FONDATION POUR LES ETUDES ET RECHERCHES SUR LE DEVELOPPEMENT INTERNATIONAL

A retrospective Economic Vulnerability Index: 2010 update

by
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Policy Brief / 17 (Eng)
March 2011

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Elle met en oeuvre avec l'Iddri l'Initiative pour le Développement et la Gouvernance Mondiale (IDGM).

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The economic vulnerability of a (poor) country is the risk of this country seeing its development hampered by natural and external shocks. It is detrimental to development because it durably lowers economic growth and poverty reduction. Vulnerability can be seen as the result of three components: (i) the size and frequency of the exogenous *shocks*, (ii) the *exposure* to shocks and (iii) the capacity to react to shocks, or the *resilience*. The resilience mainly depends on present policy, what is not the case of the two other components, which for these reasons can be considered as more structural. This *structural vulnerability* essentially results from the size of the shocks and the exposure to the shocks. Exogenous shocks are either natural (environmental or climatic disasters) or external (trade-related). Exposure to exogenous shocks is greater for small countries (particularly through a higher trade-to-GDP ratio), for countries specialized in primary goods and for remote countries.

The Economic Vulnerability Index (EVI) is a composite index set up and applied by the United Nations Committee for Development Policy since 2000 as a criterion for the identification of the Least-Developed Countries. It has been revised before the next triennial reviews of the LDCs list in 2003, 2006 and 2009, so the values of EVI are not comparable over time, even between 2006, where the major revision occurred, and 2009, where the index was very close to the 2006 one. A retrospective evaluation of EVI according to the last and present definition was then needed for research purposes. Thanks to the collaboration of the UN DESA, the Ferdi has calculated a retrospective EVI on a year to year basis. Data cover 128 developing countries over the 1975-2008 period. This retrospective EVI replaces the previous measurement presented on the Ferdi website (Guillaumont 2007) and used in following works (Guillaumont 2009a and 2009b).

The present EVI is a composite index calculated from seven component indices, of which three shock indices (instability of exports of goods and services, instability of agricultural production and a homeless due to natural disaster index) and four exposure indices (smallness of population size, remoteness from world markets, export concentration, and share of agriculture, forestry and fisheries in the GDP). An arithmetic averaging has been used for the sake of simplicity and transparency by the CDP and here. This gives equal weights to the exposure and shock sub-indices in the EVI, equal weights to size and other exposure

components in the exposure sub-index, and equal weights to external and natural shocks in the shocks sub-index [the exposure sub-index (a weight of 0.5 in the EVI) is composed of smallness of population size (0.25 in the EVI), remoteness (0.125), export concentration (0.0625), share of agriculture, forestry and fisheries (0.0625), and the shocks sub-index (0.5) is composed of instability of exports of goods and services (0.25), instability of agricultural production (0.125), homeless index (0.125)].

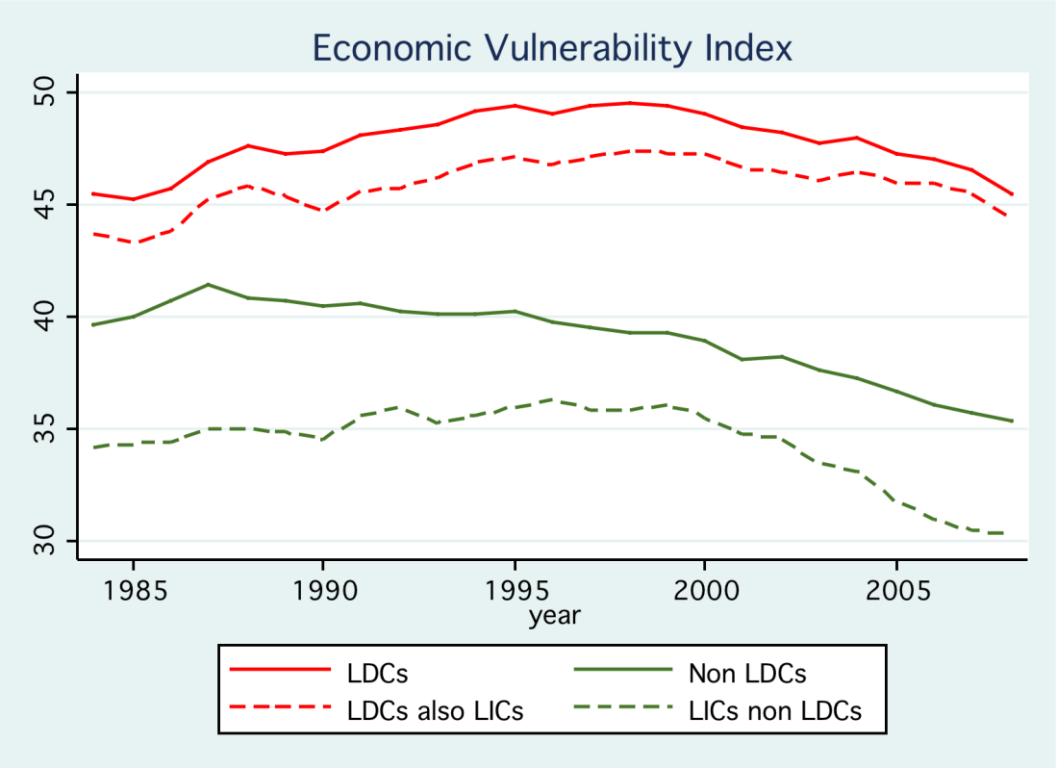
The source of data for population size and the share of agriculture, forestry, fisheries are the UN data base. Remoteness from world markets (adjusted for landlockness) has been provided by Ferdi. Export concentration coefficients are taken from UNCTAD Statistical Handbook (online database) and Homelessness data are from the Centre for Research on the Epidemiology of Disaster (CRED). Data has been interpolated when missing for a required year; for countries with no data, the level of the indicator has been assumed equal to that of the most relevant neighbour(s). The two instabilities (agricultural production and exports of goods and services) are measured on a rolling basis, as the average quadratic deviation from the last 15-year trend, and have also been calculated at Ferdi.

