup> Jaumotte, Lall, and Papageorgiou (2008) also argue that skill-biased technological progress is a key driver of rising inequality.

<sup>3</sup> For the econometric analysis, the main sources of data are the latest versions of the *PovcalNet* database (updated in July 2012) and the *Penn World Tables*. *PovCalNet* is chosen as major efforts have been made to make its inequality and poverty data comparable across surveys and countries: it draws on 700 household surveys and 120 countries (econ.worldbank.org/povcalnet). To this, household survey data for the NIEs is added, resulting in an unbalanced panel between 1971 and 2010, with the sample skewed toward the latter part of the period. See Appendix 1 for further details.

## B. How Pro-Poor is Growth?

To examine the relationship between poverty reduction and growth, the following regression is estimated:

$$\ln P_{i,t} = \gamma_i + \beta_{i,d} \ln y_{i,t} + \delta \ln GINI_{i,t} + \rho_d + \varepsilon_{i,t} \quad (1)$$

where  $P_{i,t}$  is the poverty headcount below the \$2 line in country  $i$  at time  $t$ ,  $\gamma_i$  is a country dummy,  $y_{i,t}$  is per capita income in country  $i$  at time  $t$ ,  $GINI_{i,t}$  is the GINI coefficient in country  $i$  at time  $t$ , and  $\rho_d$  is a set of decade dummies. As the equation is in logs,  $\beta$  gives the impact of income growth on poverty reduction, and  $\delta$  gives the impact of a change in the Gini coefficient.  $\beta$  is allowed to vary across country and decade.

The regression model follows the literature that argues while per capita income growth is a key factor, the same rate of growth can bring very different rates of poverty reduction, meaning that other factors matter. In particular, factors that change the income distribution (e.g., shocks to agricultural incomes, changes in tax regimes, etc). Thus following Ravallion and Chen (1997), we allow poverty to also depend on the gini coefficient, which proxies for the underlying factors causing a change in the distribution of income. One can think of growth in average income shifting the income distribution and changes in inequality modifying the shape of the distribution, both of which can affect the poverty headcount (the cumulative distribution below a line at a particular income level, in this case the 2 dollar line).

To estimate the fixed effects, we need to choose a set of benchmark countries. Since we are mainly interested in comparing Asia with Latin America, we include all other countries in other emerging/developing regions in the benchmark. We also use an instrumental variables approach to take account of endogeneity bias and potential measurement error in the income variable. In particular, we use lags of real per capita income as measured in the *Penn World Tables (PWT)* to instrument the household-survey-based average income variable.<sup>4</sup> Specifically, the lagged variables help correct for endogeneity bias by identifying the component of income that is pre-determined, and the PWT measure of income help corrects for measurement error by identifying the component of income as measured by the household survey that is also consistent with this secondary measure of income. As both endogeneity bias and measurement error are relevant, the direction of the bias in the estimates that are not instrumented is uncertain.

The regression analysis presented in Table 2 suggests that growth is in general pro-poor, leading to significant declines in poverty across all economies and time periods. Specifically, a 1 percent increase in real per capita income leads to about a 2 percent decline in the poverty headcount (column 1). However, a 1 percent increase in the Gini coefficient more or less directly offsets the beneficial impact on poverty reduction of the same increase in income. Moreover, inequality

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<sup>4</sup> These passed standard tests of instrument validity and strength.

interacts with income, meaning that a higher level of inequality tends to reduce the impact of income growth on poverty reduction (column 2).<sup>5</sup> An increase in the Gini coefficient of about 25 percent (for instance, as observed in urban China from 1995–2005) reduces the impact of a 1 percent increase in income to about a 1½ percent decline in the poverty headcount from 2 percent in the base case. The implication of this result is that past rises in inequality in Asia are likely to reduce the future impact of income growth on poverty, even if the level of inequality remains constant. In addition, the impact of growth on poverty reduction is found to be somewhat lower during the 1990s, possibly due to a changing nature of growth (column 3).

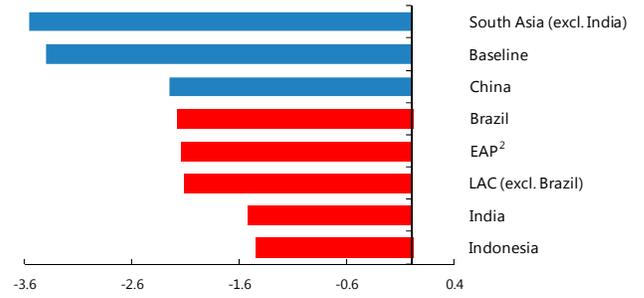
| Variables                         | (1)<br>p             | (2)<br>p             | (3)<br>p             | (4)<br>p             | (5)<br>p              |
|-----------------------------------|----------------------|----------------------|----------------------|----------------------|-----------------------|
| Log of mean household income (y)  | -2.146***<br>[0.262] | -8.205***<br>[1.079] | -2.627***<br>[0.300] | -3.406***<br>[0.428] | -10.536***<br>[1.232] |
| EAP*y                             |                      |                      |                      | 1.258**<br>[0.616]   | 1.138*<br>[0.644]     |
| South Asia*y                      |                      |                      |                      | -0.159<br>[1.202]    | 1.177**<br>[0.584]    |
| Latin America and the Caribbean*y |                      |                      |                      | 1.294***<br>[0.502]  | 0.653<br>[0.506]      |
| China*y                           |                      |                      |                      | 1.149<br>[0.712]     | 2.046***<br>[0.743]   |
| India*y                           |                      |                      |                      | 1.889***<br>[0.675]  | 2.178***<br>[0.559]   |
| Brazil*y                          |                      |                      |                      | 1.220***<br>[0.436]  | 0.640<br>[0.409]      |
| Indonesia*y                       |                      |                      |                      | 1.957***<br>[0.433]  | 2.432***<br>[0.464]   |
| Log of Gini index                 | 2.258***<br>[0.463]  | -5.838***<br>[1.205] | 2.277***<br>[0.450]  | 2.003***<br>[0.499]  | -7.799***<br>[1.502]  |
| Ninety ( 90s decade dummy)        |                      |                      | -0.743<br>[0.536]    | 0.074<br>[0.075]     | 0.054<br>[0.075]      |
| Noughty (2000s decade dummy)      |                      |                      | 0.694<br>[0.647]     | 0.262**<br>[0.112]   | 0.142<br>[0.099]      |
| Ninety*y                          |                      |                      | 0.193*<br>[0.110]    |                      |                       |
| Noughty*y                         |                      |                      | -0.067<br>[0.126]    |                      |                       |
| Income-Gini interaction           |                      | 1.723***<br>[0.267]  |                      |                      | 2.035***<br>[0.317]   |
| Observations                      | 579                  | 579                  | 579                  | 579                  | 579                   |
| R-squared                         | 0.558                | 0.654                | 0.558                | 0.461                | 0.591                 |
| Number of clusters                | 98                   | 98                   | 98                   | 98                   | 98                    |
| Model                             | FE IV                 |

<sup>1</sup> Dependent variable is the log of poverty headcount below the \$2 line. Robust standard errors in brackets.  
\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

<sup>5</sup> Of course, the overall impact of an increase in the gini coefficient on poverty also depends on its direct impact and not just its indirect effect through income. For the regression in column 2, the overall impact of the gini on the poverty headcount is given by  $(1.723y - 5.838) \cdot \log \text{ gini}$ . Thus it is only positive if the log of mean household income is above a certain threshold. This threshold is passed for all Asian countries in the sample using data from their latest household survey.

The relationship, however, varies across regions and economies (columns 4 and 5 and Figure 3). In particular, in East Asia and Latin America, income growth has a significantly lower impact on poverty than in the Middle East and North Africa, Eastern Europe and Central Asia, and sub-Saharan Africa, which make up our baseline economies. The impact is particularly weak in India and Indonesia, where it is significantly less than the impact of an equivalent reduction in the Gini coefficient.<sup>6</sup>

**Figure 3. Income Elasticity of Poverty Reduction<sup>1</sup>**  
(Impact on poverty headcount, in percent, of 1-percent increase in per-capita income)



Sources: World Bank, *PovcalNet*, *Penn World Tables*; and staff calculations.  
<sup>1</sup> The red bars represent countries for which the estimated income elasticity of poverty reduction is significantly different to that of the baseline countries.  
<sup>2</sup> EAP includes Cambodia, Malaysia, Philippines, Thailand, and Vietnam.

### C. How Inclusive is Growth?

As a second step, we follow Dollar and Kraay (2002) and look at the relationship between per capita income and a broader definition of “the poor”—the income of the bottom quintile of the income distribution. If the income of the poor tends to rise equiproportionately with average incomes—that is, income growth is not associated with a decrease in the income share of the bottom quintile—then growth would be considered *inclusive*. Specifically, we use the following panel regression model:

$$\ln y_{i,t} = \theta_i + \lambda_{i,d} \ln y_{i,t} + \eta_d + \varepsilon_{i,t} \quad (2)$$

where  $y_{i,t}$  is per capita income of the bottom quintile of the income distribution in country  $i$  at time  $t$ ,  $\theta_i$  is a country dummy,  $y_{i,t}$  is per capita income in country  $i$  at time  $t$ , and  $\eta_d$  is a set of decade dummies.  $\lambda$ —which is allowed to vary across country and decade—is the elasticity of growth in income of the bottom quintile with respect to growth in average income. This equation can be rewritten as:

$$\ln Q1_{i,t} = \theta_i + (\lambda_{i,d} - 1) \ln y_{i,t} + \eta_d + \varepsilon_{i,t} \quad (3)$$

where  $Q1_{i,t}$  is the bottom quintile share of the income distribution in country  $i$  at time  $t$ . As equation 3 shows, if  $\lambda$  is less than one, income growth is associated with a decrease in the income share of the bottom quintile: in other words, growth is *not* inclusive. Equation 3 is the model we estimate. Given that much of the ongoing debate on inclusiveness has not just focused on the poorest fifth of society being left behind, but the richest fifth doing particularly well, we also estimate a similar relationship for income in the top quintile. As with the pro-poor regressions, we use an instrumental variables approach to take account of endogeneity bias and potential measurement error in the income variable.

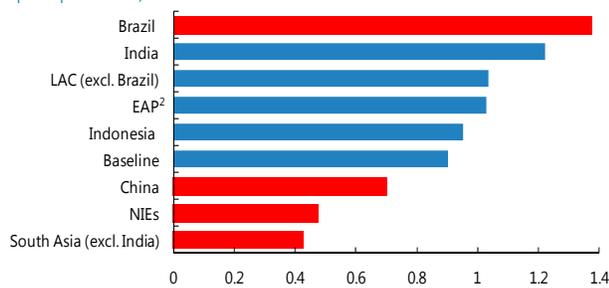
<sup>6</sup> Other regressions not reported here found that the coefficient on the Gini does not significantly vary across regions.

