Abstract. This chapter deals mostly with the definition of terms regarding economic vulnerability and economic resilience so as to distinguish between those economic conditions that are responsive to policy measures and those that are not. The author argues that it would be useful conceptually and methodologically to confine the discussion on economic vulnerability of a country to inherent and permanent economic features which render that country exposed to damaging forces outside its control. In this sense, economic vulnerability would not be responsive to domestic policy measures. It follows that the components of the Vulnerability Index should measure inherent features only. The author further argues that the discussion on economic resilience should refer to policy-induced changes, which affect the country's ability to cope with or withstand its inherent vulnerability. The chapter also proposes the construction of an index of resilience to complement the vulnerability index, so as to assess the risk of a country being harmed by external shocks. The resilience index could also serve to assess the extent to which economically vulnerable countries, individually or as a group, are moving ahead or otherwise, in coping with or withstanding their economic vulnerability. A number of variables which could be used to construct a composite resilience index are proposed.

1. Background

Economic vulnerability of a particular country is usually associated with exposure to damaging external economic shocks.¹ Such exposure can be permanent (or quasi permanent), in the sense that it is associated with the inherent characteristics of the country. In this sense, vulnerability cannot be assumed to be responsive to policy measures. Alternatively economic vulnerability can be “self-inflicted”, in the sense that the country itself may, as a result of inappropriate

¹ Similar definitions of economic vulnerability were proposed by Briguglio (1995 and 1997), Crowards (2000), Atkins et al. (2000), and Guillaumont (Chapter 3, this volume).
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Macroeconomic policies, render itself vulnerable to external shocks. In the same manner, economic resilience can be inherent or "nurtured". Again here, inherent economic resilience is, by definition, not responsive to policy measures, whereas nurtured resilience would.

This chapter argues that it is conceptually and methodologically useful to distinguish between the inherent and the policy responsive aspects of vulnerability and resilience. It is proposed that the term "economic vulnerability" be confined to inherent features and the components of an index which purports to measure vulnerability across countries should therefore refer to inherent characteristics of a country which lead to the countries' exposure to external shocks. It is further proposed that the term "economic resilience" should be used to refer to conditions which are policy-responsive, affecting the country's ability or otherwise, to cope with or withstand its inherent vulnerability.

The chapter also proposes the construction of an index of economic resilience to complement the economic vulnerability index, so as to assess the risk of a country being harmed by external shocks. The resilience index could also serve to assess the extent to which countries, individually or as a group, are taking steps to cope with or withstand economic vulnerability. A number of variables that could be used to construct a composite resilience index are proposed.

The rest of the chapter is organised as follows. Section 2 deals with economic vulnerability and briefly describes the work on the economic vulnerability index carried out so far. Section 3 deals with economic resilience and proposes the construction of a resilience index. Section 4 examines the concept of risk in the context of vulnerability and resilience. Section 5 concludes the study.

2. Inherent Vulnerability

Recent works on the economic vulnerability index by the present author (see Briguglio, 1995; 1997 and Briguglio and Galea, 2003) assumes that economic vulnerability stems from a number of inherent economic features, including high degrees of:

- economic openness;
- export concentration;
- dependence on strategic imports.

Economic Openness. Economic openness can be measured as the ratio of international trade to GDP. A high degree of economic openness renders a country susceptible to external economic conditions. Economic
openness is to a large extent inherent, as it is conditioned by the size
of the domestic market in the case of exports, and by the availability
on natural resources, in the case of imports.\(^2\)

**Export Concentration.** This can be measured by the UNCTAD index of
merchandise trade. The present author devised an alternative index
which takes services into account (see Briguglio, 1997 and Briguglio
and Galea, 2003). Dependence on a narrow range of exports of goods
and services gives rise to risks associated with lack of diversification,
and therefore exacerbates vulnerability associated with economic
openness. Again this condition is inherent in the sense that it is
practically impossible for small countries to diversify their exports as
much as larger countries can, mostly due to the problem of indivisibility.

**Dependence on strategic imports.** This can be measured as the ratio
of energy imports or food imports to total imports or to GDP. Again,
this condition is inherent in that it is related to the natural
endowments of a country.

