Editor’s Desk

As Thinking Aloud steps into its 12th month, we present to you a special issue on Post 2015 Development Agenda. This issue presents six articles with a strong common message that better economic policies and improving the quality of institutions will be very crucial in the post 2015 development era. The first article on “How to end global hunger?” depicts that hunger could be reduced through economic growth, increased food production, improved sanitation facilities, and rise in health expenditure together with ensuring government stability. The second article on “How to enhance gender equality?” reveals that economic growth doesn’t necessarily bring gender equality, whereas infrastructural advancement, public expenditures on health and education, bureaucracy quality and reduction in internal conflict are very crucial. The third article titled “What makes doing business easier?” shows that economic growth, trade openness, reduced cost of lending and improvement in political and economic institutions are important for the ease of doing business. The fourth article on “How to ensure water and sanitation for all?” shows that ensuring water and sanitation for all would require economic growth and infrastructural development, together with the rise in bureaucracy quality, democratic accountability and government stability. The fifth article on “What matters most for environmental performance?” suggests that economic growth, infrastructural development, health expenditure, urbanization, together with improvement in bureaucracy quality have important positive influence on environmental performance. The sixth article on “Why do countries differ in educational attainment?” shows that a strong nexus between economic policies and institutional development can help attaining educational development.

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Thinking Aloud

How to end global hunger?

Selim Raihan and Fatima-Tuz-Zohora

The Sustainable Development Goals (SDGs) are a proposed set of targets to replace the Millennium Development Goals by the end of 2015. The second goal of the SDGs targets to “end hunger, achieve food security and improved nutrition and promote sustainable agriculture”. There is no doubt that eradicating hunger is one of the biggest challenges for economic development to be sustainable. In the low income countries, and especially in the LDCs, this challenge is perhaps more critical. In order to understand the factors affecting global hunger we have estimated cross-country panel regressions for 117 countries using data for the years of 1990, 1995, 2000, 2005 and 2010. The state of hunger across countries, captured by the Global hunger index (GHI) of IFPRI (www.iprri.org), is used as the dependent variable. In the IFPRI report, the data of GHI for 2014 was constructed using data from 2009 to 2013, and we consider this as GHI for 2010. The GHI index is based on three components: % of undernourished in the population, % of underweight in children under age five, and under five mortality rate; and each of the three components is weighted equally. The index varies between a minimum of 0 and a maximum of 100. The maximum value of 100 would mean all children died before their fifth birthday, the whole population was undernourished, and all children under five were underweight. The minimum value of zero would mean that a country had no undernourished people in the population, no children under five who were underweight, and no children who died before their fifth birthday. However, the GHI data shows that in 1990, the worst performer was Angola with hunger index of 40.8, and in 2010 the worst performer was Burundi with hunger index of 35.6. In our panel regression, to focus on the hunger status of LDCs and developing countries, we have excluded all developed countries from our analysis.

For the explanatory variables, we have used initial real GDP per capita, level of real GDP per capita, food production index, three indicators related to expenditure on health, % of population with access to improved sanitation facilities, % of children immunized with measles vaccine, % of children immunized with DPT vaccine, trade-GDP ratio, share of agriculture in GDP to capture country’s dependence on agriculture, and the LDC dummy. The source of these data is the World Bank’s World Development Indicators. We have also used several institutional variables from the ICRG database (www.prsgroup.com) to see whether institution matters in reducing hunger.

