POVERTY AND THE ECONOMY

May 2012

SUMMING UP

Results of a recent CGE (Computable General Equilibrium) model suggest that:

1. The impact of a European recession (2% decline in GDP) on Indonesia through trade-linkages would be negative but small, reducing Indonesian GDP by only 0.05 percent relative to baseline.
2. The impact of a more general recession (2% decline in GDP) in Europe, China and Japan on Indonesian GDP would also be negative but small, reducing Indonesian GDP by only 0.17 percent relative to baseline.
3. A recession in Europe, China and Japan would have a small, negative impact on poverty in Indonesia, with most of the negative effects being felt by higher income households. Higher income households would suffer the most because a recession would mainly reduce incomes in the capital and skill-intensive sectors in Indonesia.
4. The main explanation for the relatively small negative effects of recession on Indonesian GDP and poverty has to do with the country's relatively limited dependence on external trade.

The review of education and poverty in Indonesia has four key findings:

1. In Indonesia education clearly reduces poverty by increasing employment and other opportunities. Graduates of junior secondary school are 27 percent less likely to be poor than primary school graduates, and senior secondary graduates are 45 percent less likely to be poor.
2. While Indonesia has done a fine job of increasing enrollment rates at the primary school level, the transition from primary to secondary school is still problematic. Enrollment rates at the secondary level are about 30 to 40 percent lower than those at the primary level, and lower than rates in most neighboring countries.
3. Enrollment rates in secondary school are especially low for the poor in Indonesia. On the demand side, many poor households lack the means to send their children to secondary school. On the supply side, in remote (and poorer) areas there is a lack of trained teachers.
4. To increase the access of the poor to schooling, Indonesia has implemented an innovative cash transfer program (BSM) designed to keep poor students in school. However, initial reviews find that this program is not well targeted to the poor.
5. One of the main policy challenges for Indonesia is improving the quality of education at all levels of schooling. Results from recent standardized tests show that average test scores for Indonesian students are below those of students in other income-comparable countries.

Introduction

The recent recession in Europe—and the concomitant economic slowdown in China and Japan—leads to concerns about how these events will impact Indonesian GDP and poverty. The effect of these events on the Indonesian economy can work through a variety of channels, including trade, foreign and direct investment, and other monetary and financial channels. In this section, the analysis focuses on the impact through the trade channel.

The recession in Europe, and the slowdown in China and Japan, will reduce imports and exports from these countries and regions. Indonesian exports to these areas will also be affected. The impact on the Indonesian economy is likely to be negative, and the magnitude of the impact depends largely on the share that these countries have in Indonesian exports. This is the direct trade effect. The indirect trade effect is rather unclear. The reduction of imports by Europe, China and Japan will tend to reduce the world prices of commodities. Global deflation like this may reduce Indonesian exports yet increase Indonesian imports.

On the other hand, the decline in the export of goods from Europe, China and Japan may increase the world prices of some goods that they sell into the world market. To some countries (including Indonesia), this represents an opportunity to increase exports and to raise their world market share. This effect tends to work positively for the Indonesian economy. To complicate things, these effects will work differently among countries, each with a different type of repercussion on the Indonesian economy. Therefore, the overall net impact of recession on the Indonesian economy is difficult to predict and calls for a computable general equilibrium (CGE) analysis. SEADI thus contracted with Dr. Arief Yusuf from Padjadjaran University, Bandung, Indonesia, to analyze these issues using his CGE models.