The results are shown in Table 3. If we simply pool all observations or just use country specific effects, then we get the familiar Dollar-Kraay result that average incomes of the poorest fifth of society rise proportionately with per capita income (column 1), something which also holds for the richest fifth at the 5 percent significance level (column 4). However, once we instrument for the income variable (columns 2 and 5), the results change: income of the bottom quintile rises significantly *less* than proportionately with average income, and income of the top quintile rises significantly *more* than proportionately with average income—an important departure from the Dollar-Kray stylized fact. These results also validate concerns that both measurement error and attenuation bias affected the estimates presented in Dollar-Kray.

Moreover, these elasticities vary significantly across regions and countries (columns 3 and 6). For the bottom quintile, the elasticity is significantly less than one for China, the NIEs, and South Asia (excluding India), whereas for Brazil, it is significantly greater than one (Figure 4).<sup>7</sup> Turning to the top quintile, the results are the mirror image of those for the bottom quintile (Figure 5).<sup>8</sup> The elasticity is significantly greater than one for China and South Asia (excluding India); and significantly less than one for Brazil. In sum, the results suggest that growth has generally not been inclusive in China, the NIEs, and South Asia (excluding India), whereas it has been inclusive in Brazil.<sup>9</sup>

**Figure 4. Degree of Inclusiveness of Growth<sup>1</sup>**

(Impact on income of the bottom quintile, in percent, of a 1-percent increase in per-capita income)



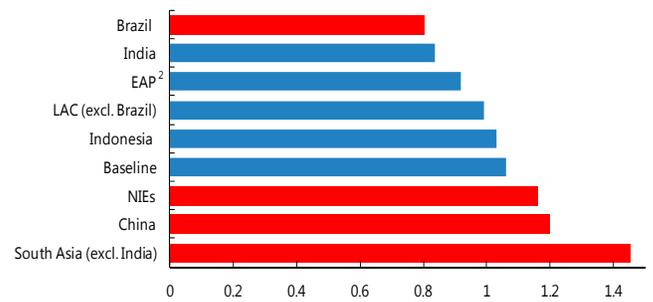
Sources: World Bank, *PovcalNet*, *Penn World Tables*; and staff calculations.

<sup>1</sup> The red bars represent countries for which the estimated degree of inclusiveness is significantly different from one.

<sup>2</sup> EAP includes Cambodia, Malaysia, Philippines, Thailand, and Vietnam.

**Figure 5. Degree of Inclusiveness of Growth<sup>1</sup>**

(Impact on income of the top quintile, in percent, of a 1-percent increase in per-capita income)



Sources: World Bank, *PovcalNet*, *Penn World Tables*; and staff calculations.

<sup>1</sup> The red bars represent countries for which the estimated degree of inclusiveness is significantly different from one.

<sup>2</sup> EAP includes Cambodia, Malaysia, the Philippines, Thailand, and Vietnam.

<sup>7</sup> While the elasticity for China is not significantly different from that of the baseline country at the 10 percent level (column 3 of Table 3), further  $\chi^2$  tests show that it is *significantly different from one* at the one percent level.

<sup>8</sup> Similar to the result for China in the bottom quintile regression: while the elasticity for the NIEs is not significantly different from that of the baseline country at the 10 percent level (column 6 of Table 3), it is *significantly different from one* at the one percent level.

<sup>9</sup> One important caveat is that Brazil entered the 1990s with a relatively higher level of inequality.

**Table 3. Inclusive Growth Regression<sup>1</sup>**

| Variables                         | (1)<br>lnQ1       | (2)<br>lnQ1         | (3)<br>lnQ1          | (4)<br>lnQ5       | (5)<br>lnQ5         | (6)<br>lnQ5          |
|-----------------------------------|-------------------|---------------------|----------------------|-------------------|---------------------|----------------------|
| Log of mean household income (y)  | -0.025<br>[0.043] | -0.142**<br>[0.061] | -0.097<br>[0.126]    | 0.040*<br>[0.023] | 0.119***<br>[0.034] | 0.060<br>[0.061]     |
| EAP*y                             |                   |                     | 0.126<br>[0.180]     |                   |                     | -0.142<br>[0.101]    |
| NIEs*y                            |                   |                     | -0.430***<br>[0.126] |                   |                     | 0.098<br>[0.062]     |
| Latin America and the Caribbean*y |                   |                     | 0.133<br>[0.186]     |                   |                     | -0.068<br>[0.080]    |
| South Asia*y                      |                   |                     | -0.480***<br>[0.178] |                   |                     | 0.390**<br>[0.185]   |
| China*y                           |                   |                     | -0.204<br>[0.128]    |                   |                     | 0.138**<br>[0.062]   |
| Brazil*y                          |                   |                     | 0.469***<br>[0.126]  |                   |                     | -0.260***<br>[0.063] |
| India*y                           |                   |                     | 0.320<br>[0.305]     |                   |                     | -0.224<br>[0.146]    |
| Indonesia*y                       |                   |                     | 0.049<br>[0.133]     |                   |                     | -0.030<br>[0.069]    |
| Observations                      | 661               | 633                 | 633                  | 661               | 633                 | 633                  |
| R-squared                         | 0.001             | -0.027              | 0.017                | 0.021             | -0.019              | 0.064                |
| Model                             | FE                | FE IV               | FE IV                | FE                | FE IV               | FE IV                |
| Number of clusters                | 107               | 105                 | 105                  | 107               | 105                 | 105                  |

<sup>1</sup> Dependent variable is the log share of the income distribution of the bottom/top quintile. Robust standard errors in brackets.  
\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

#### D. How Important is Growth for the Poor?

Using the regression estimates, Table 4 constructs measures of pro-poor and inclusive growth for Brazil, China, India, Indonesia, Russia, and Mexico over recent decades. The table highlights that although the income elasticities of poverty and income of the bottom quintile vary significantly across economies, per capita income growth remains a key driver of income of the poorest fifth of society. Some of the more specific results include:

- Inequality has widened in China, in contrast to Brazil and Mexico. Yet China has still experienced the greater poverty reduction given its higher growth in average income.
- The importance of average income growth is reinforced when looking at trends in Indonesia and Russia. For both economies in the 2000s relative to the 1990s, poverty reduction was much greater despite inequality worsening, as growth was much higher.

- A similar story emerges when looking at measures of inclusive growth. For example, while growth has been half as inclusive in China as in Brazil, the income of the poorest fifth of society has increased by relatively more in China as average income growth has been much stronger.

**Table 4. Pro-Poor and Inclusive Growth Measures**

|                 | [1]<br>Elasticity of Poverty<br>w.r.t. Income Growth <sup>1</sup> | [2]<br>Degree of<br>Inclusiveness <sup>1</sup> | [3]<br>Income<br>Growth <sup>2</sup> | [4]<br>Change in<br>Gini | [5]= [1]*[3] + 2*[4]<br>Predicted Change<br>in Poverty<br>(In percent) | [6]=[2]*[3]<br>Predicted Change in<br>Bottom Fifth Income<br>(In percent) |
|-----------------|---|--|--------------------------------------|--------------------------|--|---|
| China 1980s     | -3.4  | 0.7  | 84                                   | 54                       | -177   | 59  |
| China 1990s     | -3.4  | 0.7  | 88                                   | 36                       | -227   | 61  |
| China 2000s     | -3.4  | 0.7  | 123                                  | 22                       | -377   | 86  |
| Indonesia 1990s | -1.4  | 1.0  | 15                                   | -5                       | -31  | 15  |
| Indonesia 2000s | -1.4  | 1.0  | 90                                   | 23                       | -84  | 90  |
| India 1990s     | -1.5  | 1.0  | 10                                   | -1                       | -17  | 10  |
| India 2000s     | -1.5  | 1.0  | 26                                   | 9                        | -21  | 26  |
| Brazil 1980s    | -2.2  | 1.4  | 24                                   | 5                        | -43  | 33  |
| Brazil 90s      | -2.2  | 1.4  | 5                                    | -3                       | -18  | 7   |
| Brazil 2000s    | -2.2  | 1.4  | 34                                   | -9                       | -92  | 47  |
| Mexico 1990s    | -2.1  | 1.0  | -17                                  | -3                       | 31   | -17   |
| Mexico 2000s    | -2.1  | 1.0  | 41                                   | -4                       | -94  | 41  |
| Russia 1990s    | -3.4  | 1.0  | -47                                  | -26                      | 110  | -47   |
| Russia 2000s    | -3.4  | 1.0  | 92                                   | 12                       | -289   | 92  |

Sources: World Bank, *PovcalNet*, *Penn World Tables*; and IMF staff calculations.

<sup>1</sup>Set equal to that of the baseline countries when the null of a significant difference.

<sup>2</sup>As proxied by 100 times the change in the log over the corresponding period.

#### IV. WHAT DETERMINES HOW PRO-POOR AND INCLUSIVE GROWTH IS?

In this section, we try to uncover which factors drive how pro-poor and inclusive growth is. To do this, we first compile a database of structural reform variables (see Appendix 2 for further details). This includes variables designed to capture some of the factors mentioned earlier in the paper (e.g., education, healthcare, labor share of income, share of employment in manufacturing, and openness).<sup>10</sup> Then, we estimate regressions similar to equations 1–2, but instead of using fixed effects we allow variation of structural factors across countries to pick up country-specific effects, including on the impact of income on poverty and inclusiveness.

Specifically, we estimate the following equations:

<sup>10</sup> The variables considered are of course by no means exhaustive and country-specific characteristics may also matter. For instance, in some countries like the Philippines, infrastructure and remittances have also been shown by some studies to matter for poverty reduction and curbing income inequality.

$$\ln P_{i,t} = \gamma_x X_{i,t} + \beta \ln y_{i,t} + \beta_x X_{i,t} \ln y_{i,t} + \delta \ln GINI_{i,t} + \varepsilon_{i,t} \quad (4)$$

$$\ln Q1_{i,t} = \theta_x X_{i,t} + (\lambda - 1) \ln y_{i,t} + \lambda_x X_{i,t} \ln y_{i,t} + \varepsilon_{i,t} \quad (5)$$

where  $X$  is the set of structural variables. Our particular interest is in the impact of these factors on the income elasticity of poverty reduction and the degree of inclusiveness (the  $\beta_x$ s and the  $\lambda_x$ s, respectively). As before, a version of equation 5 is estimated for the top quintile as well as the bottom one.

Tables 5–7 show the results of the estimations. In terms of what determines how pro-poor growth is, regressions that add each structural variable one by one suggest that years of schooling, educational spending, credit penetration, trade openness, the labor share and the share of employment in industry all significantly increase the impact of income on poverty, while financial openness reduces it. We do this first as the coverage of the structural variables is uneven.

Turning to the multivariate specifications, the significant positive impact of the share of employment in industry and the negative impact of financial openness survive. An important caveat when interpreting some of the multivariate regressions is the number of observations, which falls significantly given the need to have overlapping data for the structural variables.

Turning to the inclusive growth regressions, both the bottom and top quintile results are similar. Labor share, education spending, years of schooling, industry employment, and financial reform significantly increase the degree of inclusiveness (increase the impact of average income on bottom quintile income and reduce the impact of average income on top quintile income). And in the multivariate regressions, financial reform, education spending, and industry employment remain significant.

