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# The Economic Vulnerability of Small Island Developing States

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## Introduction

The economic vulnerability of small island states is well documented and stems from several inherent characteristics of such states, notably:

- their small size, which limits their ability to reap the benefits of economies of scale and constrains their production possibilities;
- the high degree of economic openness rendering them very susceptible to economic conditions in the rest of the world;
- their dependence on a very narrow range of exports;
- their excessive dependence on imported energy and imported raw materials;
- their insularity and remoteness, leading to high transport costs;
- their fragile ecosystem, a condition often exacerbated by proneness to natural disasters.

Literature on the Economic Vulnerability Index is listed separately at the end of this paper. Various attempts have been made to construct such an index since 1992.<sup>1</sup> Two recent studies, are those put forward by the Commonwealth Secretariat<sup>2</sup> and by Crowards<sup>3</sup>.

<sup>1</sup> The first work issued in the public domain was Briguglio, L. (1992) *Preliminary Study on the Construction of an Index for Ranking Countries according to their Economic Vulnerability* UNCTAD/LDC/Misc.4. A development on this work was produced Briguglio, L. (1993) *The Economic Vulnerabilities of Small Island Developing States*, background paper for the Caricom Regional Technical Meeting in preparation for the Global Conference on the Sustainable Development of Small Island Developing States, Port of Spain. Other works on the same subject, listed in the references section, are Briguglio (1995); (1997), Chander (1996), and Wells (1996); (1997).

<sup>2</sup> Atkins, J., Mazzi, S. and Easter, C., *A Commonwealth Vulnerability Index for Developing Countries*. Commonwealth Secretariat, January 2000. This study is based on *A Study on the Vulnerability of Developing and Island States: A Composite Index* by Jonathan Atkins, Sonia Mazzi and Carlen Ramlogan, issued by the Commonwealth Secretariat in August 1998.

<sup>3</sup> Crowards, Tom, *An Economic Vulnerability Index for Developing Countries, with Special Reference to the Caribbean: Alternative Methodologies and Provisional Results*, Caribbean Development Bank

## What the Index is Meant to Measure

In spite of these constraints, many small states register relatively high GNP per capita, when compared to other developing countries, giving the impression of economic strength, when in reality these economies tend to be very fragile and their success dependent to a very high degree on conditions outside their control. This fact prompted the present author to develop a vulnerability index, with the main objective of highlighting the reality that economic success of many small states often hides their underlying economic fragility.

The index developed by the present author was intended to measure the precariousness of states, arising from their economic exposure, lack protection and peripherality. The approach which was adopted by the present author in his several studies on the Vulnerability Index essentially consists of averaging a number of sub-indices that were considered as representing different facets of economic vulnerability. The sub-indices or components used for this purpose represent:

- Trade openness (export, imports or both as a ratio of GDP)
- Export concentration<sup>4</sup>
- Peripherality (transport and freight costs in relation to foreign trade)
- Energy dependence (imported energy as a ratio of energy consumed)
- Financial dependence (aid or international debt as a ratio of GDP)

There are two basic methods for computing the index. The method most commonly used is to obtain data for the components of the index and then use a “normalisation” involving restriction of the values of between 0 and 1, with each observation adjusted to take a value within this range.<sup>5</sup> The standardised variables for each country are then summed by assigning equal weights to each component.<sup>6</sup> Composite indices using this methodology were those by Briguglio (1992;1993;1995;1997) by Chander (1996) and John Wells (1996) show that small island states tend to be more vulnerable than larger territories.

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<sup>4</sup> Some authors utilised the export concentration index published in UNCTAD's *Handbook of International Trade and Development Statistics*. This index applies only to merchandise. Briguglio (1997) devised an index which also incorporated services.

<sup>5</sup> The formula used for this purpose is:  $V_{ij} = (X_{ij} - \text{Min } X_i) / (\text{Max } X_i - \text{Min } X_i)$

where:  $V_{ij}$  stands for the standardized observation associated with the  $i$ th component for country  $j$ .

$X_{ij}$  stands for the value of the  $i$ th component in the vulnerability index, for country  $j$ .

$\text{Max } X_i$  and  $\text{Min } X_i$  stand for the maximum and minimum value of the  $i$ th component for all countries in the index. Crowards refined the method to reduce the undue impact of outliers on the distribution of the observations, by assigning the value of 1 to the top decile of values in the observations of a particular variable and a value of zero to the bottom decile.

<sup>6</sup> Briguglio and Crowards experimented with different weights, but their preferred method was that involving equal weights.

The other method utilised for this purpose is that proposed by Atkins *et al.* (1998) and Wells (1997). They assumed that GDP volatility is the result of vulnerability and use the regression method to find the relation between GDP volatility and three explanatory variables representing features of vulnerability. They then used the coefficients on the explanatory variables as weights. This method does not require normalisation of the variables and the weights are derived on the basis of the regression method. However it has a number of methodological defects, which are too numerous to discuss here, with the most important one being that the authors had to create a dependent variable which was supposed to measure vulnerability, thereby begging the question.