Modeling and Simulation Strategies

To estimate the impact of a recession on the Indonesian economy and poverty, Dr. Yusuf used a Global Trade Analysis Project (GTAP) model.[1] This GTAP model is a multi-country,

[1]For more on the GTAP model, see Hertel, T., 1997, Global Trade Analysis: Modeling and Applications (Cambridge: Cambridge University Press)

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multi-sector general equilibrium model that is aggregated into 16 geographic regions and 57 economic sectors. The GTAP model is used in three different ways here. First, it is used to estimate the effect of a recession in Europe on the Indonesian economy. In this exercise, as well as the rest of the paper, recession is defined as a deviation of GDP of 2 percent below the baseline. That means a reduction of 2 percentage points from expected growth rates. Second, the GTAP model is used to estimate the effect of a broader recession—that is, a recession in Europe and China and Japan—on the Indonesian economy. Third, since the GTAP model cannot analyze distribution results within countries, Dr. Yusuf used an INDONESIA-E3 model to simulate the effects of a recession in Europe, China and Japan on Indonesian poverty. The INDONESIA-E3 model is a multi-sector, multi-household CGE model of the Indonesian economy. [2]

Recession in Europe, China and Japan and the Indonesian Economy

Results of the GTAP simulation suggest that a recession in Europe would have only a small, negative impact on the Indonesian economy. A 2 percent decline in Euro Zone countries' GDP would only reduce Indonesian GDP by 0.05 percent relative to baseline. A 2 percent decline in all 27 EU countries' GDP would still only reduce Indonesian GDP by 0.08 percent relative to baseline. The main explanation for these relatively small negative effects of a European recession has to do with the low dependence of Indonesia on international trade.

As might be expected, a more general recession in Europe, China and Japan would have a slightly larger negative effect on the Indonesian economy. A 2 percent decline in the GDP of Europe, China and Japan would reduce Indonesian GDP by 0.17 percent relative to baseline. This estimated reduction in Indonesian GDP is about three times larger than that estimated above for a similar decline in Euro Zone countries' GDP. The reason for this difference has to do with China. A 2 percent decline in Chinese GDP has a larger negative effect on the Indonesian economy than a similar 2 percent decline in Euro Zone GDP.

Preliminary GDP figures for Indonesia for the first quarter of 2012 were recently released by the government. These figures show Indonesian GDP growing at 6.3 percent, which is consistent with the GTAP results.

Recession in Europe, China and Japan and Poverty in Indonesia

The January Poverty Brief showed that the growth elasticity of poverty in Indonesia over the past 20 years is about -1, that is, a 5 percent increase in GDP would lead to a 5 percent decrease in poverty. Applying this to the GTAP modeling results, one would expect that a 0.17 decline in GDP growth would result in a 0.17 percent increase in the national headcount of poverty, or a change from 12.35 to 12.37 percent. This is a very small change. The CGE results show a similar, but slightly higher impact on poverty. Simulation results suggest that a 2 percent decline in the GDP of Europe, China and Japan would increase the headcount of poverty in Indonesia by 0.19 percent, from 12.35 to 12.54 percent. Again, this is a small change.

There are two explanations for the relatively small impact of a recession in Europe, China and Japan on poverty in Indonesia. First, the effect of a recession on overall mean real consumption in Indonesia would be small. The mean real consumption of poor households in Indonesia (lowest quintile group) would decline by only 0.3 percent while that of rich households (top quintile group) would decline by 0.7 percent. Second, as the preceding figures suggest, the impact of a recession would be felt more by high income households. Higher income households would suffer most because a recession would mainly reduce incomes in the capital and skill-intensive sectors in Indonesia. Since the poor (by definition) do not own capital, and do not possess many skills, they would not suffer as much from a global recession.

Policy Implications for Indonesia

By nature, a recession is deflationary. This means that any decline in the GDP of Europe, China and Japan will not have much of an impact on the cost of living of the poor in Indonesia. In the event of a recession, government policy in Indonesia should therefore be less concerned with inflation and more focused on employment policies for the poor. Since

2 For more on the INDONESIA-E3 model, see Yusuf, A., 2008, "An Indonesian Applied General Equilibrium Model for Analyzing the Economy, Equity and the Environment," Working Papers in Economics and Development Studies, Department of Economics, Padjadjaran University, Indonesia.

they are less skilled, the poor are likely to be the first to lose their jobs in the event of a recession. If a global recession occurs, the Government of Indonesia would therefore be well -advised to consider programs for ensuring the continued employment of unskilled laborers.

