THE WORLD BANK GROUP

2016 GTAP Advisory Board Report

DECPG (Development Prospects Group)

Ahmed, S.A. and M. Cruz (2016) "Making the Most of Demographic Change in Southern Africa", Background paper for World Bank (forthcoming) Forever Young? Preparing Social Sectors for Demographic Change in Southern Africa, Washington, DC: World Bank. (Also being presented at Global Economic Analysis Conference 2016).

The countries of the Southern African Customs Union (SACU) have relatively diverse demographic and economic starting points. These economies have the potential realize demographic dividends, and experience an acceleration in their income per capita growth and poverty reduction progress through expected shifts in their age-structures. 35 to 75 percent of poverty reduction in 2015-50 in SACU economies could be attributed to demographic shifts in a business-as-usual scenario of economic development, if employment rates are at least maintained. However, due to their different demographic patterns and trends, qualitatively similar policy outcomes can interact with their demographics to lead to varying growth and poverty outcomes. The magnitude of the demographic dividends could be higher if countries are able to achieve policy outcomes in parallel in the areas of education, savings-investment, and employment. Scenario analyses of these different policy outcomes interacting with the shifting age-structures in different ways suggest quantitatively different economic impacts despite qualitatively similar policies. Improving educational attainment is found to be most important in Lesotho and Swaziland; mobilizing savings for higher investment can be most useful for Botswana; and improving employment rates, especially by closing gender gaps, can be most useful for South Africa and Namibia.

Aguiar, A., S.A. Ahmed, and C. Carrico (2016) "Migration Response to Oil Price Volatility: A Dynamic Simulation of Migration from South and Southeast Asia to the Gulf States", mimeo. (Also being presented at Global Economic Analysis Conference 2016)

The possible end of the commodity price super-cycle could entail low oil prices for several decades to come affecting growth in many economies. Net oil importers in South and South-East Asia could benefit from lower intermediate inputs and higher real incomes. Yet they could also experience lower remittance flows due to fewer migrants being demanded by the GCC, where potentially lower labor demand due to low oil prices dampening welfare prospects in the migrant-sending countries due to loss of remittance income and lower domestic wages. Indeed, it is possible that faster economic growth in the migrant-sending countries may also reduce the push factors to migrate. Keeping in mind the threat of lower remittance income to development prospects in these Asian economies, a scenario analysis finds that low oil prices provide a net benefit to South and South-East Asian migrant sending countries over the next 15 years. This is because of the boost to domestic production through lower inputs costs. The anticipate welfare loss due to lower migration flows to the GCC are found to be modest in the long term due to the relatively robust migration flows; most Asian economies maintain stable migrant flows into the GCC region.

Ahmed, S.A., D.S. Go, and D.A. Willenbockel (2016) "Global Migration Revisited: Short-term costs and long-term gains", World Bank Policy Research Working Paper 7628 (Also being presented at Global Economic Analysis Conference 2016)

This paper re-examines the development implications of international migration focusing on two issues: how the costs and benefits of migration change over time, and the significance of South-South migration for development. First, the analysis finds that although greater migration could push down the wages of native workers of advanced countries in the short run, these wages eventually recover. This pattern would be mostly caused by the beneficial effect of additional labor on the real returns on capital and fostering faster capital formation. Additional South-North migration could favor capital income recipients and reduces labor income in host regions in the short run. In contrast, in sending countries, capital owners could experience lower incomes while wages rise. Globally, the welfare gains of new migrants could be expected to exceed the losses of old migrants by a wide margin. The remaining natives in sending countries could enjoy a net increase in remittances as well as an increase in labor income, although income from capital might decline. Second, in a hypothetical scenario with lower South-South migration, the implied losses of remittance income could lead to substantially lower welfare in developing countries. Although the wage differentials among developing countries tend to be smaller relative to their wage differentials with high-income countries, South-South migrants make substantial contributions to remittances.

World Bank (2015) Global Monitoring Report 2015/2016: Development Goals in an Era of Demographic Change. Washington, DC: World Bank

Part 2 of the report analyses major demographic shifts that will shape economic growth and development for decades to come. The world's population growth has slowed markedly. At the same time the global working-age share peaked in 2012 and is now declining with seismic implications. Population trends vary widely among countries and regions. The centers of global poverty will experience increases in working-age populations, offering the opportunity to reap a demographic dividend from rising incomes. However, many of these countries are plagued by conflict and fragility, and will need to accelerate job creation and investment in human capital to seize the advantage their young populations afford them. In contrast, the engines of global growth are aging rapidly and many will experience outright population contraction alongside dwindling working-age shares. These countries must cement economic gains by boosting productivity, taking steps to increase labor force participation, and adopt fiscally sustainable old-age support systems. The report classifies countries according to where they stand on the demographic spectrum and recommends appropriate policies at each stage. It also urges policy makers to ensure openness to flows of labor, trade and capital to smooth population imbalances.