### **Benefits of the Index**

There are at least two benefits that can be derived from the construction of a Composite Vulnerability Index, namely:

- a) the index can attract attention towards the issue of economic vulnerability of SIDS; and
- b) it presents a single-value measure of vulnerability based on meaningful criteria which can be considered by donor countries and organisations when taking decisions regarding the allocation of financial and technical assistance or for assigning special status to SIDS by international organisations such as the WTO.

### **How the Idea Evolved**

The construction of a vulnerability index occurred to the present author in 1989 following a conference on small states which he had convened in Malta in 1985. The Maltese Ministry for Foreign Affairs promoted the idea within the United Nations in 1990, when the idea was first formally proposed by the Maltese Ambassador to the United Nations, at the behest of the Islands and Small States Institute of the University of Malta, in June 26, 1990, during the New York meeting of Government Experts of Island Developing Countries and Donor Countries and Organisations, held under the auspices of UNCTAD. In his speech, the Maltese Ambassador proposed the construction of a Vulnerability Index, stating, amongst other things, that such an index "is important because it reiterates that the per capita GDP of Island Developing Countries is not by itself an adequate measurement of the level of development of island developing countries as it does not reflect the structural and institutional weaknesses and the several handicaps facing island developing countries."

The issue was again raised and discussed at some length during the International Conference on Islands and Small States, held in Malta on 23-25 May 1991, under the auspices of the University of Malta. In its final statement, the conference resolved "to construct a Vulnerability Index which could be used to

supplement GDP per capita index for the purpose of accounting for the special problems associated with small country size "and" to explore ways and means to have the United Nations and other international institutions consider such an index for assessing the need for aid to small countries."

In 1992 UNCTAD engaged the services of the present author to prepare a paper on the construction of a Vulnerability Index - a paper which was one of the main documents discussed during a meeting of a Group of Experts on Island Developing Countries, held in Geneva on 14-15 July 1992.

The need to construct a Vulnerability Index was also recognised during the Global Conference on the Sustainable Development of Small Island Developing States, held in Barbados in April/May 1994. The Programme of Action of this conference contained a section (paragraphs 113 and 114) recommending that a Vulnerability Index be constructed.

In December 1997, a meeting of experts on the vulnerability index met in New York under the auspices of the UN Department of Economic and Social Affairs, in line with the mandate contained in paragraph 113 and 114 of the Barbados Programme of Action. The present author was commissioned to write a report on economic vulnerability for consideration by the Group of experts. The Group concluded that "as a group SIDS are more vulnerable than other groups of developing countries".

The index as proposed by the present author contains, amongst its sub-indices, one which represents trade openness because this characteristic renders a country very vulnerable to forces outside its control. However, at the December 1997 UN meeting of experts, some participants suggested that the trade exposure sub-index should be abandoned.

The report of the December 97 expert group has been considered by the Commission for Sustainable Development at its sixth session, in April 1998, and by the Committee for Development Planning, at its 32<sup>nd</sup> session in May 1998. However, the UN has not as yet formally adopted a specific vulnerability index, and the General Assembly will probably decide that further studies will have to be undertaken before a specific index is adopted.

There is the worrying possibility that within the UN system the Vulnerability Index could be re-formulated to focus more on the characteristics of Least Developing Countries than on SIDS, by including in it sub-indices that characterise LDCs rather than SIDS. It may be argued that LDCs can make a good case to back their demand for special attention from the international community with reference to their low GNP per capita and their lack of diversification and other structural factors which inhibit development. SIDS on the other hand, should base their claim for special consideration on the basis of fragility and vulnerability, and this is what the vulnerability index should be used for.

### Three Major Dangers

The authorities of SIDS should guard against three major dangers which could lead to misuse of the Vulnerability Index.

*Political Motive.* The first is related to political motives and comes from those who are against treating SIDS in a special way. There is the possibility that some interests within the UN system intend to utilise the Vulnerability Index for objectives other than those in the interest of SIDS. It should be kept in mind that the idea of the Vulnerability Index developed during meetings associated with the special needs of SIDS. The authorities and representatives of SIDS should take steps to ensure that the index be used to sustain the case of SIDS, which is that the special conditions of these states should be given adequate consideration by donor countries and organisations.

