A macroeconomic vulnerability index for developing countries (MEVI)

Abstract

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Recent evidence indicates that financial and economic shocks are not a rare occurrence but are increasingly becoming a systemic feature of the global economy. The increased frequency of such crises is now the 'new norm' that the international development agenda will need to adapt to.

Literature about macroeconomic vulnerability is divided into two main strands of research: early warning system and exposure to exogenous shocks. The first strand of research refer to IMF and World Bank in particular and is based on the *ex-ante* risk assessment; special focus on the endogenous factors that can increase the risk of crisis. The second strand of research refer to United Nations and Commonwealth Secretariat, and focuses on *ex-post* evaluation of aspects that amplified or reduced the negative impact of exogenous shocks, without focusing on the probability that a negative shock occurs.

Both groups of measures fail in capturing the system effect, the complexity deriving from the interaction among all the sources of vulnerability and resilience.

The present work aims at providing an innovative way of thinking and measuring macroeconomic vulnerability. Vulnerability is the status that results from the complex interaction of factors that increase the exposure to exogenous shocks, and factors that increase the coping capacities.

We use multilevel PLSPM structural equation modelling to construct a systemic model that allows us to assess macroeconomic vulnerability as a latent and abstract concept. Such methodology analyses the overall interactions among all the manifest variables, and gives a measure of the *actual* total vulnerability, considering both direct effect of every single explanatory variable and indirect effect, deriving from interactions among explanatory variables.

Comparing our results with the UN EVI we find that until we consider the direct effects only (MEVI_Dir), the EVI and the MEVI-Dir give similar results. However, once we consider the total effects (direct plus indirect) in the MEVI-Tot, results change; countries that got a high score of EVI (*i.e.* high level of vulnerability), get a low score of the MEVI-Tot (*i.e.* low level of vulnerability).

Correlation analysis with countries' GDP in the post-crisis period show that MEVI-Tot has a better capacity to identify countries that suffered from economic crisis.