World Bank (forthcoming) Searching for the Demographic Dividend in Mozambique: An Urgent Agenda. Washington, DC: World Bank

The LINKAGE-GIDD framework is used, following the approach of Ahmed et al. (forthcoming) to examine the impact of changes in age-structure on growth and poverty reduction in Mozambique under multiple alternative fertility scenarios, education, and labor force participation. These scenarios include the medium, high, and low fertility variants of the United Nations World Population Prospects 2015 Revision. The scenarios related to education include scenarios where educational attainment rates remain at current levels, while in another they accelerate. In these scenarios, changes in attainment rates have an endogenous impact on labor force participation rates as well – higher attainment rates imply that children and youth remain out of the labor force for longer, putting a dampening effect on labor supply. However, it is found that the boost to growth and poverty reduction due to improvements in educational attainment outweigh the drag that may arise from lower labor force participation rates, relative to the baseline.

World Bank Systematic Country Diagnostics – library of growth and poverty scenarios for 21 Sub-Saharan African countries

Following the methodology of Ahmed et al. (forthcoming), LINKAGE is used to examine the impact of changes in age-structure on economic outcomes in 21 Sub-Saharan African economies under the four alternative fertility scenarios. These scenarios include the medium, high, low, and constant fertility variants of the United Nations World Population Prospects 2015 Revision. A tool was developed for Health Nutrition and Population Global Practice colleagues to be able to pull simulation results directly and for up to four pre-formatted graphs for instant use. The model results and tool has already been used in Systematic Country Diagnostics (SCDs) for Mozambique, Malawi, Tanzania, and Uganda, and is planned to be used for two more SCDs in the next fiscal year.

World Bank (forthcoming) Malawi: Poverty Assessment Report. Washington, DC: World Bank

The approach of Ahmed et al. (forthcoming) is used to examine the impact of changes in age-structure on growth and poverty reduction in Malawi under the four alternative fertility scenarios. These scenarios include the medium, high, low, and constant fertility variants of the United Nations World Population Prospects 2015 Revision.

China's slowdown and rebalancing: potential growth and poverty impacts on Sub-Saharan Africa , Policy Research Working Paper No. 7666

Csilla Lakatos, Maryla Maliszewska, Israel Osorio-Rodarte, Delfin Go, May 2016

This paper explores the economic impacts of two related tracks of China's expected transformation—economic slowdown and rebalancing away from investment toward consumption—and estimates the spillovers This paper explores the economic impacts of two related tracks of China's expected transformation—economic slowdown and rebalancing away from investment toward consumption—and estimates the spillovers for the rest of the world, with a special focus on Sub-Saharan African countries. The paper finds that an average annual slowdown of gross domestic product in China of 1 percent over 2016–30 is expected to result in a decline of gross domestic product in Sub-Saharan Africa by 1.1 percent and globally by 0.6 percent relative to the past trends scenario by 2030. However, if China's transformation also entails substantial rebalancing, the negative income effects of the economic slowdown could be offset by the positive changes brought along by rebalancing through higher overall imports by China and positive terms of trade effects for its trading partners. If global supply responds positively to the shifts in relative prices and the new sources of consumer demand from China, a substantial rebalancing in China could have an overall favorable impact on the global economy. Economic growth could turn positive and higher on average, by 6 percent in Sub-Saharan Africa and 5.5 percent globally, as compared with the past trends scenario. Finally, rebalancing reduces the prevalence of poverty in Sub-Saharan Africa compared with the isolated negative effects of China's slowdown, which slightly increase the incidence of poverty. Overall, China's slowdown and rebalancing combined are estimated to increase gross domestic product in Sub-Saharan Africa by 4.7 percent by 2030 and reduce poverty, but the extent of this varies by country

Poverty and shared prosperity implications of deep integration in Eastern and Southern Africa Policy Research Working Paper No. 7660

Edward J. Balistreri, Maryla Maliszewska, Israel Osorio-Rodarte, David G. Tarr and Hidemichi Yonezawa. May 2016