*Inexperience.* The second danger stems from inexperience and is associated with those who do are not seasoned in the construction of indices. Inexperienced researchers in the field of index computation often unduly complicate matters, by for example, attempting to incorporate data which is very difficult to obtain or which requires considerable messaging. They also tend to show off by, for example, using complicated methods when these are not required. One often finds consultants with very limited knowledge of quantitative techniques, using computer regression packages to estimate relationship between variables, without adequately comprehending the meaning of the results. If the methodology for constructing the index becomes unduly complicated, or is subjected to suspect procedures, its operational usefulness could be lost. Simplicity and ease of comprehension should be major criteria associated with a composite index, especially in the case of indices intended for operational use, as is the case with the vulnerability Index.

*Ignorance.* The third danger, which is more pervasive, relates to ignorance of what the index is meant to measure. Quite often vulnerability was mixed up with poverty, and some expect the index to include variables representing poverty such as GNP per capita. As stated, the index is not intended to measure poverty or economic backwardness. Poor countries do not need a vulnerability index to prove that they are poor. They can make a good case to back their plight through a number of indices (such as GNP per capita) which are readily available.

### **SIDS can have a relatively high GNP per Capita and be Vulnerable**

As stated, a number of SIDS give the impression that they are economically strong because of their relatively high GNP per capita when compared to other developing countries. It should be kept in mind however that many SIDS have achieved this by means of such “props” as preferential access to markets of developed countries, leading to a GDP per capita levels higher than what one would expect from countries continually facing the constraints associated with small size and limited resources.

Such preferential access has had a beneficial effect on SIDS, but it does not negate the fact that such states tend to be economically vulnerable, and that such "props" need to remain in place and possibly strengthened. Trade preferences could be lost under the WTO regime for many SIDS, unless a strong case is made that SIDS merit special consideration in view of their economic vulnerability.

And the Vulnerability Index should prove useful in this regard!

## LITERATURE ON THE VULNERABILITY INDEX

- Atkins, J. , Mazzi, S. and Easter, C., (2000). *A Commonwealth Vulnerability Index for Developing Countries*. Commonwealth Secretariat..
- Atkins, J. , Mazzi, S. and Ramlogan, C. (1998). A Study on the Vulnerability of Developing and Island States: A Composite. Commonwealth Secretariat
- Briguglio, L. (1992). Preliminary Study on the Construction of an Index for Ranking Countries According to their Economic Vulnerability, UNCTAD/LDC/Misc.4 (1992).
- Briguglio, L. (1993). "The Economic Vulnerabilities of Small Island Developing States," study commissioned by CARICOM for the Regional Technical Meeting of the Global Conference on the Sustainable Development of Small Island Developing States, Port of Spain, Trinidad and Tobago, July 1993.
- Briguglio, L. (1995). "Small Island States and their Economic Vulnerabilities," *World Development*. Vol. 23, 1615-1632.
- Briguglio, L (1997). *Alternative Economic Vulnerability Indices for Developing Countries*. Report prepared for the Expert Group on Vulnerability Index. UN(DESA), 17-19 December 1997.
- Chander, R. (1996). Measurement of the Vulnerability of Small States. Washington. Commonwealth Secretariat (1997). *A Future for Small States - Overcoming Vulnerability*. London: Commonwealth Secretariat
- Crowards, T and Coulter, W. (1998). Economic Vulnerability in the Developing World with Special reference to the Caribbean. Caribbean Development Bank.
- Crowards, T. An Economic Vulnerability Index for Developing Countries, with Special Reference to the Caribbean: Alternative Methodologies and Provisional Results, Caribbean Development Bank March 1999. This is a draft for consultation, and expresses the views of the author but not necessary represent those of the Caribbean Development Bank.
- Easter, Christopher "Small States and Development: A Composite Index of Vulnerability" in *Small States: Economic Review and Basic Statistics*, Commonwealth Secretariat, December 1998.
- Pantin, D. (1997). *Alternative Ecological Vulnerability Indicators for Developing Countries with Special Reference to SIDS*. Report prepared for the Expert Group on Vulnerability Index. UN(DESA), 17-19 December 1997.
- United Nations - DPCSD (1997). Vulnerability Index (Revised Background Paper). SD-SIDS Unit.
- United Nations (1994). Report on the Global Conference on the Sustainable Development of Small Island Developing States, A/Conf.167/9.

United Nations (1997). *Report of the Secretary-General on the Development of a Vulnerability Index for Small Island Developing States* (Advance Unedited Version to be submitted to the Commission for Sustainable Development, Sixth Session, 20 April - 1 May 1998, and to the Committee for Development Planning, 32<sup>nd</sup> session, 4-8 May 1998)

UNCTAD (1997). *The Vulnerability of Small Island Developing States in the context of Globalisation: Common Issues and Remedies*. Report prepared for the Expert Group on Vulnerability Index. UN(DESA), 17-19 December 1997.

Wells, John (1996). *Composite Vulnerability Index: A Preliminary Report*. London: Commonwealth Secretariat

Wells, John (1997). *Composite Vulnerability Index: A Revised Report*. London: Commonwealth Secretariat.