The vulnerability indices that utilise such variables\(^3\) generally come
to the conclusion that small states tend to be more vulnerable than
other groups of countries.\(^4\)

An alternative formulation of the vulnerability index is that proposed
by the Committee for Development Policy (of the UN ECOSOC), which
uses the index as one of the criteria for the identification of Least

\(^2\) Guillaumont (chapter 3, this volume) however argues that economic openness should
not feature in a vulnerability index because it is policy-induced. In empirical work on
the subject, including those carried out by the present author (see Briguglio, 1992), a
very high correlation between country size and economic openness is reported,
irrespective of the stages of development and of the economic policies or ideologies in
the countries concerned. This would seem to suggest that openness tends to be
inherently associated with country size.

\(^3\) Economic vulnerability indices using similar variables were compiled by the
Commonwealth Secretariat (see Atkins et al., 2000, and Crowards, 2000). These
variables are combined together in a composite index. In some studies, the summing
procedure involved a weighting scheme (see chapter 1 in this volume). Some studies
use additional variables. For example Briguglio (1995; 1997) also considered
peripherality (or insularity) as a vulnerability feature, proxied by transport costs, as a
component of the Economic Vulnerability Index (EVI), arguing that this exacerbates
problems associated with exposure to external shocks. The validity of using this
component has been the subject of debate (see Guillaumont, this volume, chapter 3).
An index of disaster proneness is used in some studies as an additional vulnerability
feature (see for example Briguglio (1995) and Atkins et al. (2000).

\(^4\) Such a conclusion was reached during a meeting of an Expert Group on Vulnerability
Index, organised by the United Nations Department of Economic and Social Affairs in
December 1997, See Report of the Meeting (para. 15a), which is accessible from: http://
Developing Countries (LDCs). The variables used in this index are (a) merchandise export concentration (b) instability of agricultural production (c) instability of exports of goods and services (d) share of manufacturing and modern services in GDP and (e) population size.

The CDP Vulnerability Index assigns importance to instability as an outcome of vulnerability. The variables “share of manufacturing and modern services in GDP” and “population size” are intended to measure a country’s structural fragility, affecting its ability to absorb external shocks.5

3. Economic Resilience

Economic resilience can be defined in many ways, but in this chapter the term is used to refer to the ability to recover from or adjust to the negative impacts of external economic shocks, and is therefore associated with the coping ability of an economically vulnerable country.

As already explained, economic resilience of a country may be inherent or nurtured. The inherent aspect of resilience may be considered as the obverse of inherent vulnerability, in the sense that inherently resilient countries should register low vulnerability scores on the index. Nurtured resilience, on the other hand, is that which can be developed and managed, and is therefore policy responsive. In this sense, a country can adopt resilience-building policies which enable it to cope with or mitigate the negative impacts associated with inherent vulnerability. Conversely, a country can adopt policies which exacerbate the negative impacts of inherent vulnerability.

Usefulness of Considering Resilience Building

The issue of resilience building is important for small states in view of the fact that such states tend to be inherently economically vulnerable, as already explained. In addition, the discussion on resilience sheds light as to why a number of vulnerable small states have managed to do well economically in spite of (and not because of) being highly exposed to external shocks. Briguglio (2002) has referred to this reality as the “Singapore paradox”. Consideration of resilience building also conveys the message that vulnerable states should not

5 The population size indicator is very problematic if the index is to be used in the context of small states, since it will bias the index in favour of such states, thereby begging the question as to whether small states are more vulnerable than larger ones. The CDP index however is likely to be reformed. See Guillaumont (chapter 3) and Encontre (chapter 4) in this volume.
be complacent in the face of their economic vulnerability, but could, and should, adopt policy measures to enable them to improve their ability to cope with external shocks.\footnote{It is sometimes argued that many small states have managed to attain relatively high GDP per capita due to the preferential trade arrangements that they enjoyed, and the incentive packages they were allowed to put in place to attract FDI. However, not all the small states that enjoyed such advantages managed to translate them into economic success. It appears that sound economic policies remain very important to enable a country to profitably exploit trade preferences and to attract FDI.}

Constructing an Economic Resilience Index

It would be useful to construct a resilience index to complement the vulnerability index, in order to assess the risk of a country being harmed by external shocks. Such an index could also help a particular country identify its weak points with regard to resilience building. The index could, furthermore, serve to highlight good practice and to set benchmarks for resilience building.