To sum up, education and industry employment seem to be important for increasing the impact of income on poverty and inequality. Interestingly, financial openness appears to reduce the effect of income on poverty,<sup>11</sup> while financial reform increases the degree of inclusiveness. The robustness of industry employment may at first blush seem to be inconsistent with the Kuznets hypothesis, which is more suggestive of a positive correlation between industry (or manufacturing) employment and inequality at earlier stages of development. However, it is consistent with the idea that labor shifts from agriculture to industry raise the productivity of the agricultural sector where most of the poor are employed, while decreasing relative productivity in industry.

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<sup>11</sup> This result is consistent with the results reported in Jaumotte, Lall, and Papegeorgiou (2008), who find that financial globalization increases inequality.

**Table 5. Structural Determinants of How Pro-Poor Growth Is<sup>1</sup>**

| Variables  | (1)<br>p             | (2)<br>p             | (3)<br>p             | (4)<br>p             | (5)<br>p             | (6)<br>p             | (7)<br>p             | (8)<br>p             | (9)<br>p             | (10)<br>p            | (11)<br>p            | (12)<br>p            | (13)<br>p            | (14)<br>p            | (15)<br>p            | (16)<br>p            | (17)<br>p            | (18)<br>p            | (19)<br>p            |
|--|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| Log of mean household income (y)                                     | -1.876***<br>[0.118] | -2.288***<br>[0.157] | -1.978***<br>[0.148] | -1.883***<br>[0.167] | -2.059***<br>[0.249] | -1.878***<br>[0.182] | -1.860***<br>[0.119] | -1.843***<br>[0.160] | -1.975***<br>[0.162] | -2.630***<br>[0.176] | -2.380***<br>[0.191] | -2.595***<br>[0.168] | -1.861***<br>[0.125] | -1.836***<br>[0.128] | -2.043***<br>[0.321] | -2.532***<br>[0.133] | -1.907***<br>[0.128] | -2.168***<br>[0.186] | -2.326***<br>[0.146] |
| Log of Gini index  | 3.214***<br>[0.392]  | 4.096***<br>[0.263]  | 3.519***<br>[0.369]  | 2.566***<br>[0.478]  | 2.907***<br>[0.511]  | 2.437***<br>[0.482]  | 3.681***<br>[0.308]  | 3.085***<br>[0.401]  | 3.446***<br>[0.412]  | 3.726***<br>[0.325]  | 3.407***<br>[0.289]  | 3.769***<br>[0.336]  | 2.724***<br>[0.453]  | 3.382***<br>[0.425]  | 2.659***<br>[0.591]  | 3.925***<br>[0.238]  | 2.838***<br>[0.497]  | 3.068***<br>[0.380]  | 3.734***<br>[0.363]  |
| Labshare*y   |                      | -3.245***            |                      |                      |                      |                      |                      |                      |                      |                      |                      |                      |                      |                      |                      |                      |                      |                      |                      |
| Labshare   |                      | -1.122<br>[0.799]    |                      |                      |                      |                      |                      |                      |                      |                      |                      |                      |                      |                      |                      |                      |                      |                      |                      |
| Edu*y  |                      |                      | -0.285***<br>[0.095] |                      |                      |                      |                      |                      |                      |                      |                      |                      |                      |                      |                      | -0.059<br>[0.080]    |                      |                      | -0.151<br>[0.102]    |
| Edu  |                      |                      | -0.151***<br>[0.050] |                      |                      |                      |                      |                      |                      |                      |                      |                      |                      |                      |                      | -0.028<br>[0.033]    |                      |                      | -0.016<br>[0.041]    |
| Percentage of secondary school attained in the total pop., 15+*y     |                      |                      |                      | -0.040***<br>[0.008] |                      |                      |                      |                      |                      |                      |                      |                      |                      |                      |                      |                      |                      |                      |                      |
| Percentage of secondary school attained in the total pop., 15+       |                      |                      |                      | -0.016*<br>[0.008]   |                      |                      |                      |                      |                      |                      |                      |                      |                      |                      |                      |                      |                      |                      |                      |
| Percentage of higher school attained in the total pop., 15+*y        |                      |                      |                      |                      | -0.068*<br>[0.035]   |                      |                      |                      |                      |                      |                      |                      |                      |                      |                      |                      |                      |                      |                      |
| Percentage of higher school attained in the total pop., 15+          |                      |                      |                      |                      | 0.009<br>[0.025]     |                      |                      |                      |                      |                      |                      |                      |                      |                      |                      |                      |                      |                      |                      |
| Average schooling years in total pop. 15+*y                          |                      |                      |                      |                      |                      | -0.266***<br>[0.058] |                      |                      |                      |                      |                      |                      |                      |                      |                      | -0.007<br>[0.088]    |                      |                      |                      |
| Average schooling years in total pop. 15+                            |                      |                      |                      |                      |                      | -0.113*<br>[0.067]   |                      |                      |                      |                      |                      |                      |                      |                      |                      | -0.063<br>[0.047]    |                      |                      |                      |
| Health*y   |                      |                      |                      |                      |                      |                      | -0.045<br>[0.053]    |                      |                      |                      |                      |                      |                      |                      |                      |                      |                      |                      |                      |
| Health   |                      |                      |                      |                      |                      |                      | -0.095**<br>[0.041]  |                      |                      |                      |                      |                      |                      |                      |                      |                      |                      |                      |                      |
| Financial reform index (normalized), 0 to 1*y                        |                      |                      |                      |                      |                      |                      |                      | -0.443<br>[0.277]    |                      |                      |                      |                      |                      |                      |                      |                      |                      |                      |                      |
| Financial reform index (normalized), 0 to 1                          |                      |                      |                      |                      |                      |                      |                      | -0.639**<br>[0.275]  |                      |                      |                      |                      |                      |                      |                      |                      |                      |                      |                      |
| Private credit by deposit money banks and other financial institutio |                      |                      |                      |                      |                      |                      |                      |                      | -1.257**<br>[0.557]  |                      |                      |                      |                      |                      |                      |                      |                      |                      |                      |
| Private credit by deposit money banks and other financial institutio |                      |                      |                      |                      |                      |                      |                      |                      | 0.253<br>[0.272]     |                      |                      |                      |                      |                      |                      |                      |                      |                      |                      |
| Employment in agriculture*y  |                      |                      |                      |                      |                      |                      |                      |                      |                      | 0.021***<br>[0.005]  |                      |                      |                      |                      |                      |                      |                      |                      |                      |
| Employment in agriculture  |                      |                      |                      |                      |                      |                      |                      |                      |                      | -0.004<br>[0.005]    |                      |                      |                      |                      |                      |                      |                      |                      |                      |
| Employment in industry*y   |                      |                      |                      |                      |                      |                      |                      |                      |                      |                      | -0.066***<br>[0.009] |                      |                      |                      | -0.072***<br>[0.013] | -0.069***<br>[0.009] |                      | -0.065***<br>[0.012] | -0.056***<br>[0.016] |
| Employment in industry   |                      |                      |                      |                      |                      |                      |                      |                      |                      |                      | -0.002<br>[0.012]    |                      |                      |                      | -0.017<br>[0.023]    | 0.005<br>[0.008]     |                      | -0.021<br>[0.014]    | -0.017<br>[0.010]    |
| Employment in services*y   |                      |                      |                      |                      |                      |                      |                      |                      |                      |                      |                      | -0.018**<br>[0.008]  |                      |                      |                      |                      |                      |                      |                      |
| Employment in services   |                      |                      |                      |                      |                      |                      |                      |                      |                      |                      |                      | 0.009<br>[0.007]     |                      |                      |                      |                      |                      |                      |                      |
| Trade openness*y   |                      |                      |                      |                      |                      |                      |                      |                      |                      |                      |                      |                      | -0.007**<br>[0.003]  |                      |                      |                      | -0.012***<br>[0.003] | -0.001<br>[0.003]    | 0.000<br>[0.003]     |
| Trade openness   |                      |                      |                      |                      |                      |                      |                      |                      |                      |                      |                      |                      | -0.005**<br>[0.002]  |                      |                      |                      | -0.003<br>[0.003]    | -0.000<br>[0.002]    | 0.001<br>[0.002]     |
| Financial openness*y   |                      |                      |                      |                      |                      |                      |                      |                      |                      |                      |                      |                      |                      | 0.003***<br>[0.001]  |                      |                      | 0.005***<br>[0.001]  | 0.002*<br>[0.001]    | 0.003***<br>[0.001]  |
| Financial openness   |                      |                      |                      |                      |                      |                      |                      |                      |                      |                      |                      |                      |                      | -0.001*<br>[0.000]   |                      |                      | -0.001<br>[0.001]    | -0.001<br>[0.000]    | -0.001<br>[0.001]    |
| Constant   | 2.392***<br>[0.083]  | 2.544***<br>[0.081]  | 2.451***<br>[0.078]  | 2.559***<br>[0.100]  | 2.584***<br>[0.135]  | 2.695***<br>[0.098]  | 2.430***<br>[0.069]  | 2.546***<br>[0.072]  | 2.425***<br>[0.102]  | 2.728***<br>[0.069]  | 2.713***<br>[0.082]  | 2.635***<br>[0.065]  | 2.438***<br>[0.089]  | 2.369***<br>[0.092]  | 2.802***<br>[0.126]  | 2.729***<br>[0.060]  | 2.446***<br>[0.087]  | 2.693***<br>[0.068]  | 2.663***<br>[0.082]  |
| Observations   | 583                  | 218                  | 210                  | 275                  | 275                  | 275                  | 395                  | 392                  | 432                  | 412                  | 412                  | 412                  | 506                  | 434                  | 198                  | 172                  | 431                  | 314                  | 129                  |
| R-squared  | 0.828                | 0.915                | 0.880                | 0.866                | 0.823                | 0.865                | 0.858                | 0.837                | 0.833                | 0.897                | 0.910                | 0.885                | 0.834                | 0.838                | 0.905                | 0.949                | 0.854                | 0.919                | 0.954                |
| Model  | IV                   |

<sup>1</sup> Dependent variable is the log of poverty headcount below the \$2 line. Robust standard errors in brackets. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