The regression results show that initial GDP per capita has a negative coefficient though not statistically significant. However, the level of real GDP per capita has a negative impact on hunger; and 1% rise in real GDP per capita would lead to 2.3 unit reduction in the hunger index. Food production index has a negative impact on hunger; and 1 unit increase in the food production index would reduce hunger index by 0.1 unit. We tried three separate regressions to consider three different health expenditure variables; and they are public expenditure on health as % of GDP, total health expenditure as % of GDP, and out of pocket health expenditure as % of total health expenditure. We find that, only the variable total health expenditure as % of GDP turns out to be statistically significant, where a percentage point increase in the share of total health expenditure in GDP would reduce hunger index by 0.1 unit. Improved sanitation has a negative impact on hunger; and a percentage point increase in the ratio of improved sanitation facilities would reduce hunger index by 0.1 unit. Trade openness doesn’t appear to have any significant impact. Reduced dependence on agriculture is negatively associated with hunger and a percentage point decline in the share of agriculture in GDP would reduce hunger index by 0.04 unit. Immunizations of DPT and measles are significantly related with hunger; and a one percentage point increase in the coverage of vaccination of DPT and measles would reduce hunger by 0.02 and 0.01 units respectively. The LDC dummy shows that being an LDC would increase the hunger index by 10 units.

We also calculated the z-score of the regression coefficients to compare the relative magnitude of their impacts on reducing hunger. It appears that the strongest negative effect on hunger comes from the rise in per capita GDP followed by increased food production, improved sanitation facilities, and rise in health expenditure together with ensuring government stability.

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How to enhance gender equality?  
**Selim Raihan and Nabila Tasnua**

The fifth goal of the SDGs aims to “Achieve gender equality and empower all women and girls”. This goal focuses on ending discrimination, violence and malpractice of any form against women and provide them with equal rights in terms of obtaining education, health services and labor market participation.

In order to explain the gender equality situation in the cross-country context we have constructed a ‘Gender Equality Index’ (GEI) and conducted cross country panel regression for 165 countries to investigate what factors affect gender equality. The GEI is constructed annually for the period between 2000 and 2010, and is used from 2004 considering Doing Business indicators. The index is constructed taking into consideration three major components like health, education and empowerment. The indicators for health are adolescent fertility rate, maternal mortality rate and ratio of female to male life expectancy. The indicators for education are the ratio of female to male in primary enrollment and the ratio of female to male in secondary enrollment. The empowerment indicators are the proportion of seats held by women in the government and the ratio of female to male labor force participation. After normalizing the data the GEI is constructed by taking the arithmetic mean of the seven indicators. The value of this index varies between 0 and 100, and the higher the value of the index the more it demonstrates gender equality. In 2000, the best performer was Sweden with an index value of 86 and the worst performer was Afghanistan with an index value of 16. In 2010, the best performer was Belarus with an index value of 88.9 and the worst performer was Somalia with an index value of 24.8.

In the cross-country panel regression, we have used public expenditure on education as % of GDP as one of the explanatory variables, as literature suggests access to education is a key determinant for bringing gender equality. Similar to education, health is considered as an important determinant that influences gender equality and we have considered public expenditure on health as % of GDP as another explanatory variable. The other explanatory variables are initial per capita GDP, level of per capita GDP, trade-GDP ratio, remittance-GDP ratio, and subscriptions of mobile phone and fixed telephone users per 100 people (to capture the effect of infrastructure on gender equality).

Along with these explanatory variables some institutional variables (taken from ICRG database: www.prsgroup.com) are used to observe their effects on gender equality. The data for constructing the Gender Equality Index are taken from World Bank, UNDP, WHO and UNESCO; and the source of explanatory variables is the World Bank’s World Development Indicators. The panel regression results show that while initial level of per capita GDP has a positive and significant impact on gender equality index, the change in the level of per capita GDP doesn’t have any impact, which suggests that economic growth doesn’t necessarily enhance gender equality. However, both public expenditure on health and education have positive impacts on GEI. A percentage point rise in the ratio of public expenditure on health to GDP would lead to 0.7 point rise in the GEI, while such rise in the ratio of public expenditure on education to GDP would lead to 0.15 point rise in the GEI. Both trade openness and remittance-GDP ratio have positive and significant impact on GEI. A percentage point rise in trade-GDP ratio would increase GEI by 0.02 points, and similar increase in remittance-GDP ratio would increase GEI by 0.07 points. Both the infrastructural variable as per expectation have positive impacts. If mobile and telephone users increase by 100 persons GEI would increase by 0.3 and 1.3 points respectively. In the case of institutional variables, we have found that the rise in bureaucracy quality and reduction in internal conflict have positive and significant impact on GEI. We also calculated the z-scores of the regression coefficients to compare the relative magnitudes of the effects of the explanatory variables. The GEI is constructed annually for the period between 2000 and 2010 considering Doing Business indicators.