Given that economic resilience is multifaceted, an index that purports to measure it should be a composite one, with components capturing the various facets of resilience building. Good macroeconomic management, which is associated with stability, and sound competition policies, which serve to reduce rigidities and price distortions in the domestic are obvious candidates as components of a resilience index.

In addition, there are factors which though not purely economic, could also strengthen economic resilience.

An important element is good political governance, which conditions the overall running of the country. Another important requirement for resilience building is sound environmental management, which is essential for economic sustainability. Finally, resilience building should be based on social considerations, and for this reason a social cohesion indicator should feature in the index.

On the basis on these arguments, the a number variables could be proposed as components of a resilience index, as follow:

i. An index measuring good governance. This should cover factors such as political stability, rule of law, control of corruption, accountability, and regulatory quality and effectiveness on the lines proposed by Kaufmann et al. (2002).
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ii. *An index of macroeconomic stability.* This should cover inflation, exchange rate fluctuations, current account imbalances, public finance deficits and related variables.

iii. *An index of market reform policies.* This should relate to internal market competition and labour productivity.

iv. *An index of social cohesion policies.* The variables of interest in this regard should relate to income distribution, education attainment, crime rates and long-term unemployment.

v. *An index of environmental management.* Environmental management is likely to be difficult to quantify, but the index could be constructed by means of a number of seven point mapping scales relating to environmental legislation in place, its enforcement and its coverage on such matters as air quality, energy efficiency, waste management and use of natural resources.

The composite index should be suitable for cross-country comparisons. Typically, statistical information, especially with regard to environmental and social variables, tends to be rather poor for small developing countries and one can anticipate some difficulty in constructing the resilience index in this regard.

Selecting a weighting scheme is also likely to pose additional problems. One alternative is to assign equal weights to all components of the composite index. Alternatively, one may consider assigning more weight to the economic variables than to the other variables, given that the index is intended to measure economic resilience.

4. Measuring Risk Associated with Exposure

By distinguishing between inherent economic vulnerability and nurtured economic resilience, it is possible to create a methodological framework for assessing the risk of being affected by external shocks, as shown in Figure 1.

The figure shows that risk has two elements: (a) inherent conditions in the country that is exposed to exogenous shocks and (b) conditions which enable the country to absorb, cope with or bounce back from external shocks. The risk of being adversely affected by the shock is therefore the combination of the two elements. The negative sign in front of the resilience element indicates that the risk is reduced as resilience is enhanced.
Figure 1
Risk of being Adversely Affected by an External Shock

<table>
<thead>
<tr>
<th>Vulnerability</th>
<th>Resilience</th>
</tr>
</thead>
<tbody>
<tr>
<td>RISK of a country being adversely affected by an external shock</td>
<td>COPING ABILITY of the country—its ability to withstand or bounce back from the effect of the external shock</td>
</tr>
<tr>
<td>EXPOSURE of the country to the external shock arising from the country’s intrinsic features</td>
<td></td>
</tr>
<tr>
<td>INHERENT and PERMANENT Not subject to policy or governance:</td>
<td>NURTURED Subject to policy or governance:</td>
</tr>
<tr>
<td>• Economic openness</td>
<td>• Good governance</td>
</tr>
<tr>
<td>• Export concentration</td>
<td>• Macroeconomic stability</td>
</tr>
<tr>
<td>• Dependence on strategic imports</td>
<td>• Market reform</td>
</tr>
<tr>
<td></td>
<td>• Social cohesion</td>
</tr>
<tr>
<td></td>
<td>• Sound environmental management</td>
</tr>
</tbody>
</table>

Four Possible Scenarios

On the basis of the two elements of risk shown in Figure 1, we can consider four possible country scenarios with regard to inherent vulnerability and nurtured resilience as shown in Figure 2. The four scenarios are respectively labelled “best-case”, “worst-case”, “self-made”, and “prodigal son”.

Countries classified as “self-made” would be those that are highly inherently vulnerable but at the same time adopt appropriate policies to enable them to cope with or withstand their inherent vulnerability. They are “self-made” in the sense that they would have taken steps to make up for their handicaps. These countries remain inherently vulnerable, but their resilience enhancement policies reduce the risk associated with exposure to shocks.