Due to similar definitions, results show a strong correlation between the EVI used by the CDP for the last (2009) review of the list of LDCs and the present retrospective index for the year 2006, which approximately corresponds to the data used for the 2009 review. For these recent years, as well as for all the previous years covered by the study, the least developed countries (LDCs) show a level of EVI higher than the other developing countries, and even higher than the other low income countries. In order to allow a relevant comparison of the long term evolution of EVI between groups of countries, the group of low income countries has been defined as including all the countries that are or have been low income during the period covered (retaining only the present low income would have restricted the group of non LDC low income to very few countries, making the long term comparison between LDCs and other low income countries not really relevant).

The retrospective measurement of EVI evidences a decreasing trend in the structural economic vulnerability for the whole set of developing countries, at least since 1995. But the evolution of the LDCs is significantly different from that of the other developing countries, as evidenced by the graph below. The LDCs EVI has been increasing from 1985 to the end of the nineties, then decreasing, with a level in 2008 similar to that of 1984-85, while EVI in the

other developing countries has been regularly decreasing from 1985. Considering only the Low Income Countries (LICs), the difference between the two groups appears even stronger: the EVI has less decreased in the second part of the period covered than it has increased in the first one for the LDCs, while for the LICs non LDCs it has sharply decreased, so that the gap between the two groups has become larger.

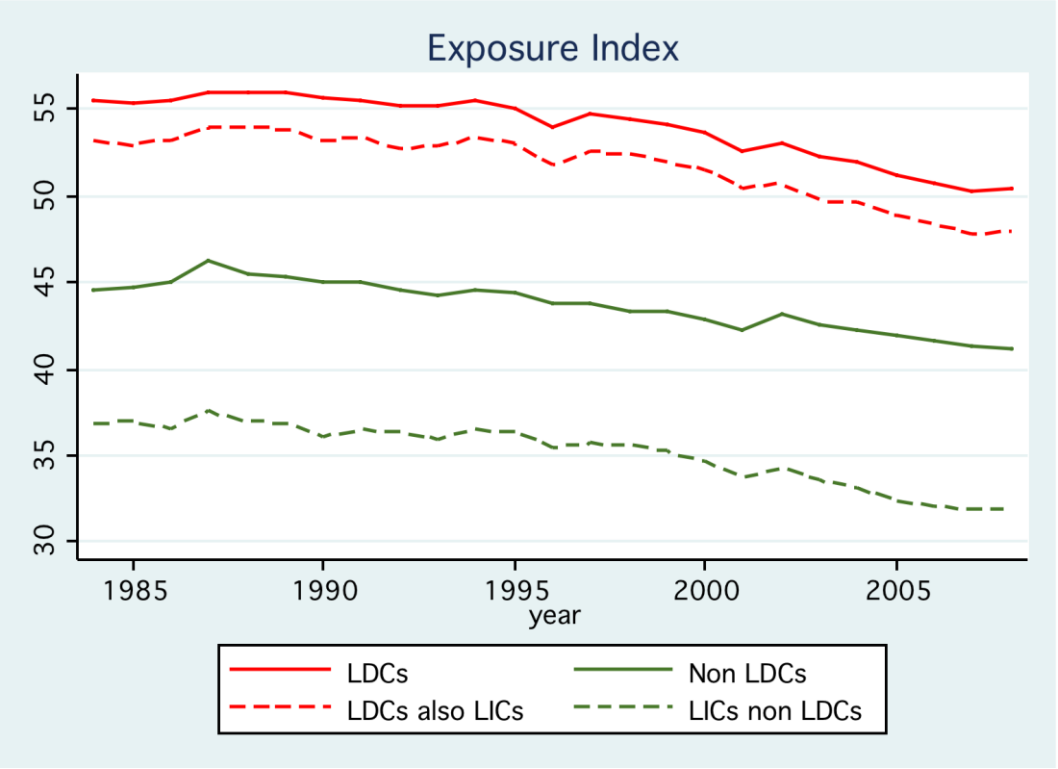
Graph 1. Evolution of the EVI, by group of countries, 1984-2008