Education and Poverty in Indonesia

Education is one of the most powerful factors affecting poverty in Indonesia. As in most developing countries, having more education in Indonesia is closely associated with a reduced likelihood of being poor. According to the World Bank (2006),[3] graduates of junior secondary school (9 years of education) are 27 percent less likely to be poor than primary school graduates (6 years of education), and senior secondary graduates (12 years of education) are 45 percent less likely to be poor than primary school graduates.[4]

Education reduces the likelihood of poverty because it raises both the productivity and the employability of workers. In Indonesia 60 percent of the poor work in agriculture and the vast majority of these workers have a primary school education or less. By contrast, less than 15 percent of the poor in Indonesia work in manufacturing and trade, and the vast majority of these workers have more than a primary school education. These figures suggest that one of the key ways to reducing poverty in Indonesia is to raise education rates in rural areas in order to move people to move out of agriculture and into the more productive—and better paying sectors—of manufacturing and trade.

In Indonesia, as in most developing countries, education reduces poverty because it leads to better pay and higher rates of household consumption. When compared to households with an uneducated head, in urban areas having a household head with primary education raises household consumption by 6 percent. Using the same basis of comparison, in urban areas having a household head with senior secondary education in Indonesia increases household consumption by 33 percent.[5] In other words, more education leads to significantly higher rates of household consumption in urban areas.

Education also leads to higher incomes for countries. While Indonesia has recorded impressive rates of income (GDP) growth in recent years, the share of its labor force with a secondary education is still quite low: 20.6 percent in 2007. By contrast, neighboring countries have much higher shares of their labor force with a secondary education: 36.4 percent for the Philippines, 56.3 percent for Malaysia and 48.6 percent for Singapore. Raising the share of workers in the labor force with a secondary education increases the income of both countries and households.[6]

Education Outcomes and Government Policy in Indonesia

Education outcomes need improvement in Indonesia, especially in the transition from primary to secondary school. Since 1980 the Government has done a fine job of increasing enrollment rates at the primary level. In 2009 school enrollment rates at the primary level were 116.9 percent (gross) and 95.3 percent (net).[7] While gross enrollment rates of over 100 percent may indicate some inefficiencies due to a large number of grade repeaters, in general the problem in Indonesia comes not at the primary level but in the transition from primary to secondary school. In 2009 school enrollment rates at the secondary level in Indonesia were 75.1 percent (gross) and 65.1 percent (net). Not only are these enrollment rates at the secondary level about 30 to 40 percent lower than those at the primary level, but they are also lower than those of several neighboring countries (Philippines, Vietnam and Thailand).

In Indonesia transition rates from primary to secondary school are especially low for the poor. According to the World Bank (2012), less than 50 percent of the children from poor households who enrolled in first grade made it to junior secondary school and less than 20 percent of them made it to senior secondary school. By contrast, 90 percent of the children from the richest quintile group made it to junior secondary school and over 75 percent made it to senior secondary school.[8]

The low transition rates for the poor from primary to secondary school in Indonesia re caused by a variety of factors. On the demand side, many poor households want to send their children to secondary school, but simply cannot afford it. According to Susenas survey data, 34 percent of

3 World Bank, 2006, *Making the New Indonesia Work for the Poor,* Washington, D.C., p. 42.

4 These results should be regarded as correlates of the relationship between education and poverty rather than purely statistical causes of the impact of education on poverty, because causality can run both ways between the two variables.

5 World Bank, 2006, p. 48

6 A simple model based on 32 developing countries and regressing country per capita GDP on share of county labor force with primary and secondary education shows that share of country labor force with secondary education has a positive and highly significant effect on level of country per capita GDP.

7 Gross enrollment rate is the number of children enrolled in a specific level divided by the number of children in the age group specific for that level. Net enrollment rate is the number of children of a specific age group enrolled in school at the age appropriate level divided by the number of children in that age group.