Evidence indicates that trade costs are a much more substantial barrier to trade than tariffs are, especially in Sub-Saharan Africa. This paper decomposes trade costs into: (i) trade facilitation, (ii) non-tariff Evidence indicates that trade costs are a much more substantial barrier to trade than tariffs are, especially in Sub-Saharan Africa. This paper decomposes trade costs into: (i) trade facilitation, (ii) non-tariff barriers, and (iii) the costs of business services. The paper assesses the poverty and shared prosperity impacts of deep integration to reduce these three types of trade costs in: (i) the East African Customs Union–Common Market of East and Southern Africa–South African Development Community "Tripartite" Free Trade Area; (ii) within the East African Customs Union; and (iii) unilaterally by the East African Customs Union. The analysis employs an innovative, multi-region computable general equilibrium model to estimate the changes in the macroeconomic variables that impact poverty and shared prosperity. The model estimates are used in the Global Income Distribution Dynamics microsimulation model to obtain assessments of the changes in the poverty headcount and shared prosperity for each of the simulations for the six African regions or countries. The paper finds that these reforms are pro-poor. There are significant reductions in the poverty headcount and the percentage of the population living in poverty for all six of the African regions from deep integration in the Tripartite Free Trade Area or comparable unilateral reforms by the East African Customs Union. Further, the incomes of the bottom 40 percent of the populations noticeably increase in all countries or regions that are engaged in the trade reforms. The reason for the poor share in prosperity is the fact that the reforms increase unskilled wages faster than the rewards of other factors of production, as the reforms tend to favor agriculture. Despite the uniform increases in income for the poorest 40 percent, there are some cases where the share of income captured by the poorest 40 percent of the population decreases. The estimated gains vary considerably across countries and reforms. Thus, countries would have an interest in negotiating for different reforms in different agreements.

Cashing in the demographic dividend (DECPG and GTCTC)

M. Maliszewska, S. A. Ahmed, M. Cruz and L.A. Winters (forthcoming and being presented at Global Economic Analysis Conference 2016).

This paper analyzes the effect of demographic change across countries in different stages of demographic transition, by taking into consideration two key channels of market integration, trade and migration across the world. While approximately half of the global population is currently living in countries that are quickly aging with a shrinking share of working age population, the other half still live in countries foreseeing an opportunity of realizing the first demographic dividend, with an increase share of working age population. This asymmetric stage in demographic transition across countries will alter both the relative sizes and the comparative advantages of countries in the global marketplace.

GTCTC (Trade and Competition)

Impact of the Trans-Pacific Partnership on Developing countries.

T&C GP is working on estimating the impacts of the TPP on growth, trade and poverty on a number of developing countries using GTAP9a database and Linkage model (forthcoming 2016).

The unit has developed two databases based on the underlying IO tables of GTAP: Export of Value Added (EVA) Database and Labor Content of Exports (LACEX) Database. Both databases are available for download publically on the World Bank's website (Data Catalogue). EVA is available on WITS and LACEX is soon to be available on WITS.

The Labor Content of Exports Database

Cali et al. (2016). World Bank Policy Research Working Paper No. 7615. World Bank, Washington, DC).

The EVA Database provides information on the domestic value-added content of gross output and exports for 118 countries across 27 sectors of the economy, including 9 commercial services

sectors, 3 primary sectors and 14 manufacturing sectors, spanning intermittent years between 1997 and 2011. The LACEX database measures instead the domestic contribution of labor to a given country's gross exports, measured as employees' compensation / total wages (LACEX) as well as the number of jobs by matching the GTAP data to ILO employment data (JOCEX). It also uses gross output in place of exports to construct the labor value added and jobs content of domestic production. The measure of labor value added is further split between skilled and unskilled workers.
We have used both databases in country work, as well as working papers / book chapters / etc.

MNACE (Middle East North Africa Chief Economist Office)

Published the Syria war paper in the World Economy (early view available on Wiley):

Ianchovichina, Elena and Ivanic, Maros (2016) "Economic Effects of the Syrian War and the Spread of the Islamic State on the Levant," *The World Economy* (forthcoming).
http://onlinelibrary.wiley.com/doi/10.1111/twec.12400/abstract
Published a synthesis of the Syria war paper in Research Digest. The invitation came in because the Working Paper was the 3rd most downloaded World Bank Policy Research Working Paper in 2015.
"Economic Effects of the Syrian War and the Spread of ISIS," by Elena Ianchovichina and Maros Ivanic, Research Digest 10 (2), Winter 2016, World Bank.
http://www-wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/2016/03/01/090224b0841c549b/2_0/Rendered/PDF/Research0diges0tter0Vol001000No0020.pdf

Produced a paper on the global effects of lifting Iran's economic restrictions.