What makes doing business easier?  
**Selim Raihan and Md Abdur Rahim**

The ninth Sustainable Development Goal (SDG) targets to “Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation”. There is a lack of good and consistent data on infrastructure across countries for a longer time horizon. Since, one of the fundamental objectives of building resilient infrastructure is to cut the cost of doing business, in this article we have explored the factors which can make the doing business easier. We have estimated cross-country panel regressions for 146 countries for the period from 2004 to 2012 considering Doing Business indicators as the dependent variables. The doing business data is taken from the World Bank (www.doingbusiness.org). There are 10 doing business indicators – Starting a Business, Dealing with Construction Permits, Getting Electricity, Registering Property, Getting Credit, Protecting Minority Investors, Paying Taxes, Trading Across Borders, Enforcing Contracts, and Resolving Insolvency. We have considered the distance to frontier (DTF) index of the Doing Business data. The DTF of any doing business indicator shows the distance of each economy to the ‘frontier’ which represents the best performance observed on each of the indicators across all economies. This allows to see the gap between a particular economy’s performance and the best performance at any point in time and to assess the absolute change in the economy’s doing business environment over time. An economy’s distance to ‘frontier’ is reflected on a scale from 0 to 100, where 0 represents the lowest performance and 100 represents the frontier. For example, a score of 75 means an economy was 25 percentage points away from the frontier constructed from the best performances across all economies and across time.

In the cross-country panel regressions, as the explanatory we have used initial per capita GDP, level of per capita GDP, trade-GDP ratio, remittance-GDP ratio, lending interest rate, mobile cellular subscriptions per 100 population and several institutional variables from the ICRG database (www.prsgroup.com) to see whether institution matters in doing business. The data for the explanatory variables are taken from the World Bank’s World Development Indicators. We have run a number of panel regressions considering each of the 10 DTF indicators as the dependent variable. The regression results show that, while the initial GDP per capita doesn’t have any significant impact on DTF in all cases, the rise in per capita GDP has positive associations with all subcategories of DTF of doing business indicators except DTF of dealing with construction permits and paying taxes. 1% increase in per capita GDP would lead to 2.58% rise in the DTF of doing business indicators which are in the range of 2 to 6 percentage points, with the largest impact in the case of DTF of getting electricity. The trade-GDP ratio appears to have positive significant effect on the DTFs of construction permits, protecting minority investor, and paying taxes; however it has no significant effect on the DTFs of other indicators. Lending interest rate has negative and significant impact on DTFs of starting a business, getting electricity and resolving insolvency, while it has no significant impacts on other DTFs. Mobile subscription per thousand people has positive and significant association with DTFs of each subcategories of doing business indicators with different magnitudes, with the largest impact observed in the case of the DTF of starting a business. We have found that the rise in the number of mobile users would increase the distance to frontier. Control over corruption, democratic accountability and low degree of military in politics appear to have statistically significant and positive impact on many of the DTFs. Control over corruption has a significant positive impact on DTF of all doing business indicators except registering property and enforcing contracts. The democratic accountability has significant positive impact on the DTFs of starting a business, getting credit, protecting minority investors and trading across borders, with insignificant impacts on other DTFs. Low degree of military in politics positively affects the DTFs of starting business, trading across borders, registering property, and getting credit, while others are unrelated.