8 World Bank, 2012, *Bantuan Siswa Miskin: Cash Transfers for Poor Students,* Washington, DC, p. 4.

poor households with children reported difficulties in financing school fees at the primary level, while 44 percent of these households reported difficulties at the junior secondary level. In other words, education is better subsidized by the government for the poor at the primary level (where it represents only 2.8 percent of total expenditure of the poor) than at the junior secondary level (where it represents 7.2 percent of total expenditure of the poor) (World Bank, 2006).

On the supply side, there is a need to increase both the quantity and quality of secondary schools. At present, the availability of junior secondary schools is much lower than that of primary schools, with a 7 to 1 ratio in favor of the latter. This unfavorable ratio reduces the poor's access to secondary schooling and could be redressed by converting some primary schools into secondary schools. Of perhaps greater importance is improving the quality of secondary school education, especially in remote areas. While Indonesia in general has an oversupply of teachers, these teachers tend to be poorly paid and to be unwilling to move to more remote areas. According to the latest study, 74 percent of remote schools have too few trained teachers,[9] and this has a deleterious impact on the learning experiences of the poor.

Policy Implications and Challenges for Indonesia

In terms of spending on education, Indonesia needs to increase its overall expenditures on education. At present, Indonesia spends about 2.8 percent of GDP on education, compared to 3.3 percent for Singapore, 3.7 percent for Thailand, 4.1 percent for Malaysia and 5.3 percent for Vietnam. In the future, it would be also be useful if less of Indonesian expenditures on education went into teachers' salaries and more went into books and teaching materials. According to UNICEF, about 40 percent of Indonesian students at the primary level have no textbooks.

To increase the access of the poor to schooling, the Government of Indonesia in 2008 began an innovative program (Bantuan Siswa Miskin) (BSM). This program provides cash transfers to poor households to keep their children in school. Poor households meeting certain school attendance requirements for their children receive between Rph. 360,000 (primary level) and Rph. 780,000 (senior secondary level). While this BSM program has grown into one of the largest household-based transfer programs in Indonesia,[10] initial reviews suggest that it does a poor job of targeting poor students. For example, a recent review by the World Bank (2012) found that students from poor households (lowest two quintile groups) only receive about half of all BSM scholarships. In other words, a rupiah of cash transfers from BSM was just as likely to go to a poor student as it was to a non-poor student.

Improving the quality of learning at all levels of education remains the most pressing policy challenge facing the Government. Standardized international test scores represent an objective indicator of performance in the education sector. Scores from two standardized international tests administered in 2007 and 2009 suggest that the standard of education among 15-year-olds in Indonesia is slightly lower than that of other income-comparable countries.[11] Table 1 shows that average test scores for Indonesia in three key areas—reading, mathematics and science—fell below those recorded for Malaysia, Thailand, Jordan and Tunisia.[12]

Table 1. Comparing Average International Test Scores: Malaysia, Thailand, Jordan, Tunisia and Indonesia, 2007 and 2009

	Trends in International Mathematics and Science		Program for International Student Assessment Study		
	Math	Science	Reading	Math	Science
Malaysia	474	471	—	—	—
Thailand	441	471	421	419	425
Jordan	427	482	405	387	415
Tunisia	420	445	404	371	401
Indonesia	397	427	402	371	383

Note: The TIMSS Study included 48 countries at grade 8 and the PISA Study included 65 countries at age 15 years.

9 According to the World Bank (2006: 139), at the junior secondary level the pupil-to-teacher ratio is 14 to 1.

10 At present, BSM is the third largest household-based transfer program in Indonesia, behind Raskin (rice subsidy program) and Jamkesmas (health insurance program)

11 With the exception of Malaysia, all of the countries listed in Table 1 have per capita GDP levels of less than $8,500 per year (per capita GDP, PPP, constant 2005 international dollars).

12 For more on this point, see Suryadarma, D, 2011, "The Quality of Education," in Manning and Sumarto (eds), *Employment, Living Standards and Poverty in Indonesia*, Institute of Southeast Asian Studies, Singapore

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