Ianchovichina, Elena, Devarajan, Shantayanan, and Lakatos, Csilla (2016) "Lifting Economic Sanctions on Iran: Global Effects and Strategic Responses," Policy Research Working Paper No. 7549, World Bank.

"Iran's oil is for sale: Who benefits, who loses?" on Al Jazeera with Devarajan, February 2016.

Presented the Iran paper at a full-day seminar: Oil roundtable at the Federal Reserve Board, DC (2016) and a Seminar at US Geological Survey, Reston VA (2016).

GMF ECA (Finance and Markets Global Practice)

Economic and fiscal effects of the proposed changes in energy taxation on Poland and other EU regions through 2030. Results based on the PLACE global CGE model, Center for Climate Policy Analysis, Warsaw, January 2015, not published yet
As part of its efforts to tackle climate change, in early 2012 the European Commission proposed changes in the taxation of energy use in sectors whose emissions are not regulated through the EU emissions trading system (ETS). They are usually referred to as the non-ETS sectors and cover emissions mainly from transport, agriculture, services, light industry, and households. The proposed new minimum levels of excise energy taxes were to be phased in gradually between 2016 and late 2020s, and were aimed at improving the consistency of tax treatment of energy source, eliminating double taxation, and aligning taxation of renewables. Because EU countries vary in their energy mix, and Poland derives a significant share of final energy from coal, it was expected that the proposed increased excise on coal might create a substantial burden for non-

ETS sectors in Poland. Also, the excise rate on oil products was to increase in Poland more significantly than the EU average. The analysis of energy taxation reform is based on the PLACE model, a multi-sector, computable general equilibrium model multi-region, multi-sector CGE model PLACE, based on GTAP8.1 global input-output tables, with most of the EU countries represented individually.

Sharing the burden of the EU climate and energy policy 2030: an economic impact assessment for the EU Member States. Results based on the PLACE model (Version 2.0), Center for Climate Policy Analysis, Warsaw, February 2015, not published yet

The European Commission's Impact Assessment of the 2030 climate and energy policy framework of January 2014 was based on the principle of cost-effectiveness. Almost immediately, policy discussions were supplemented with equity or solidarity considerations. This report discusses economic effects of 'extreme' scenarios which follow the principles of cost-effectiveness or equity and a potential trade-off between them. The main message is that economic efficiency can be a servant to equity and the lower the overall cost, the easier the resolution of thorny, normative equity issues. There are various criteria which can be applied at the operational level in order to determine an equitable distribution of emission mitigation costs among EU countries for 2030. These criteria can be separated into ex ante and ex-post. If applying ex ante criteria, then the welfare costs of mitigation are distributed in proportion to historical emissions, to population, or in inversely to GDP per capita. By comparison, cost allocation based on ex-post criteria needs to be based on a model simulation of the welfare impact of climate policy in the future, and the burden-sharing across countries is then driven by the normative choice of the social welfare function, including assumptions on the degree of inequality aversion, focusing on the well-being of the poorest countries. The economic impacts of alternative burden-sharing scenarios were assessed based on an extended version of the multi-sector global CGE model, PLACE, multi-region, multi-sector CGE model PLACE, based on GTAP8.1 global input-output tables, in which most of the EU countries are represented individually.

Low Oil Prices: Long-Term Economic Effects for the EU and other Global Regions based on the Computable General Equilibrium PLACE Model

Jakub Boratyński and Leszek Kąsek , Forthcoming MFM discussion paper

Oil prices on global markets have plunged from US$115 per barrel in mid-June of 2014 to US$48 at end-January 2015, while other fuel prices have continued the slow downward trend of recent years. The rapid decline in oil prices by about 60 percent was accompanied by U.S. dollar appreciation against the major global currencies (except the Swiss franc), partly offsetting the oil price decline measured in currencies other than the dollar. Oil prices that remain low over the long-term would give a positive boost to the global economy, but the effects will vary across countries. While net oil (fossil fuel) importers are expected to win (Europe, Japan, China, India), net oil exporters (OPEC countries, EFTA, Russia, Canada) are set to lose. However, in the EU, with carbon emission constraints in place, the possible benefits for oil users will be restricted because of climate regulations. This paper quantifies the economic effects of lower fossil fuel prices in the 2020 time horizon, modeled as a supply shock, and emphasizes their interaction with EU climate policy. The impact assessment of the oil price shock was conducted using a multi-county, multi-sector computable general equilibrium (CGE) model, PLACE, maintained by the Center for Climate Policy Analysis (CCPA). The model is based on GTAP8.1 database as primary source of information.