**Table 6. Structural Determinants of How Inclusive Growth is (Bottom Quintile)<sup>1</sup>**

| Variables   | (1)                 | (2)                 | (3)                 | (4)                  | (5)                 | (6)                  | (7)                 | (8)                 | (9)                 | (10)                | (11)                 | (12)                 | (13)                | (14)                 | (15)                | (16)                | (17)                 | (18)                 | (19)                |
|---|---------------------|---------------------|---------------------|----------------------|---------------------|----------------------|---------------------|---------------------|---------------------|---------------------|----------------------|----------------------|---------------------|----------------------|---------------------|---------------------|----------------------|----------------------|---------------------|
|   | lnQ1                | lnQ1                | lnQ1                | lnQ1                 | lnQ1                | lnQ1                 | lnQ1                | lnQ1                | lnQ1                | lnQ1                | lnQ1                 | lnQ1                 | lnQ1                | lnQ1                 | lnQ1                | lnQ1                | lnQ1                 | lnQ1                 | lnQ1                |
| Log of mean household income (y)  | -0.067<br>[0.043]   | -0.150**<br>[0.071] | -0.043<br>[0.051]   | -0.242***<br>[0.048] | -0.018<br>[0.113]   | -0.266***<br>[0.073] | -0.065<br>[0.043]   | -0.117<br>[0.078]   | -0.083<br>[0.062]   | 0.063<br>[0.126]    | -0.219***<br>[0.065] | 0.186**<br>[0.087]   | -0.087<br>[0.065]   | -0.080<br>[0.059]    | 0.343***<br>[0.109] | 0.374***<br>[0.100] | -0.428***<br>[0.125] | -0.469***<br>[0.120] | -0.208*<br>[0.122]  |
| Labshare*y  |                     | 1.252**<br>[0.557]  |                     |                      |                     |                      |                     |                     |                     |                     |                      |                      |                     |                      |                     |                     |                      |                      |                     |
| Labshare  |                     | 1.130*<br>[0.637]   |                     |                      |                     |                      |                     |                     |                     |                     |                      |                      |                     |                      |                     |                     |                      |                      |                     |
| Edu*y   |                     |                     | 0.115***<br>[0.038] |                      |                     |                      |                     |                     |                     |                     |                      |                      |                     |                      |                     |                     |                      |                      | 0.139**<br>[0.063]  |
| Edu   |                     |                     | 0.026<br>[0.027]    |                      |                     |                      |                     |                     |                     |                     |                      |                      |                     |                      |                     |                     |                      |                      | -0.002<br>[0.050]   |
| Percentage of secondary school attained in the total pop., 15+*y        |                     |                     |                     | 0.009***<br>[0.002]  |                     |                      |                     |                     |                     |                     |                      |                      |                     |                      |                     |                     |                      |                      |                     |
| Percentage of secondary school attained in the total pop., 15+          |                     |                     |                     | 0.022***<br>[0.003]  |                     |                      |                     |                     |                     |                     |                      |                      |                     |                      |                     |                     |                      |                      |                     |
| Percentage of higher school attained in the total pop., 15+ y           |                     |                     |                     |                      | 0.015<br>[0.010]    |                      |                     |                     |                     |                     |                      |                      |                     |                      |                     |                     |                      |                      |                     |
| Percentage of higher school attained in the total pop., 15+             |                     |                     |                     |                      | -0.013<br>[0.018]   |                      |                     |                     |                     |                     |                      |                      |                     |                      |                     |                     |                      |                      |                     |
| Average schooling years in total pop. 15+*y                             |                     |                     |                     |                      |                     | 0.085***<br>[0.019]  |                     |                     |                     |                     |                      |                      |                     |                      |                     |                     |                      |                      | 0.115***<br>[0.037] |
| Average schooling years in total pop. 15+                               |                     |                     |                     |                      |                     | 0.131***<br>[0.031]  |                     |                     |                     |                     |                      |                      |                     |                      |                     |                     |                      |                      | 0.135***<br>[0.025] |
| Health*y  |                     |                     |                     |                      |                     |                      | 0.025<br>[0.025]    |                     |                     |                     |                      |                      |                     |                      |                     |                     |                      |                      |                     |
| Health  |                     |                     |                     |                      |                     |                      | -0.045**<br>[0.021] |                     |                     |                     |                      |                      |                     |                      |                     |                     |                      |                      |                     |
| Financial reform index (normalized), 0 to 1*y                           |                     |                     |                     |                      |                     |                      |                     | 0.525**<br>[0.211]  |                     |                     |                      |                      |                     |                      |                     | 0.585***<br>[0.183] | 0.494*<br>[0.277]    | 0.124<br>[0.244]     | 0.472*<br>[0.249]   |
| Financial reform index (normalized), 0 to 1                             |                     |                     |                     |                      |                     |                      |                     | 0.043<br>[0.270]    |                     |                     |                      |                      |                     |                      |                     | 0.364<br>[0.233]    | 0.407*<br>[0.206]    | -0.215<br>[0.201]    | 0.284<br>[0.302]    |
| Private credit by deposit money banks and other financial institution*y |                     |                     |                     |                      |                     |                      |                     |                     | -0.078<br>[0.093]   |                     |                      |                      |                     |                      |                     |                     |                      |                      |                     |
| Private credit by deposit money banks and other financial institution   |                     |                     |                     |                      |                     |                      |                     |                     | 0.026<br>[0.150]    |                     |                      |                      |                     |                      |                     |                     |                      |                      |                     |
| Employment in agriculture*y   |                     |                     |                     |                      |                     |                      |                     |                     |                     | -0.002<br>[0.003]   |                      |                      |                     |                      |                     |                     |                      |                      |                     |
| Employment in agriculture   |                     |                     |                     |                      |                     |                      |                     |                     |                     | 0.009*<br>[0.005]   |                      |                      |                     |                      |                     |                     |                      |                      |                     |
| Employment in industry*y  |                     |                     |                     |                      |                     |                      |                     |                     |                     |                     | 0.025***<br>[0.006]  |                      |                     |                      | 0.035***<br>[0.007] | 0.024***<br>[0.008] | 0.027***<br>[0.008]  | 0.011<br>[0.009]     | 0.034**<br>[0.013]  |
| Employment in industry  |                     |                     |                     |                      |                     |                      |                     |                     |                     |                     | 0.020***<br>[0.006]  |                      |                     |                      | 0.030***<br>[0.008] | 0.022***<br>[0.007] | 0.029***<br>[0.009]  | 0.011<br>[0.012]     | 0.011<br>[0.008]    |
| Employment in services*y  |                     |                     |                     |                      |                     |                      |                     |                     |                     |                     |                      | 0.000<br>[0.002]     |                     |                      |                     |                     |                      |                      |                     |
| Employment in services  |                     |                     |                     |                      |                     |                      |                     |                     |                     |                     |                      | -0.021***<br>[0.004] |                     |                      |                     |                     |                      |                      |                     |
| Trade openness*y  |                     |                     |                     |                      |                     |                      |                     |                     |                     |                     |                      |                      | 0.000<br>[0.001]    |                      |                     |                     |                      |                      |                     |
| Trade openness  |                     |                     |                     |                      |                     |                      |                     |                     |                     |                     |                      |                      | 0.000<br>[0.001]    |                      |                     |                     |                      |                      |                     |
| Financial openness*y  |                     |                     |                     |                      |                     |                      |                     |                     |                     |                     |                      |                      |                     | 0.001***<br>[0.000]  | 0.000***<br>[0.000] |                     | 0.000<br>[0.000]     |                      |                     |
| Financial openness  |                     |                     |                     |                      |                     |                      |                     |                     |                     |                     |                      |                      |                     | -0.001***<br>[0.000] | -0.001<br>[0.001]   |                     | -0.000<br>[0.001]    |                      |                     |
| Constant  | 3.329***<br>[0.050] | 3.325***<br>[0.064] | 3.273***<br>[0.055] | 3.223***<br>[0.045]  | 3.228***<br>[0.096] | 3.154***<br>[0.057]  | 3.306***<br>[0.044] | 3.286***<br>[0.071] | 3.295***<br>[0.059] | 3.265***<br>[0.082] | 3.247***<br>[0.063]  | 3.283***<br>[0.069]  | 3.315***<br>[0.054] | 3.306***<br>[0.058]  | 3.173***<br>[0.057] | 3.175***<br>[0.063] | 3.162***<br>[0.062]  | 3.063***<br>[0.050]  | 3.095***<br>[0.102] |
| Observations  | 635                 | 230                 | 223                 | 294                  | 294                 | 293                  | 420                 | 425                 | 450                 | 435                 | 436                  | 436                  | 546                 | 464                  | 327                 | 320                 | 281                  | 175                  | 133                 |
| R-squared   | 0.031               | 0.123               | 0.108               | 0.436                | 0.098               | 0.347                | 0.112               | 0.105               | 0.061               | 0.097               | 0.340                | 0.184                | 0.043               | 0.098                | 0.475               | 0.395               | 0.468                | 0.670                | 0.401               |
| Model   | IV                  | IV                  | IV                  | IV                   | IV                  | IV                   | IV                  | IV                  | IV                  | IV                  | IV                   | IV                   | IV                  | IV                   | IV                  | IV                  | IV                   | IV                   | IV                  |

<sup>1</sup> Dependent variable is the log share of the income distribution of the bottom quintile. Robust standard errors in brackets. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