The above analysis leads to some important policy concerns. Economic growth and trade openness have positive implications for mobile telephone users, which could lead to a reduction in the cost of doing business. The rise of lending interest rate would particularly deteriorate the DTFs of some of the important indicators of doing business. The rise in mobile subscription would lead closer to the frontier of ease of doing business. Finally, institutions have very important role for DTF as control over corruption is expected to result in a business friendly environment and so does the democratic accountability. Low degree of military in politics improves some of the indicators of doing business.
How to ensure water and sanitation for all?  
Selim Raihan and Syer Tazim Haque  
The sixth goal of the SDG is to “Ensure availability and sustainable management of water and sanitation for all”. In order to explore the factors that determine access to safe water and proper sanitation, we have run several cross-country panel regressions for 107 countries for the period between 1990 and 2010, considering % of people with access to improved water source (national, rural and urban) and % of people with access to improved sanitation facilities (national, rural and urban) as the dependent variables. For the explanatory variables, we have considered initial per capita GDP, level of per capita GDP, government expenditure as % GDP, urban population as % of total population, population in the largest city (in million), school primary enrollment rate, trade-GDP ratio, number of mobile and fixed telephone line users in 1000 people. The source of these data is the World Bank’s World Development Indicators. Several institutional variables from the ICRG database (www.prsgroup.com) are also considered to see their impacts. The three regression results (for national, rural and urban) in the case of % of people with access to improved sanitation facilities as the dependent variable show that initial per capita GDP has a significant positive impact on improved access to sanitation at the national level and in the urban area, while for rural area it is insignificant. Per capita GDP has positive and significant effect in all three cases. Both urban population and population in the largest city have positive significant impacts, where a percentage point increase in the share of urban population increases the access to sanitation by 0.58 percentage points, and if population of the largest city increases by a million it increases access to sanitation by 0.17 percentage points. The impact of government expenditure is found to be statistically insignificant at the national level and in the urban area, while it has a positive and significant effect in the rural area. School primary enrollment has positive significant impact at the national level and in the urban area, whereas it is not significant in the rural area. Infrastructure has a positive impact in all three cases, and at the national level it is found that if fixed telephone line users increase by 1000 persons, access to sanitation would increase by 1.6 percentage points. Trade openness also has positive impact on sanitation, and one percentage point rise in the trade-GDP ratio would increase the access to sanitation by 0.02 percentage points. For both telephone line users and trade openness, the impacts are larger in the rural area than in the urban area. In the case of the institutional variables, bureaucracy quality has positive significant impacts on improved access to water at the national level and in the rural area but not in the urban area. Bureaucracy quality also has positive significant effects on access to sanitation in all three cases with larger impacts in the rural area than in the urban area. Democratic accountability has insignificant impact on access to sanitation, but is significant and positively associated with access to water in the rural area. Lastly, government stability is positively and significantly associated with improved access to sanitation in the rural area, and has a positive significant impact on access to water for both rural and urban areas.

What matters most for environmental performance?  
Selim Raihan and Israt Jahan  
Four of the Sustainable Development Goals (SDGs) are directly and indirectly related to environment. They are the third goal: “Ensure healthy lives and promote well-being for all at all ages”; the sixth goal: “Ensure availability and sustainable management of water and sanitation for all”, the thirteenth goal: “Take urgent action to combat climate change and its impact”; and the fifteenth goal: “Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss”. There is no denying the fact that protection of environment is extremely critical for the promotion of sustainable development.