GMF MENA (Finance and Markets Global Practice)

Suriname

For the “Natural Resource Management In The Caribbean” project we relied extensively on GTAP data base to build a SAM for Suriname. This project uses a computable general equilibrium model to assess the macroeconomic implications of different options for creating fiscal space and public expenditure rules for a mineral-rich developing country, using the example of Suriname.

Haiti and the Dominican Republic

For the “ Migration, Remittances and Development on Quisqueya Island” project, we are using the GTAP data base to update the DR SAM and create a SAM for Haiti. The study aims to analyze the impact of bilateral migration and remittance flows on both the Dominican and Haitian economies, including: (i) the possibility that migrants from Haiti displace Dominican native workers or put downward pressure on wages; (ii) the potential burden on government revenues in the Dominican Republic because Haitian migrants tend to work in the informal sector and may not pay income tax, while they use free public resources, such as health and education services; (iii) the potential for remittances to Haiti to put pressure to the exchange rate (via a Dutch disease effect) and to reduce the incentives for the Haitian residents to work; and (iv) the impact of the remittance from the DR on growth and poverty reduction in Haiti. Our empirical analysis relies on two complementary approaches: i) First, a simple micro incidence analysis based on labor force surveys and expenditure surveys to assess the impact of migration on labor market, and welfare; and ii) a two-country Computable general equilibrium (CGE) model allowing to assess the impact on growth and macro indicators.

Nepal

We used a GTAP SAM to build a CGE model assessing the impact of the trade blockade of Nepal by India. The trade blockage simulation was performed by increasing the transaction cost for both import and exports. The transaction cost is modelled as traditional “Iceberg effect”. The simulation consisted therefore to calibrate the level of iceberg transaction cost that would generate 85 percent reduction in total trade during three months.

Qatar and Saudi Arabia

We used GTAP SAMs to build CGE models for Qatar and Saudi Arabia. The models allowed to assess the macroeconomic as well as the distributional effects of policy measures in the following areas: Tax reform (removal of subsidies, and introduction of VAT); declining price of international oil price; growth strategies scenarios; and migration reforms.

China

We used GTAP SAM to build CGE models for China. we used GTAP SAM (from 2011) to calibrate a China CGE model allowing to assess the likely consequences of the following measures focusing on macroeconomic as well as sectoral aspects: Rebalancing Growth (Increased consumption and declining saving, Redistribute more dividend to household vs. investing in firms); Tax reform (Subsidy, VAT); Effects of RMB appreciation; Aging of population; and Evaluate alternative growth strategies (Infrastructure spending vs. Research & Development- TFP spending).

GENDR (Environment and Natural Resources Global Practice)

Land use and economy-wide impacts of improving water use efficiency in South Asia

Taheripour F., Hertel T. and S. Sahin (2016), (#5210) paper was accepted for presentation at the 19th Annual Conference on Global Economic Analysis. The Bio-W-Gtap dataset was extended to cover 13 river basins in South Asia and updated to 2011. Model simulations refer to economy-wide impact of improving water use efficiency in agricultural and non-agricultural sectors.

Economic Opportunities for Jordanians and Syrian Refugees: A CGE analysis

Sahin S. and M. Tsigas (2016) “” was developed for the World Bank “Program for Results” intervention in Jordan. Model simulations estimate the economic benefits proposed by the World Bank program for Jordan on (i) EU abolishing trade barriers with Jordan; (ii) ROO reforms; (iii) improved logistics and trade facilitation in Jordan; and (iv)reduced domestic transport costs that of increase EU demand for Jordanian exports, (v) Investment Promotion through SEZs, and (vi) work permits for Syrian refugees.

Training activities were offered on Gtap related work developed in the last two years: (i) Sava River Basin Commission members on “Economic Impact of Climate Change in the Sava River Basin”, and (ii) Bangladesh Electricity Regulation Company technical staff on “Economy-wide Impact of Removal of Electricity Subsidies”.