**Table 7. Structural Determinants of How Inclusive Growth is (Top Quintile) 1/**

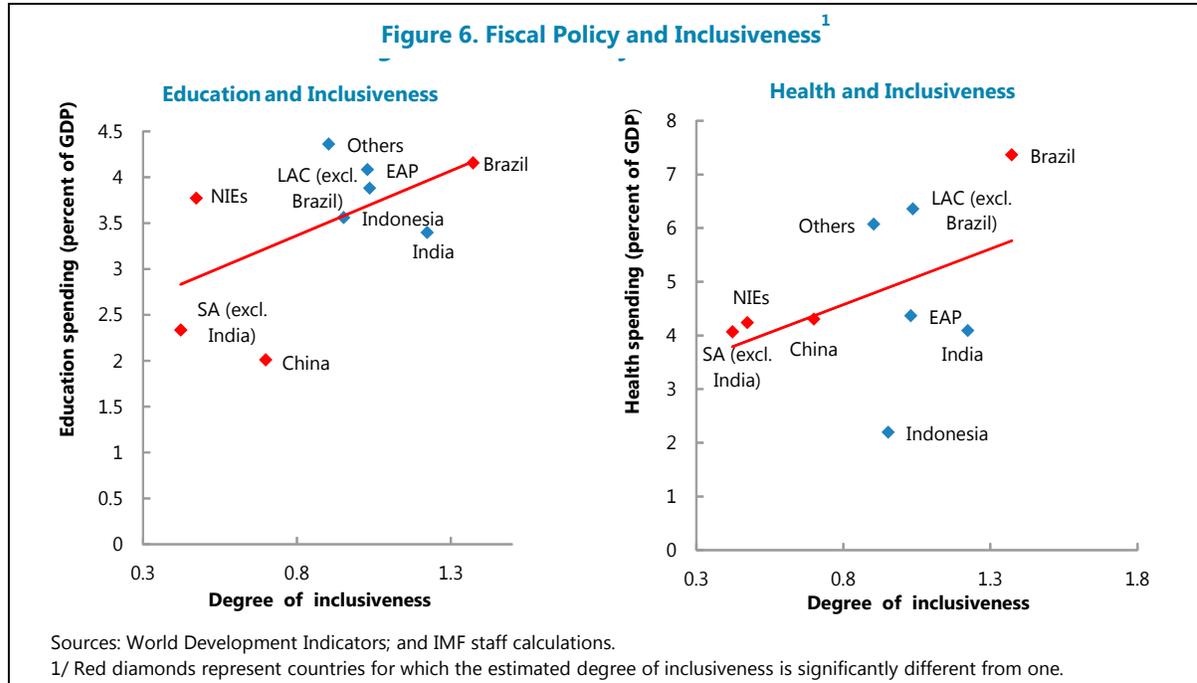
| Variables   | (1)<br>lnQ5         | (2)<br>lnQ5         | (3)<br>lnQ5         | (4)<br>lnQ5          | (5)<br>lnQ5         | (6)<br>lnQ5          | (7)<br>lnQ5         | (8)<br>lnQ5         | (9)<br>lnQ5         | (10)<br>lnQ5        | (11)<br>lnQ5         | (12)<br>lnQ5         | (13)<br>lnQ5        | (14)<br>lnQ5         | (15)<br>lnQ5         | (16)<br>lnQ5         | (17)<br>lnQ5         | (18)<br>lnQ5        | (19)<br>lnQ5         |
|---|---------------------|---------------------|---------------------|----------------------|---------------------|----------------------|---------------------|---------------------|---------------------|---------------------|----------------------|----------------------|---------------------|----------------------|----------------------|----------------------|----------------------|---------------------|----------------------|
| Log of mean household income (y)  | 0.003<br>[0.019]    | 0.027<br>[0.031]    | -0.004<br>[0.022]   | 0.084***<br>[0.022]  | -0.014<br>[0.043]   | 0.099***<br>[0.032]  | -0.001<br>[0.019]   | 0.017<br>[0.032]    | 0.005<br>[0.026]    | -0.045<br>[0.053]   | 0.079**<br>[0.031]   | -0.098***<br>[0.036] | 0.007<br>[0.027]    | 0.006<br>[0.025]     | 0.137***<br>[0.047]  | 0.138***<br>[0.043]  | 0.159***<br>[0.050]  | 0.197***<br>[0.040] | 0.065<br>[0.046]     |
| Labshare*y  |                     | -0.450*<br>[0.236]  |                     |                      |                     |                      |                     |                     |                     |                     |                      |                      |                     |                      |                      |                      |                      |                     |                      |
| Labshare  |                     | -0.408<br>[0.283]   |                     |                      |                     |                      |                     |                     |                     |                     |                      |                      |                     |                      |                      |                      |                      |                     |                      |
| Edu*y   |                     |                     | -0.041**<br>[0.016] |                      |                     |                      |                     |                     |                     |                     |                      |                      |                     |                      |                      |                      |                      |                     | -0.055**<br>[0.023]  |
| Edu   |                     |                     | -0.013<br>[0.010]   |                      |                     |                      |                     |                     |                     |                     |                      |                      |                     |                      |                      |                      |                      |                     | 0.004<br>[0.016]     |
| Percentage of secondary school attained in the total pop., 15+*y        |                     |                     |                     | -0.004***<br>[0.001] |                     |                      |                     |                     |                     |                     |                      |                      |                     |                      |                      |                      |                      |                     |                      |
| Percentage of secondary school attained in the total pop., 15+          |                     |                     |                     | -0.010***<br>[0.001] |                     |                      |                     |                     |                     |                     |                      |                      |                     |                      |                      |                      |                      |                     |                      |
| Percentage of higher school attained in the total pop., 15+ y           |                     |                     |                     |                      | -0.008**<br>[0.004] |                      |                     |                     |                     |                     |                      |                      |                     |                      |                      |                      |                      |                     |                      |
| Percentage of higher school attained in the total pop., 15+             |                     |                     |                     |                      | 0.006<br>[0.007]    |                      |                     |                     |                     |                     |                      |                      |                     |                      |                      |                      |                      |                     |                      |
| Average schooling years in total pop. 15+*y                             |                     |                     |                     |                      |                     | -0.037***<br>[0.008] |                     |                     |                     |                     |                      |                      |                     |                      |                      |                      |                      |                     | -0.056***<br>[0.019] |
| Average schooling years in total pop. 15+                               |                     |                     |                     |                      |                     | -0.060***<br>[0.013] |                     |                     |                     |                     |                      |                      |                     |                      |                      |                      |                      |                     | -0.052***<br>[0.009] |
| Health*y  |                     |                     |                     |                      |                     |                      | -0.013<br>[0.010]   |                     |                     |                     |                      |                      |                     |                      |                      |                      |                      |                     |                      |
| Health  |                     |                     |                     |                      |                     |                      | 0.012<br>[0.009]    |                     |                     |                     |                      |                      |                     |                      |                      |                      |                      |                     |                      |
| Financial reform index (normalized), 0 to 1*y                           |                     |                     |                     |                      |                     |                      |                     | -0.220**<br>[0.094] |                     |                     |                      |                      |                     |                      |                      | -0.263***<br>[0.085] | -0.236*<br>[0.122]   | -0.053<br>[0.109]   | -0.177*<br>[0.103]   |
| Financial reform index (normalized), 0 to 1                             |                     |                     |                     |                      |                     |                      |                     | 0.022<br>[0.114]    |                     |                     |                      |                      |                     |                      |                      | -0.117<br>[0.096]    | -0.132<br>[0.086]    | 0.135*<br>[0.068]   | -0.130<br>[0.130]    |
| Private credit by deposit money banks and other financial institution*y |                     |                     |                     |                      |                     |                      |                     |                     | 0.053<br>[0.045]    |                     |                      |                      |                     |                      |                      |                      |                      |                     |                      |
| Private credit by deposit money banks and other financial institution   |                     |                     |                     |                      |                     |                      |                     |                     | 0.004<br>[0.070]    |                     |                      |                      |                     |                      |                      |                      |                      |                     |                      |
| Employment in agriculture*y   |                     |                     |                     |                      |                     |                      |                     |                     |                     | 0.001<br>[0.001]    |                      |                      |                     |                      |                      |                      |                      |                     |                      |
| Employment in agriculture   |                     |                     |                     |                      |                     |                      |                     |                     |                     | -0.004*<br>[0.002]  |                      |                      |                     |                      |                      |                      |                      |                     |                      |
| Employment in industry*y  |                     |                     |                     |                      |                     |                      |                     |                     |                     |                     | -0.009***<br>[0.003] |                      |                     |                      | -0.013***<br>[0.003] | -0.008**<br>[0.003]  | -0.010***<br>[0.004] | -0.001<br>[0.004]   | -0.012**<br>[0.006]  |
| Employment in industry  |                     |                     |                     |                      |                     |                      |                     |                     |                     |                     | -0.009***<br>[0.003] |                      |                     |                      | -0.014***<br>[0.004] | -0.010***<br>[0.003] | -0.013***<br>[0.004] | -0.008**<br>[0.004] | -0.005<br>[0.003]    |
| Employment in services*y  |                     |                     |                     |                      |                     |                      |                     |                     |                     |                     |                      | 0.000<br>[0.001]     |                     |                      |                      |                      |                      |                     |                      |
| Employment in services  |                     |                     |                     |                      |                     |                      |                     |                     |                     |                     |                      | 0.009***<br>[0.002]  |                     |                      |                      |                      |                      |                     |                      |
| Trade openness*y  |                     |                     |                     |                      |                     |                      |                     |                     |                     |                     |                      |                      | -0.000<br>[0.000]   |                      |                      |                      |                      |                     |                      |
| Trade openness  |                     |                     |                     |                      |                     |                      |                     |                     |                     |                     |                      |                      | -0.000<br>[0.001]   |                      |                      |                      |                      |                     |                      |
| Financial openness*y  |                     |                     |                     |                      |                     |                      |                     |                     |                     |                     |                      |                      |                     | -0.000***<br>[0.000] | -0.000**<br>[0.000]  |                      | -0.000<br>[0.000]    |                     |                      |
| Financial openness  |                     |                     |                     |                      |                     |                      |                     |                     |                     |                     |                      |                      |                     | 0.000***<br>[0.000]  | 0.000<br>[0.000]     |                      | 0.000<br>[0.000]     |                     |                      |
| Constant  | 5.463***<br>[0.021] | 5.461***<br>[0.026] | 5.488***<br>[0.021] | 5.500***<br>[0.019]  | 5.503***<br>[0.039] | 5.531***<br>[0.023]  | 5.479***<br>[0.017] | 5.481***<br>[0.029] | 5.474***<br>[0.024] | 5.482***<br>[0.033] | 5.488***<br>[0.026]  | 5.477***<br>[0.027]  | 5.465***<br>[0.022] | 5.470***<br>[0.024]  | 5.513***<br>[0.022]  | 5.519***<br>[0.025]  | 5.527***<br>[0.023]  | 5.567***<br>[0.016] | 5.554***<br>[0.038]  |
| Observations  | 635                 | 230                 | 223                 | 294                  | 294                 | 293                  | 420                 | 425                 | 450                 | 435                 | 436                  | 436                  | 546                 | 464                  | 327                  | 320                  | 281                  | 175                 | 133                  |
| R-squared   | 0.001               | 0.075               | 0.075               | 0.456                | 0.102               | 0.380                | 0.052               | 0.073               | 0.015               | 0.046               | 0.307                | 0.150                | 0.008               | 0.066                | 0.464                | 0.365                | 0.465                | 0.720               | 0.370                |
| Model   | IV                  | IV                  | IV                  | IV                   | IV                  | IV                   | IV                  | IV                  | IV                  | IV                  | IV                   | IV                   | IV                  | IV                   | IV                   | IV                   | IV                   | IV                  | IV                   |

<sup>1</sup> Dependent variable is the log share of the income distribution of the top quintile. Robust standard errors in brackets. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

## V. POLICIES TO FOSTER INCLUSIVE GROWTH

This section discusses some policies that could reduce inequality and increase inclusiveness, based on our regressions results, as well as some qualitative considerations. The list is by no means exhaustive, however, and the multiple factors behind rising inequality suggest that a set of mutually reinforcing policies will likely be needed, and that the necessary mix will vary from country to country.

### A. Fiscal Policy



Our regression results suggest that education matters for inclusiveness, and simple scatter plots also point to an association between the degree of inclusiveness and education and health spending (Figure 6).<sup>12</sup> And given these findings, the relatively low share of education and health spending in GDP across Asia points to an important potential role for fiscal policy in strengthening inclusiveness.

In this context, adjusting both the level and structure of taxes and spending may have a part to play. In OECD countries, taxes and transfer policies have been estimated to reduce inequality as measured by the Gini index by around a quarter (OECD, 2012). In sharp contrast, the redistributive impact of fiscal policy in developing economies is severely restricted by lower overall levels of both taxes and transfers—while average tax ratios for

<sup>12</sup> While health spending was not significant in the regression analysis, this may simply reflect shortcomings in the measure used, which does not include provision of water and sanitation which are likely to be important for the income outcomes of those in the bottom quintile.

advanced economies exceed 30 percent of GDP, ratios in Asia and the Pacific are only around half of that and among the lowest in developing regions (Bastagl, Coady, and Gupta, 2012). Partly as a result, social spending is also substantially lower, at around 8 percent of GDP compared to 15 percent of GDP in advanced economies, with lower transfer and health spending explaining most of the difference. Reliance on less progressive tax and spending instruments compound the problem. In Asia and the Pacific, indirect taxes account for half of tax revenue, compared to less than one-third in advanced economies. Meanwhile, participation in social insurance schemes remains limited in many countries (particularly in rural areas) and expenditure on social assistance programs is often low and poorly targeted. According to Asian Development Bank (2012), only around half the poor population in developing Asia benefits from social programs.