In order to see what affects environment performance, we have used an index of environmental performance as the dependent variable in our cross country panel regression models for 167 countries. The data of Environmental Performance Index (EPI) is taken from Yale Center for Environmental Law and Policy (YCELP) (http://epi.yale.edu). This index includes two broad areas of environmental and ecological concerns - Environmental Health (EH) and Ecosystem Vitality (EV). Indices like health impacts, air quality, water and sanitation make EH index, where EV index concerns about water resources, agriculture, forests, fisheries, biodiversity and habitat, climate and energy. The EPI, EH and EV have a scale of 0 to 100, where higher scores depict better environmental performances. In 2012, the top 5 countries with highest EPIs were Switzerland (87.7), Luxembourg (83.3), Australia (82.4), Singapore (81.8) and Czech Republic (81.5). In the same year, the bottom 5 countries with lowest EPI were Somalia (15.5), Mali (18.4), Haiti (19), Lesotho (20.8) and Afghanistan (21.6). The scores and the rankings may differ for EH and EV indices. For example, in 2012, though Australia’s EV index was lower than those of the Czech Republic and Germany, the EH index for Australia was much higher, and ultimately, the EPI of Australia was the highest among these three countries. We have run cross-country panel regression models for 167 countries with an annual data for the period from 2002 to 2012. The explanatory variables are initial per capita GDP, level of per capita GDP, share of industry in GDP, population growth rate, share of urban population in total population, total health expenditure as % of GDP, trade-GDP ratio, number of mobile cellular users in 100 people as a proxy for infrastructure, several intuitional variables, and LDC dummy. The data of these explanatory variables are taken from World Bank’s World Development Indicators. Data of institutional variables are taken from the ICRG database (www.prsgroup.com).

Regression results show that, initial per capita GDP has a positive impact on the EPI. The rise in per capita GDP also has positive and significant effect, and one increase in real GDP per capita would increase EPI by 0.0002 points. Per capita GDP has however, a larger positive impact on EH index than on EV index. The share of industry value addition in GDP doesn’t appear to have any significant impact on either EPI or EH or EV indices. Fall in population growth rate has a positive impact on overall EPI. A percentage point rise in the share of urban population in total population would increase EPI by 0.31 points; however, such rise has a greater impact on EH index (by 0.60 points) than on EV index (by 0.16 points). With no significant impact on EV, total health expenditure as % of GDP has its positive impact on EH and overall EPI; and a percentage point rise in the share of health expenditure in GDP would improve the EPI by 0.14 points. Infrastructure has a positive impact, and it is found that if the number of mobile phone users increases by 100 persons, EPI would increase by 0.2 points. Trade openness appears to be an influential variable with its significant impact on EV and EPI, as a percentage point rise in trade-GDP ratio would increase EV and EPI by 0.01 and 0.008 points respectively. The coefficient on LDC dummy suggests that being an LDC would reduce the EH and overall EPI by 8.5 and 6.1 points respectively. To expand the scope of the study, we have checked how institutional factors may have impact on environmental performances. We have found that bureaucracy quality turns out to be the most important institutional variable in positively affecting the EPI.

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Why do countries differ in educational attainment?

Selim Raihan and Ahmed Tannay Tahsin Ratul

The fourth of the Sustainable Development Goals (SDGs) aspires to “Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all”. Education is a critical component of wellbeing that is thought to have major impact on economic development and quality of life.

To explore why countries differ in educational attainment, we have run cross-country panel regressions considering the ‘Education Index’ from the ‘Human Development Index’ as the dependent variable. Education Index is a measure of educational attainment of the countries. Education Index is a composite index, calculated from the ‘mean years of schooling index’ and the ‘expected years of schooling index’ (http://hdr.undp.org). The Education Index varies between 0 and 1, where 1 is the best value; hence, the higher the value the country has, the better is the educational performance of that country. The data are available for 194 countries with five-year intervals for 1980, 1985, 1990, 1995, 2000, 2005 and 2010. In 1980, the best performer was Australia with Education Index of 0.87 and the worst performer was Niger with Education Index of 0.06. In 2010, the best performer was again Australia with Education Index of 0.92 and the worst performer was again Niger with Education Index of 0.18.

We have considered several explanatory variables in our panel regression models, which are initial per capita GDP, level of per capita GDP, progression to secondary school (which is the number of new entrants to the first grade of secondary school in a given year as a % of the number of students enrolled in the final grade of primary school in the previous year excluding the repeaters from the last grade of primary education in the given year), public expenditure on education as % of GDP, under five mortality rate, pupil-teacher ratio in primary schooling and pupil-teacher ratio in secondary schooling. In addition, several institutional variables are considered with data from ICRG (www.psrsgroup.com) to see whether institutional matters in cross-country differences in educational attainment. Data of the explanatory variables are taken from the World Bank’s World Development Indicators.

