Growth dynamics and development : essays in applied econometrics and political economy

Addendum on valorization

In accordance with article 23.5 of the "Regulation governing the attainment of doctoral degrees at Maastricht University" decreed by resolution of the Board of Deans, dated 3 July 2013, an addendum must be added about valorization.

Testament to the social relevance of this research is the fact that this doctoral dissertation has been funded by the Agence Française de Développement (AFD, the French development agency), within a larger multi-year research project on 'Institutions and Long-term Growth'. The project originated as an attempt to understand, both theoretically and empirically, the conceptual and econometric relationships between institutions and long-term growth. The French development agency was particularly interested in better understanding the institutional determinants of long-term economic, social, and political trajectories.

The five studies presented in this doctoral dissertation contribute to advance our understanding of each of these three themes. Their social and economic implications are of considerable importance for the welfare of nations and the welfare of people. However, not all of these implications can be easily translated into policy prescriptions.

The first part of the thesis, on the political economics of crises, is concerned with the fundamental question of how political institutions affect economic crises. The relevance of such a question can hardly be understated at a time when much of the developed world is still dealing with the consequences of the Great Depression and parts of the developing world are experiencing economic uncertainty due to political upheaval, such as the Arab spring or other political crises. Development aid today, too, has shifted away from purely economic investments towards supporting institutions, improved governance, capability building and civil society. Aid investments in the productive sector (agriculture, industry, tourism, banking, etc.), for example, have decreased from 36.6% of total bilateral aid in 1967 to 13.4% 2012, while the relative share of aid supporting the social infrastructure (education, health, government, etc.) has increased by 23.3 percentage points over the same period (from 8.3% to 31.6%).[1]

The overarching insight from the first part of the dissertation is that well-developed checks and balances (constraints) on the executive help to avert long and deep crises, even in the face of ethnic and political heterogeneity. Apart from this general finding, this part contains several insights for policy makers that are worth highlighting:

- Negative regime changes have the single largest effect on the probability of falling into a stagnation spell. Contrary to the widespread notion of the benefits of a "strong ruler", institutional shocks involving an increase in executive power and reduction of political competition are not necessarily beneficial to growth, even in the short run.

[1] Table 14.6 from Adam Szirmai, www.dynamicsofdevelopment.com, 2015.

- Open economies with an undervalued exchange rate seem to run a lower risk of experiencing a stagnation episode. This finding has direct implications for policy makers in central banks and those in the government engaged in trade policy.

- Severe downward volatility occurs often and has significant welfare implications for low income countries. Stronger constraints on the executive shorten the duration of declines, while greater ethnic divisions prolong the duration. It is important for the governments of developing countries to recognize where they are on this continuum, so as to appropriately manage economic crises.

- Ethnic diversity is not necessarily a problem. Political institutions can be designed to contain the adversarial element of ethnic heterogeneity, namely institutions that constrain the power of ruling elites to expropriate others. While the precise nature of these institutions requires further research, this finding is important for countries undergoing, or considering, constitutional reforms and complements a larger literature on the economic effects of political constitutions.

The second part of the thesis, on the speed of poverty reduction, is concerned with how poverty rates react to changes in average income and changes in income inequality. Even though past progress in the quest to reduce global poverty has been substantial – the proportion of the global population living on less than $1.25 a day declined from about 52% in 1981 to about 20% in 2010 – there are substantial challenges ahead. Research in this field is of obvious social importance, as entire agencies such as the World Bank have been designed around the sole mandate of promoting long-term economic development and poverty reduction. Recently, the World Bank even ambitiously redefined its own mission as "ending extreme poverty within a generation and promoting shared prosperity".

A principal result from the second part of the dissertation is that the past will not be a good guide for the future, at least when it comes to the pace of poverty reduction. This occurs for three reasons which are detailed below. Each of these three points has significant implications for policy makers and the larger development community.

- The geography of world poverty is changing rapidly. While China and India have contributed significantly to poverty reduction at the $1.25 a day poverty line in the past, their contribution will rapidly decrease in the coming decades. The relative share of the global poor residing in Sub-Saharan Africa and South Asia will rise. Even though per capita consumption growth has accelerated in Sub-Saharan Africa since about 2000, it has lagged far behind that of other developing countries, trailing the growth rate of the rest by about 2.5 percentage points per annum. This highlights the importance of developing sustained sources of economic growth on the subcontinent, such as further improving agricultural productivity, so as to free up workers for the industrial or service sector.