It appears then that raising tax revenues and spending more efficiently and equitably could help address income inequality in Asia. On the tax side, efforts could focus on broadening income and consumption tax bases by reducing tax exemptions and improving compliance. On the spending side, they could aim at greater reliance on targeted social expenditures aimed at vulnerable households, including on health and education. In this regard, *conditional cash transfer programs* (CCT) are being increasingly used in low-income emerging economies. Brazil and Mexico have two of the largest schemes (in the former, “Bolsa Familia” covers around 25 percent of the population) with transfers contingent on requirements such as children’s school attendance or vaccination records. Both are considered to have been successful, with the Mexican program being associated with a 10 percent reduction in poverty within two years of its introduction. In Asia, the Philippines introduced a CCT in 2008 (“the 4Ps”) to help redirect resources toward socially desirable programs in a well-targeted way. In 2012, it is budgeted to reach 60 percent of the poor, and by 2013 it will cover 3.8 million households, with budget cost of about 0.4 percent of GDP. In India, the recently launched unique identification scheme (UID) holds significant promise in ensuring better targeting of social schemes and allowing the vulnerable to access the welfare system.

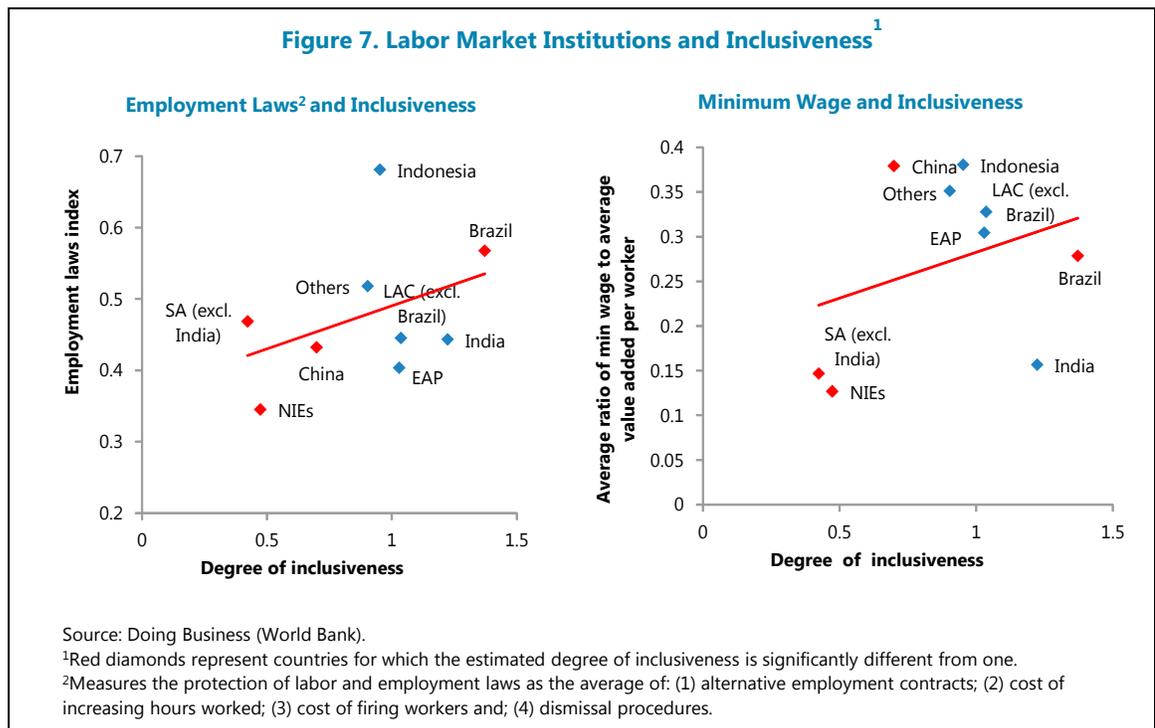
In Asian countries with higher per capita income and lower poverty, enhancing other safety nets could be a higher priority. In particular, few emerging Asian economies have *unemployment insurance schemes* and many have *low pension coverage rates*—less than 20 percent of the working-age population is covered in most of emerging Asia compared to an average of 60 percent in OECD countries (OECD, 2009). Enhancing such safety nets, as well as increasing inclusiveness, would also reduce precautionary motives to save, hence increasing consumption and facilitating global rebalancing.

A key question about such policies is their fiscal cost. The Bolsa Familia and 4Ps programs only cost 0.4 percent of GDP and recent IMF work on China and Korea ((Barnett and Brooks, 2010); and (Feyzioglu, Skaarup, and Syed, 2008)) argues that a minimum social safety net can be provided at low cost, with more comprehensive nets funded by broadening the tax base and increasing some taxes, along with reallocating existing spending. For many economies, introducing (or increasing the rate on) a GST and reducing poorly targeted fuel subsidies would

be obvious candidates. Some policies may have no fiscal cost, such as unemployment insurance schemes with employee/employer contributions to individual accounts. Regarding education, in many cases the challenge is to improve quality. Expanding pension provision could entail costs, but not necessarily if benefits are provided on a defined contribution basis and contribution rates are increased.

## B. Labor Market Reform

Labor market indicators also turn out to be important factors in the regression analysis, as shown by the robust significance of the share of employment in industry, with labor share also significant in the bivariate regressions. In some parts of Asia, such as China, this may also reflect the bias toward capital and away from labor (through suppressed input costs) that has dampened employment growth. In addition, simple scatter plots suggest that inclusiveness is positively associated with the degree of employment protection and minimum wage levels, with South Asia and the NIEs having particularly low minimum wages (Figure 7).



This is consistent with recent academic work that links rising inequality in advanced economies to weakened bargaining power of workers (e.g., Levy and Temin, 2007). While a comprehensive discussion of the impact of labor market institutions (e.g., collective bargaining structures) on the inclusiveness of growth is beyond the scope of this paper, addressing labor market duality and the use of minimum wages are being increasingly advocated in the region to support income of low-earning workers (Box 2). In addition, India has launched a scheme to guarantee a certain minimum level of employment in rural areas that may have contributed to the slight decline in rural inequality observed in recent years.

## Box 2. Insiders and Outsiders in Japan and Korea

**The share of nonregular workers has markedly increased in recent decades resulting in the emergence of dual labor markets in both Japan and Korea.** Nonregular workers now account for over one-third of the labor force in both countries, a ratio that is significantly higher than comparator countries across the OECD. As nonregular workers are usually unable to convert their employment contracts to regular employment, the rising share of nonregular workers has resulted in a system with both insiders and outsiders.

**This shift in labor practices largely reflects demand for a more flexible workforce in a system that strongly protects regular workers.** In Japan, the sharp rise followed the bursting of the Japanese bubble, and in Korea the rise coincided with the Asian Crisis. Deregulation has also contributed to the increased use of temporary workers in both countries.

**Large disparities in the pay of nonregular and regular workers have likely influenced recent trends in growing inequality.** In Japan, for example, salaries are from 25–100 percent higher on average for comparator regular workers, with the difference rising with seniority as regular workers' salaries increase while nonregular workers' salaries generally stagnate. Nonregular workers are also less likely to be protected under established social safety nets. Following the onset of the Lehman crisis in Japan, for example, 270 thousand nonregular workers lost their jobs, and as many workers were not entitled to receive full unemployment insurance, it was broadly reported that many former nonregular workers became homeless.

**Reducing these discrepancies will require policies that both lower the cost of regular employment and increase the protection of the most vulnerable under the social safety net.**

Introducing a new, more flexible labor contract could increase incentives for hiring regular workers and allow a greater number of young and female workers to enter mainstream career paths with established firms. One possible option is to modify regular work contracts to include phased-in employment protection. Such a new regular work contract would gradually increase the dismissal costs to employers over the course of a worker's tenure. This would help reduce hiring risks given unknown skills of new workers, while maintaining employment protection for tenured employees. At the same time, this process of increased flexibility needs to be accompanied by an expansion of social insurance, particularly in Korea where public expenditure remains low by international standards. In other words, "protect the worker, not the job."

Minimum wages are also one of the most well studied policies (Box 3). Yet both theory and empirical evidence are largely ambiguous on their disemployment effects (Boeri and Van Ours, 2008). It is usually a matter of fine tuning: set the rate too low and it has no impact; set it too high and it will have significant disemployment effects. Moreover, minimum wages usually work better in combination with benefits conditional on employment as they reinforce each other. In particular, while the latter may be a good way of providing targeted assistance and work incentives, if labor has limited voice, employers could use such benefits to drive down wages, which a minimum wage can help avoid (Gregg, 2000).

### Box 3. The Case for a Minimum Wage

In many countries, rising wage inequality has led to a renewed interest in minimum wages (IMF-ILO, 2010). The first minimum wage was introduced in the United States in 1938 and paid 25 cents per hour. Currently, around ninety per cent of ILO members have some form of minimum wage, with levels in most countries clustering around 40 per cent of average wages (for OECD countries, it ranges from around 27 percent in Korea to a high of 52 percent in Ireland and Portugal).

In the Asia Pacific region, there have been significant recent increases in minimum wages in China, India, Indonesia, the Philippines, Thailand, and Vietnam. In May 2011, Hong Kong SAR introduced a minimum wage “aimed at striking an appropriate balance between forestalling excessively low wages, minimizing the loss of low-paid jobs, and sustaining economic growth and competitiveness,” and Malaysia followed in 2012. The Malaysian authorities gave three main reasons for adopting a minimum wage: (i) ensuring basic needs of employees are met; (ii) encouraging firms to move up the value chain by investing in better technology and increasing labor productivity; and (iii) reducing dependence on unskilled foreign labor. Such interest in minimum wages begs the question: what is the evidence on their effectiveness?

|                         | Competitive Model  | Imperfect Competition Model   |
|-------------------------|--|---|
| <i>Covered sector</i>   | If the MW is set above market wage ( $MW > W$ ), $W$ will increase while $E$ will decrease                                 | Setting the MW at $W < MW < MPL$ (marginal product of labor) $= >$ increase in $W$ and $E$ . Setting $MW > MPL$ will increase $W$ but will decrease $E$ . |
| <i>Uncovered sector</i> | If a large number of displaced workers seek jobs in this sector, it could lead to an increase in $E$ and decrease in $W$ . | Ambiguous effect on $W$ and $E$ .   |

From a theoretical perspective, it is far from straightforward to predict the employment and wage effects of a minimum wage. In a perfectly competitive model, the introduction of a minimum wage covering the entire workforce above the market clearing wage unambiguously reduces employment. However, such conditions rarely hold. As Table 8 shows, the overall effect of a minimum wage depends on multiple factors, including the degree of competition in the labor market, the relative level of the minimum wage to the market clearing wage, the structure (number) of minimum wages, the share of the workforce covered by minimum wage legislation, the degree of enforcement of the legislation, and the elasticities of demand in the covered and uncovered sectors.