The regression results show that, after controlling for initial per capita GDP, the level of per capita GDP has a positive and significant impact on Education Index. 1% increase in per capita GDP would increase Education Index by 0.06 units. Progression to secondary school has a positive and significant impact on educational attainment. A unit increase in progression to secondary school would result in 0.002 units increase in Education Index. Public expenditure on education has positive and significant impact on Education Index. A percentage point rise in public expenditure on education would raise Education Index by 0.01 units. Reduction in child mortality has positive and significant impact on educational attainment. A percentage point reduction in under five mortality rate would raise Education Index by 0.001 units. Finally, provision of quality of education, as proxied by pupil-teacher ratio, has significant impact on educational attainment. One percentage point reduction in pupil-teacher ratios in the primary and secondary schooling would raise Education Index by 0.001 and 0.002 units respectively.

The analysis reveals interesting insights when individual institutional variables are introduced in the base model. It appears that democratic accountability, better investment profile, improved law and order, government stability, low degrees of internal and external conflicts, and low degrees of military and religion in politics have significant and positive impacts on educational attainment. Among these, the most important institutional variable appears to be the democratic accountability.

The regression analysis poses important policy implications. In addressing the objectives of the fourth SDG, countries should focus on economic growth, raising public expenditure on education, reduce child mortality and increase the quality of education. However, there is also a vital need to emphasize on the state of democracy, ensuring accountability along with a stable government that boost investment conditions. Internal and external conflicts are also vital issues to be contained for ensuring better, equitable and quality education, which would eventually result in the rise in educational attainment. Mitigation of involvements of military and religion in politics are also essential in enhancing educational attainment. Thus, a strong nexus between economic policies and institutional development can improve conditions for attaining the fourth Sustainable Development Goal by all countries by 2030.

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NTA South-South training workshop at Bangkok, Thailand

National Transfer Accounts (NTA) South-South Training Workshop on Increasing Technical Capacity was held from March 30th to April 4th, 2015 in Bangkok, Thailand. Main goal of the workshop was to assist several Asian countries in constructing the NTA by increasing their technical capacity. The training workshop consisted of rigorous hands on training, data analysis and most importantly experience sharing from the Thailand team who very recently constructed their core NTA. Muhammad Moshur Rahman and Syer Tazim Haque, Research Associates at SANEM, participated in this Training Workshop on behalf of SANEM and Bangladesh. Bangladesh team constructed the flow account by disaggregating it genderwise. The findings by team Bangladesh was highly appreciated as it reflected several gender issues prevailing in Bangladesh.

Roundtable meeting held at Kolkata, India

The second roundtable of BIMSTEC Network of Think-Tanks (BNTT) was held at University of Calcutta, Alipore Campus, Kolkata, India on March 28, 2015. The topic of the roundtable was “BIMSTEC Integration: Challenges and Tasks Ahead”. Dr. Selim Raihan (Executive Director, SANEM) presented during the session on Trade, Investment and Technology. This session was chaired by Professor Ajitava Raychaudhuri (Jadavpur University).

SAARC-ADB special meeting

SAARC-ADB special meeting on “Regional Economic Integration Study (Phase-II)” was held at Goa, India on 14-15 April, 2015. On April 14, 2015, the meeting commenced with opening statement by Ms. L. Savithri (Director, Economic, Trade and Finance Division, SAARC Secretariat) on behalf of Secretary General of SAARC. The heads of Delegations on SAARC-ADB Regional Economic Integration Study (Phase-II) made presentation during the meeting. Presentation on important recommendations of the study was given by the lead consultant Dr. Selim Raihan (Executive Director, SANEM).

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