Countries falling within the “prodigal son” scenario are those with a relatively low degree of inherent economic vulnerability, but which adopt policies which expose them to external shocks. The analogy with the prodigal son, is that though “born in a good family”, they “squander their riches”.

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Figure 2
Four Possible Scenarios

<table>
<thead>
<tr>
<th>Resilience policies adopted</th>
<th>Countries that adopt policies that build resilience against economic vulnerability</th>
<th>Countries that adopt policies that exacerbate their economic vulnerability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Countries with high inherent economic vulnerability</td>
<td>The “self-made” scenario</td>
<td>The “worst case” scenario</td>
</tr>
<tr>
<td>Countries with low inherent economic vulnerability</td>
<td>The “best-case” scenario</td>
<td>The “prodigal son” scenario</td>
</tr>
</tbody>
</table>

The “best-case” scenario applies to countries with a low degree of inherent vulnerability and which at the same time adopt resilience-building policies. These have the best of both worlds.

The “worst-case” scenario applies to countries that are inherently very vulnerable and adopt policies that exacerbate their inherent vulnerability.

Figure 3 reconsiders the four scenarios, using a Cartesian coordinate scheme, with four quadrants, with the vertical axis representing inherent economic vulnerability and the horizontal axis representing nurtured economic resilience, both measured by some index. The origin, 0, represents some point on the vulnerability index reflecting medium vulnerability and some point on the resilience index reflecting the divide between bad policy and good policy.

The letters A, B, C, D, E, F, G and H represent eight different countries. For example, point D represents a country with a low vulnerability score and a high resilience score, and therefore falls in the “best case” quadrant. Point A represents a country with high scores in terms of both vulnerability and resilience, landing it in the “self-made” quadrant. The worst situation pertains to point H, which refers to a country with a very high score in terms of vulnerability and very low score in terms of resilience. Point F is an example of a country with low vulnerability scores, but with the wrong policies, thereby being classified as a “prodigal son” case.
In each quadrant of Figure 3, two countries are represented. The position of each letter shows that one country is better off than the other. Thus in quadrant I, country A is better off than country B, in that, although the two countries are equally vulnerable, country A has a better resilience score. In this scheme the countries with the lowest risk of being adversely affected by an external shock are those in quadrant II. Small island states that adopt resilience-building policies would fall in quadrant I.

Therefore, once the vulnerability and the resilience indices are constructed, it will be possible to classify any country in one of the four quadrants.

This method of defining the risk of being adversely affected by an external shock has a number of advantages, including the following:

1. the vulnerability index would refer to permanent (or quasi permanent) features over which a country has practically no control, and therefore exposure to shocks cannot be attributed to bad economic governance. The index should not therefore change much over a period of time, say a decade. Countries scoring highly on the index cannot be accused of inflicting vulnerability on themselves and cannot be told that it serves them right;

2. the resilience index would refer to what a country is doing or has done to cope with (or exacerbate) its inherent vulnerability. This
index would therefore measure what countries are doing or have done to help themselves; and
3. the combination of the two indices would then indicate the extent to which a country risks being harmed by external shocks.

5. Concluding Considerations

Three major considerations emerge from this chapter.

Firstly, the finding that economically successful small island states, such as Singapore, Iceland, Malta and Cyprus, are also economically vulnerable, is only seemingly a contradiction. This reality can be explained by the analytical framework proposed in this chapter, namely that a country can adopt economic policies that offset its inherent economic vulnerability.

Secondly, building economic resilience to cope with and withstand economic vulnerability should take centre stage in sustainable development strategies of small states, which, as already explained, tend to be very economically vulnerable. However, capacity building for enhancing resilience involves overhead expenditures which tend to be very high per capita in small economies. The assistance of the international donor community to support small states in building capacity for resilience-building is therefore warranted.

Thirdly, it would be useful to construct a resilience index to complement the vulnerability index, in order to assess the risk of a country being affected by external shocks. The index would also be useful to analyse the extent to which economically vulnerable countries, individually or as a group, are moving ahead or otherwise, in coping with or withstanding economic vulnerability. In addition, the index could serve as an indicator of best practice for resilience building.

References