As Boeri and Van Ours (2008) argue, there is a vast empirical literature on the effects of minimum wages. One of the most widely debated studies was performed by Card and Krueger (1994). They investigated the impact of increases in the minimum wage in New Jersey in 1992 from US\$4.25 to US\$5.05, using Pennsylvania, where the minimum wage remained at US\$4.25 throughout this period, as the control group given it bordered New Jersey and had a similar economic structure. They found that after the minimum wage was increased, employment in fast-food outlets in New Jersey rose faster than in Pennsylvania. The study changed perceptions regarding whether increases in the minimum wage can cause employment to rise. Overall, however, Boeri and Van Ours conclude that given most studies generally neglect other margins such as hours, labor force participation and nonwage benefits, whether minimum wages leave low-paid workers better off remains inconclusive.

In the Asian context, the recently introduced statutory minimum wage in Hong Kong SAR will be a good case study of the efficacy of a minimum wage. In many ways, as a highly open city and financial center, Hong Kong SAR has faced the brunt of pressures from globalization and skill biased technical change: it has a high Gini coefficient (0.537 based on original monthly income and before taxes and social transfers) and an extremely low share of income for the bottom quintile of domestic households

### Box 3. The Case for a Minimum Wage (concluded)

of the of the income distribution (around 3 percent). When making for the case for a minimum wage, the Provisional Minimum Wage Commission estimated that setting the rate at HK\$28 (around US\$3.60) per hour would affect around 11 percent of employees and raise their wages by about 17 percent. However, they argued that it would only increase the total wage bill by less than 1 percent. They acknowledged that where labor cost increases could not be fully passed on to consumers through price increases, part of the adjustments could be in the form of lay-offs and reductions in working hours and fringe benefits. Yet on the whole, they argued that the additional wage costs would be manageable, especially against the backdrop of improving economic and labor market conditions, and still benign inflation, and with potential for profit margins to be cut. Early results seem consistent with this: while average monthly real wages for the lowest income decile initially rose by around 6–8 percent, the disemployment effect was minimal. Given the introduction was only in May 2011, however, we will have to wait to assess the long-term impact.

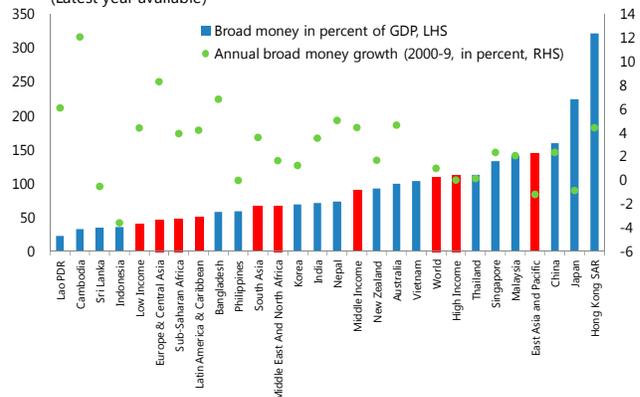
There may be a China effect in the minimum wage increases in ASEAN countries. Wages have been increasing more rapidly in China than in ASEAN. When combined with worsening demographics in China, wages of low-skilled workers in ASEAN may be under less pressure than a decade ago. This combined with low unemployment rates and rising inequality likely explains the minimum wage increases in ASEAN, and may also help mitigate significant disemployment effects.

## C. Financial Inclusion

The regression analysis suggests that financial reform increases the degree of inclusiveness, which could be consistent with reform enhancing financial inclusion. The finding is in line with some recent empirical literature which finds that financial development not only promotes economic growth but can also help divide it more evenly (Box 4). According to some estimates, for the lowest quintile, the benefits of financial development are split roughly equally between those associated with faster growth and those from greater income equality (Beck, Demirgüç-Kunt, Levine, 2007).

Figure 8. Financial Deepening

(Latest year available)



How does Asia currently fare on financial development? There is appreciable disparity across the region (Figure 8). “Financial deepening”—a measure of the level of financial services, typically proxied by broad money-to-GDP—is positively associated with per capita income, although its rate of growth tends to be higher in relatively less developed parts of Asia, suggesting some catching-up across the region.

However, deepening itself may not translate into financial services being broadly available across firms and households, making “access to finance” equally important. Across the globe, high-income countries tend, on average, to have almost 12 times more bank branches and

#### Box 4. Financial Development, Growth and Inequality

**Financial development spurs growth by enabling larger investments and more productive allocation of capital.** At the same time, it also offers better and cheaper services for saving money and making payments—by allowing firms and households to avoid the cost of barter or cash transactions, cutting remittance costs, and providing the opportunity for asset accumulation and consumption smoothing.

**Moreover, certain forms of financial development, particularly those that broaden access to finance, can benefit the poor disproportionately.** This is because financial market imperfections—such as asymmetric information and costs associated with transactions and contract enforcement—hit poor and small-scale entrepreneurs hardest, since they typically lack collateral, credit histories, and connections. These impede capital from flowing to poor individuals, even if they have projects with high prospective returns, thereby reducing the efficiency of capital allocation and aggravating inequality. By targeting these imperfections and creating enabling conditions for financial markets and instruments to develop—such as insurance products that facilitate adjustment to shocks—governments can therefore not only spur growth but also help ensure it is distributed more evenly.

**Many economic models predict that financial development can lower both poverty and inequality** directly by relaxing credit constraints on the poor, and indirectly, by improving the allocation of capital and accelerating growth (see, for example, Banerjee and Newman, 1993). Some suggest an inverted-U relationship with inequality (see, among others, Greenwood and Jovanovic, 1990). In early stages of development, the rich get an out-sized benefit from better-functioning financial markets as the poor continue to rely on the informal sector for capital. However, at higher levels of income, financial development can potentially begin to benefit an increasing proportion of families and companies by relaxing the credit constraints faced by the poor and small firms.

**Nevertheless, not all financial development reduces inequality, especially in the short run.** For instance, financial globalization has been associated with widening income disparities (Jaumotte, Lall, and Papageorgiou, 2008) and financial liberalization also runs the risk of being hijacked by a narrow group of elites, leading to reduced rather than broader access (Claessens and Perotti, 2007). Moreover, international experience cautions that too rapid or hasty a process of financial liberalization also carries risks and can result in crises. Beyond certain thresholds, too rapid a pace of financial development can lead to macroeconomic volatility, particularly when regulation and supervision are weak (Easterly, Islam, and Stiglitz, 2001). This can hit the poor and vulnerable hardest, particularly when social safety nets are underdeveloped and where social spending and aid stagnate in the wake of crisis.

**The prediction that, particularly over time, financial development can help to improve income distribution is supported by some empirical evidence,** including that presented in this paper. A number of cross-country studies show that economies with better developed financial systems tend to have lower poverty levels and better health and education indicators than others, even at the same level of income; poverty falls more rapidly in economies with more developed financial intermediaries, such as banks or insurance companies; and for such economies, the income of the lowest quintile grows faster than average income (see, among others, Clarke, Xu, and Zhou, 2006 and Beck, Demirgüç-Kunt, Levine, 2007).

30 times more ATMs for every 100,000 adults than low-income ones. Indeed, lack of access to finance is a major impediment in many parts of Asia, with nearly 60 percent of the population in East Asia and 80 percent of that in South Asia lacking access to the formal financial system (Table 9). Worryingly, financial access appears to have worsened for many of the region's economies during the global crisis (CGAP and World Bank, 2010).

**Table 9. Selected Indicators of Financial Inclusion**

|                                 | Households with<br>Access to Bank<br>(percent) | Adult Population not<br>Using Formal<br>Financial Services<br>(millions/percent) | SMEs Lacking Access to<br>Loan from Financial<br>Institution<br>(millions/percent) |
|---------------------------------|--|--|--|
| East Asia and Pacific           | 42   | 876/51–75  | 140–170 / >59  |
| South Asia                      | 22   | 612/51–75  | 60–70 / >59  |
| Middle East and North Africa    | 42   | 136/26–50  | 12–15 / >59  |
| Sub-Saharan Africa              | 12   | 326/75–100   | 26–30 / >59  |
| Latin America and the Caribbean | 40   | 250/51–75  | 11–12 / 40–59  |
| Central Asia and Eastern Europe | 50   | 193/26–50  | 5–7 / 20–39  |
| High-income countries           | 92   | 60/0–25  | 10–12 / <20  |

Source: Financial Access 2010 and Access to Finance 2010.

Moreover, there is evidence that financial inclusion is positively correlated with the relative success in reducing poverty incidence and ensuring equity across Asian economies. For instance, output has been found to increase and poverty to decline with greater access to finance in rural India (Burgess and Pande, 2005). In a similar vein, rural financial development—measured as total rural loans to rural GDP—has been found to contribute significantly to reducing rural inequality in China (Liang, 2008). In the Philippines, financial inclusion has been adopted as part of the Development Plan (2011–16) for addressing poverty and inequality. How might Asian governments promote financial development that both supports growth and reduces inequality? International experience suggests a few directions:

- *Ensuring macroeconomic stability as financial systems are liberalized, and particularly as they are opened up to the rest of the world.* There is no unique one-size-fits-all approach to liberalizing financial systems, and the process should be tailored to each country's circumstances. Across the world, prudently executed and sequenced reforms have resulted in greater flexibility in interest rates, improved credit allocation and risk management by commercial banks, deeper financial and capital markets, and significant enhancement in intermediation patterns. In tandem, the framework for monetary and exchange rate policy has typically undergone major changes with the use of market-based instruments to implement policy actions. The prudential framework and quality of supervision have also been strengthened to help prevent unsafe credit decisions and promote more effective management of market risks.

- *Identifying and removing impediments to financial access—including those that inhibit competition—without directing particular outcomes.* Notably, expanding credit availability by promoting rural finance, ensuring that regulations (such as loan classification criteria and capital requirements) do not discriminate against the provision of finance to the rural poor, including the agricultural sector, extending micro-credit, promoting credit information sharing, and developing venture capital markets should significantly expand credit availability (Beck and Demirguc-Kunt, 2006). More generally, given that the financial service needs of the population are wide and varied, there is a need to promote a wider range of services (credit, savings, payments, and insurance) that cater to market segments traditionally underserved by the formal financial system. Some promising initiatives are underway in Asia, such as the CARD MRI card in the Philippines. This includes a microfinance-oriented rural bank, a thrift bank for SMEs, and a micro-insurance institution, helping, among other things, to provide financial support for education, health and enterprise development. Thailand is also implementing a Microfinance Master Plan (2008–11).
- *In less developed economies, harnessing new technologies to broaden financial access to those previously precluded.* A successful example comes from India, whose UID program enables the poor to use their cell phones to bank, while reducing transaction costs and facilitating trade. Technological innovation also has the potential of significantly improving access to finance, such as through the use of e-money and the provision of an efficient retail payments system.
- *Bolstering the legal environment and financial market infrastructure, including property rights and contract enforceability.* For instance, well-defined process for securing collateral in the event of default can encourage banks to lend more to SMEs in developing economies, while more developed economies could focus on developing capital markets to broaden the channels for financial access. Equally, it is important to educate clients so that they are able to make informed financial decisions and can fully benefit from being included in the financial system.
- *On the regulatory front, promoting policies that foster transparency and competition among private financial institutions* (Levine, 2011). Conversely, those that channel credit to politically-favored ends decrease the quality of financial services while increasing their cost and breeding corruption in credit allocation (see, for example, Barth and others, 2009). These distortions usually exert a disproportionately large impact on living standards of lower income households.