- Within-country inequality (as measured by the Gini coefficient) has been more or less constant in the developing world. The research presented here shows that reductions in inequality can have potentially large effects on the poverty headcount ratio, especially when viewed in terms of percentage point changes in poverty rates. Nevertheless, we have seen few examples of countries that have reduced poverty and inequality simultaneously, while there are about as many examples of countries, where the distribution was becoming more unequal over time. This finding stands in sharp contrast to the development community's rhetoric of 'pro-poor growth', or, more recently, 'shared prosperity'. The evidence presented here suggests that both have been the exception rather than the rule.

- Extreme poverty is not likely to end by 2030. The World Bank's target can only be reached if we make the unrealistic assumption of equally rapid growth in all developing countries. Instead, the projections show that the global rate of poverty reduction at \$1.25 a day will slow down markedly. Moreover, in absolute terms, the number of poor people in Sub-Saharan Africa is even likely to rise due to unabated population growth. On the other hand, at \$2 a day, remarkable gains are possible if the post-2000 growth trends continue. An optimistic estimate suggests that the \$2 a day poverty rate may fall below 20% by 2030 (down from about 40% in 2010), implying one billion fewer poor people than in 2010. Improvements in distribution are much needed to counteract unfavorable trends and ensure continued progress.

Chapter 6 of this dissertation then distilled these findings into a recommendation to the UN's high-level panel on the Sustainable Development Goals (SDGs). The chapter proposes two new goals, namely to "reduce the proportion of the population living below \$1.25 to 8% by 2030 and reduce the proportion of the population living below \$2 a day to 18% by 2030."

Last but not least, the work on this dissertation resulted in several ancillary outputs, in particular software components for estimating econometric models that have previously not been implemented. Some programs are add-ons to the commercial software Stata®, but the source code is publicly available at the author's website and subject to open source licensing. Other programs have been written for the open source software R. Additional programs and data sets will be made available once the results are published (either on the author's website or as part of the open data initiatives of academic journals). Making the code and data public serves to spread the use of these techniques and uphold the standards of reproducible research.

A core target group of this research consists of policy makers in international agencies (UN, World Bank, IMF, European Commission, regional investment banks, etc.). Other target groups of this research are national aid agencies (e.g. DFID, GIZ), central banks, national governments and statistical offices.

The French development agency played a key role in disseminating the work done within this project to other policy institutions. Several works have been reprinted as AFD working papers and/or have been summarized in policy briefs. Following a political economy workshop in Dresden, Chapter 3 has been released as CESifo working paper (one of the largest economic research networks in the world with a wide readership). All research outputs were presented at annual workshops at the AFD, several academic conferences, and policy institutions, such as the World Bank and the Center for Global Development.

The policy-oriented results from Chapter 6 are part of a joint research project funded by the Agence Française de Développement (AFD), the Institute for Development Studies (IDS) and the Japanese Development Cooperation (JICA). The chapter has been published in a book called "Growth is dead, long live growth: The quality of economic growth and why it matters" edited by Lawrence Haddad (IDS), Hiroshi Kato (JICA) and Nicolas Meisel (AFD). The results of this research project have been publicly presented to policy makers on January 26th 2015 in a high-level panel together with the respective directors of these institutions. The project was subsequently covered in the international media, such as the website of the Guardian.

Furthermore, an extended version of the literature review that informed the discussion in the introduction was commissioned by the UNICEF Innocenti Research Centre in Florence (Italy) and presented there in 2011. A follow-up project to the second part of this dissertation on "Inequality in Sub-Saharan Africa" is being funded by DG EuropeAid of the European Commission.

The research also targets the wider academic community as well as the readership of journals and blogs (such as the UNU-MERIT blog). The output of two papers was discussed in a short interview, available on YouTube, as part of the dissemination efforts.

All research in this dissertation is to be published in peer-reviewed and internationally acclaimed journals. As a first step in this direction, Chapter 2 is forthcoming in *Macroeconomic Dynamics* and the remaining chapters are currently under review.

Given the nature of this dissertation, it contains no proposals for commercial products or commercially exploitable activities, such as patents or services, and no innovation regarding existing products, services, processes, activities and commercial activities. Therefore, the dissertation contains no proposals for exploiting market opportunities in the future.