The Graphs 2 and 3 show that this increasing gap is essentially due to the respective evolution of the shock components, the exposure indices evidencing a progressive decline in the various groups of countries.

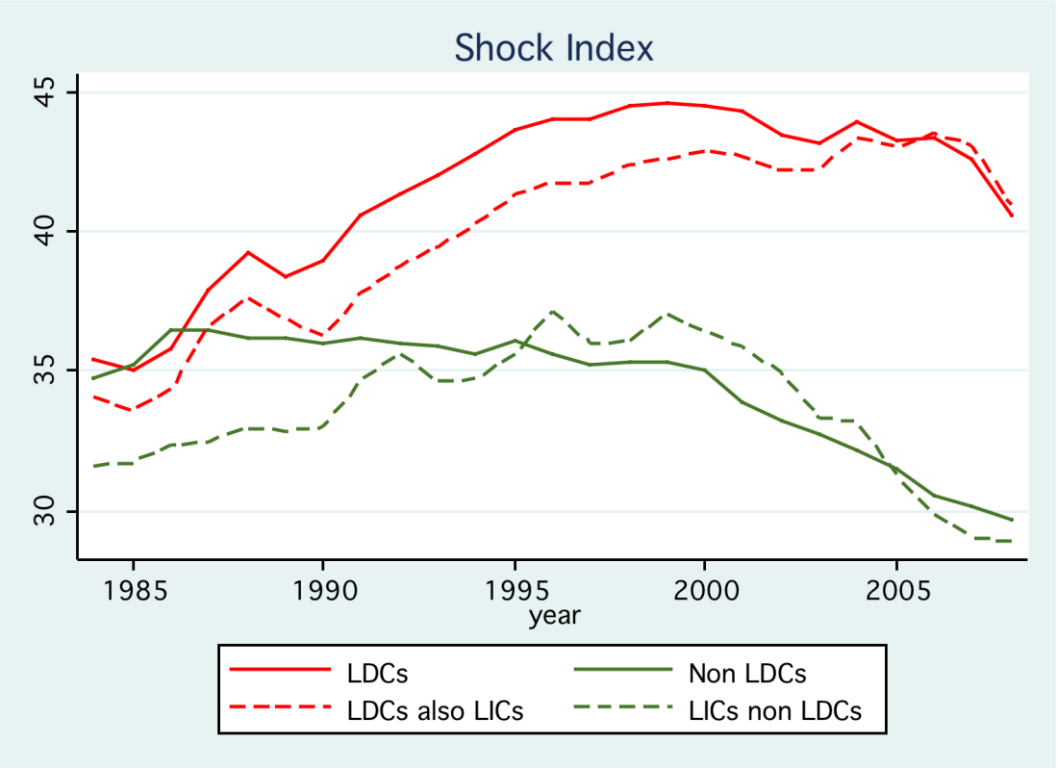
As for exposure, population size has been increasing in all groups, although a little faster in LDCs; the average export concentration has increased in LDCs, decreasing elsewhere; remoteness has not significantly changed on average and the share of agriculture, fishery and forestry has decreased by a similar number of points in LDCs and other developing countries.

Graph 2 Evolution of the exposure index, average by group of countries, 1984-2008



The increase in the shock index of LDCs, contrasting with its decline in other developing countries, results mainly from a more rapid increase of the homeless index and from a long term stagnation of the two instability indices, while the instability of exports strongly decreased in other developing countries and that of agricultural production slightly decreased.

Graph 3 Evolution of the shock index, average by group of countries, 1984-2008



The method and results have been presented in details in:

Cariolle J. (2011), « L'indice de vulnérabilité économique: séries rétrospectives de 1975 à 2008 », FERDI Document de Travail N°

Other references

Guillaumont P. (2009a), *Caught in the Trap: Identifying the Least Developed Countries*, Paris: Economica.
Guillaumont P. (2009b), An Economic Vulnerability Index: Its Design and Use for International Development Policy, *Oxford Development Studies*, 37:3, pp. 193-228.

In the case you use the data from the companion database: please quote the reference paper and "Data available on the Ferdi website: www.ferdi.fr"

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