#### **D. Governance**

Finally, institutional reforms can also play an important role in helping to ensure that the gains from growth are widely shared. Work by the IMF argues that high and rising corruption increases inequality and poverty, including by reducing the progressivity of the tax system,

the level and effectiveness of social spending, and the formation of human capital (Gupta, Davoodi, and Alonso-Terme, 1998). In resource rich countries, potential reforms include reducing rent seeking behavior through transparency initiatives and anti-corruption efforts (Collier 2007). In addition, regulation or better enforcement of existing regulations can also help address failures in markets that the poor participate in—poorly-functioning financial, land, and human capital markets—so that they also benefit from growth (Duflo 2011).

Across Asia, notably in China and India, corruption has been identified by governments as a key challenge in recent years. Governance and institutional reforms are also high on the agenda. For instance, recent initiatives include the Government Transformation Program in Malaysia, which introduced a whistleblower protection act and set specific objectives for fighting corruption; and reforms covering public financial management, business regulations, and the judiciary in the Philippines.

## VI. CONCLUSIONS

This paper assesses how pro-poor and inclusive Asia's recent growth has been compared to its own history as well as other emerging regions, and what factors have been driving these outcomes. The stylized facts are that while poverty has fallen across the region over the last two decades, inequality has increased, dampening the impact of growth on poverty reduction. As a result, relative to other regions and to Asia's own past, the recent period of growth has been both less inclusive and less pro-poor.

The regressions confirm many of the stylized facts while showcasing the regional differences in how pro-poor and inclusive growth has been. Some of the key results include:

- In East Asia and Latin America, income growth has a significantly lower impact on poverty than in China, the Middle East and North Africa, Eastern Europe and Central Asia, and sub-Saharan Africa. The impact is particularly weak in India and Indonesia.
- Inequality interacts with income, meaning that a higher level of inequality tends to reduce the impact of income growth on poverty reduction. The implication of this result is that past rises in inequality in Asia are likely to reduce the future impact of income growth on poverty, even if the level of inequality remains constant.
- The inclusive regression results point to the income of the bottom quintile rising less fast than average income, once we use instruments—an important difference from the Dollar-Kraay result. Moreover, they illustrate significant differences across regions: growth has generally not been inclusive in China, the NIEs, and South Asia (excluding India), whereas it has been strongly so in Brazil.
- Per capita income growth remains a key driver of poverty reduction—while inequality has widened in China, in contrast to Brazil and Mexico, it has still experienced the greater poverty reduction given its higher growth in average income. A similar story

emerges when looking at measures of inclusive growth. For example, while growth has been significantly less inclusive in China than Brazil, the income of the poorest fifth of society has increased by relatively more in China as average income growth has been much stronger.

Turning to the structural factors that may determine how pro-poor and inclusive growth is, the regression analysis suggests that education and labor market variables (e.g., industry employment) are key drivers. Financial reform also increases the degree of inclusiveness, which could be consistent with reform enhancing financial inclusion.

Based on the regression results and other qualitative considerations, we recommend a number of policies that could help redress the recent period of less inclusive and less pro-poor growth. In terms of fiscal policy, these include higher spending on health and education and enhanced social safety nets (e.g., increases in pension coverage and conditional cash transfers). Greater attention must also be paid to labor market reforms that would increase the voice of labor, hence boosting its share in total income (e.g., minimum wages and reducing duality in labor contracts). Finally, building a more inclusive financial system and improved governance should also be part of the policy package.



## Appendix II

| Variables                    | Description  | Sources  |
|------------------------------|--|--|
| Log of mean household income | The average monthly per capita income/consumption expenditure from survey in 2005 PPP.   | Poverty Calculator, Singapore<br><a href="http://iresearch.worldbank.org/PovcalNet/index.htm">http://iresearch.worldbank.org/PovcalNet/index.htm</a>   |
| Labshare                     | Labor Share of Income is the ratio of the Total Compensation of Employees divided by GDP in local currencies.  | Department of Statistics, Hong Kong Census and Statistics<br><a href="http://www.censtatd.gov.hk/hkstat/sub/bbs.jsp">http://www.censtatd.gov.hk/hkstat/sub/bbs.jsp</a><br>Department, Statistics Korea,<br><a href="http://www.nscb.gov.ph/fies/">http://www.nscb.gov.ph/fies/</a><br>Philippines National Statistical<br><a href="http://eng.stat.gov.tw/ct.asp?xItem=8849&amp;CtNode=1595&amp;mp=5">http://eng.stat.gov.tw/ct.asp?xItem=8849&amp;CtNode=1595&amp;mp=5</a><br>Coordination Board, National<br><a href="http://kostat.go.kr/portal/english/help/2/2/index.board">http://kostat.go.kr/portal/english/help/2/2/index.board</a><br>Statistics Taiwan  |
| Log of gini index            | Gini Coefficient   | United Nations Statistics Division<br><a href="http://unstats.un.org/unsd/default.htm">http://unstats.un.org/unsd/default.htm</a><br>and World Development Indicators<br><a href="http://data.worldbank.org/data-catalog/world-development">http://data.worldbank.org/data-catalog/world-development</a>   |
| Edu                          | Education spending as a share of GDP; Public expenditure on education consists of current and capital public expenditure on education includes government spending on educational institutions (both public and private), education administration as well as subsidies for private entities (students/households and other private entities).                           | Poverty Calculator, Singapore<br><a href="http://iresearch.worldbank.org/PovcalNet/index.htm">http://iresearch.worldbank.org/PovcalNet/index.htm</a><br>Department of Statistics, Hong<br><a href="http://www.singstat.gov.sg/publications/population.html">http://www.singstat.gov.sg/publications/population.html</a><br>Kong Census and Statistics<br><a href="http://www.censtatd.gov.hk/hkstat/sub/bbs.jsp">http://www.censtatd.gov.hk/hkstat/sub/bbs.jsp</a><br>Department, Statistics Korea,<br><a href="http://www.nscb.gov.ph/fies/">http://www.nscb.gov.ph/fies/</a><br>Philippines National Statistical<br><a href="http://eng.stat.gov.tw/ct.asp?xItem=8849&amp;CtNode=1595&amp;mp=5">http://eng.stat.gov.tw/ct.asp?xItem=8849&amp;CtNode=1595&amp;mp=5</a><br>Coordination Board, National                                  |
| Ls15_bl                      | Percentage of secondary school attained in the total population, 15+   | World Development Indicators and<br>UNESCO Institute for Statistics<br><a href="http://data.worldbank.org/indicator/SE.XPD.TOTL.GD.ZS">http://data.worldbank.org/indicator/SE.XPD.TOTL.GD.ZS</a>   |
| Lh15_bl                      | Percentage of higher school attained in the total population, 15+  | Barro-Lee (2010)   |
| Tyr15_bl                     | Average schooling years in total population, 15+   | Barro-Lee (2010)   |
| Health                       | Health spending as a share of GDP; Total health expenditure is the sum of public and private health expenditure. It covers the provision of health services (preventive and curative), family planning activities, nutrition activities, and emergency aid   | World Development Indicators and<br>World Health Organization<br>National Health Account database. <a href="http://data.worldbank.org/indicator/SH.XPD.TOTL.ZS">http://data.worldbank.org/indicator/SH.XPD.TOTL.ZS</a><br>From the dataset described in Abiad, Abdul, Enrica Detragiache, and Thierry Tresselt, "A New Database of Financial Reforms," IMF Working Paper WP/08/266, December 2008 ( <a href="http://www.imf.org/external/pubs/cat/longres.cfm?sk=22485.0">http://www.imf.org/external/pubs/cat/longres.cfm?sk=22485.0</a> ).<br>Beck, Demircuc-Kunt and Levine (2000)<br>World Development Indicators,<br>International Labour Organization,<br>and Key Indicators of the Labour<br>Market database. <a href="http://data.worldbank.org/indicator/SL.AGR.EMPL.ZS">http://data.worldbank.org/indicator/SL.AGR.EMPL.ZS</a> |
| Financial reform index       | Financial Reform Index, normalized to be between 0 and 1.  | World Development Indicators,<br>International Labour Organization,<br>and Key Indicators of the Labour<br>Market database. <a href="http://data.worldbank.org/indicator/SL.IND.EMPL.ZS">http://data.worldbank.org/indicator/SL.IND.EMPL.ZS</a>  |
| Private credit               | Private Credit by Deposit Money Banks and Other Financial Institution.   | World Development Indicators,<br>International Labour Organization,<br>and Key Indicators of the Labour<br>Market database. <a href="http://data.worldbank.org/indicator/SL.SRV.EMPL.ZS">http://data.worldbank.org/indicator/SL.SRV.EMPL.ZS</a>  |
| Employment in agriculture    | Employment in agriculture (percent of total employment) ; Agriculture corresponds to division 1 (ISIC revision 2) or tabulation categories A and B (ISIC revision 3) and includes hunting, forestry, and fishing.  | World Development Indicators,<br>International Labour Organization,<br>and Key Indicators of the Labour<br>Market database. <a href="http://data.worldbank.org/indicator/SL.SRV.EMPL.ZS">http://data.worldbank.org/indicator/SL.SRV.EMPL.ZS</a>  |
| Employment in industry       | Employment in industries (percent of total employment); Industry corresponds to divisions 2-5 (ISIC revision 2) or tabulation categories C-F (ISIC revision 3) and includes mining and quarrying (including oil production), manufacturing, construction, and public utilities (electricity, gas, and water).  | World Development Indicators,<br>International Labour Organization,<br>and Key Indicators of the Labour<br>Market database. <a href="http://data.worldbank.org/indicator/SL.SRV.EMPL.ZS">http://data.worldbank.org/indicator/SL.SRV.EMPL.ZS</a>  |
| Employment in services       | Employment in services (% of total employment); Services correspond to divisions 6-9 (ISIC revision 2) or tabulation categories G-P (ISIC revision 3) and include wholesale and retail trade and restaurants and hotels; transport, storage, and communications; financing, insurance, real estate, and business services; and community, social, and personal services. | World Development Indicators,<br>International Labour Organization,<br>and Key Indicators of the Labour<br>Market database. <a href="http://data.worldbank.org/indicator/SL.SRV.EMPL.ZS">http://data.worldbank.org/indicator/SL.SRV.EMPL.ZS</a>  |
| Trade openness               | Trade openness- defined as the sum of exports and imports of goods& services (from BOP statistics) divided by GDP.   | World Economic Outlook (WEO)   |
| Financial openness           | Financial openness.  | Lane and Milesi-Ferretti (2006)  |

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