PROFILING ECONOMIC VULNERABILITY AND RESILIENCE IN SMALL STATES: CONCEPTUAL UNDERPINNINGS

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1. Background

Small states[1] are economically vulnerable because of their inherent proneness to exogenous shocks over which they can exercise very little control, if any. Such shocks in the main emanate from the small states' structural openness to international trade, their high dependence on a narrow range of exports and their reliance on strategic imports, notably fuel and food (Briguglio, 1995; 2003 and Atkins et al., 2000). The high degree of fluctuations in GDP and in export earnings registered by many small states is considered as one of the manifestations of exposure to exogenous shocks.

In spite of this, there are a number of small states that have managed to generate a relatively high GDP per capita. This is ascribed to their economic resilience, which refers to the policy-induced ability of an economy to recover from or adjust to the negative impacts of adverse exogenous shocks

Briguglio et al. (2006) view economic resilience as depending upon adequate policy approaches in four principal areas namely macroeconomic stability, microeconomic market efficiency, good governance and social development.

The concept of policy-induced resilience is useful in understanding why small states often succeed economically. Some studies based on simple correlations between size and indicators of performance conclude that small size is advantageous. The argument put forward by Briguglio et al. (2006) is that small states succeed in spite of, and not because of small size, due to good economic governance which leads to resilience building.

Consideration of economic resilience building conveys the message that small vulnerable states should not 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 or bounce back from adverse shocks.

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[1] In this paper, the words "state" and "country" are used interchangeably. There is no generally agreed definition as to which variable should be used to measure the size of countries and as to what should be the cut-off point between a small country and other countries. Generally speaking, population is used as an indicator of size. The Commonwealth Secretariat and the World Bank consider states with a population not exceeding 1.5 million as being small states.

This paper is aimed at further developing the study of vulnerability and resilience of small states by proposing country-specific reviews through:

i.   an assessment of specific vulnerability issues affecting individual countries;
ii. an assessment of specific resilience strengths possessed by individual countries;
iii. prescriptions for policy interventions aimed at building specific resilience features in view of the vulnerabilities characterising individual countries.

Studies on vulnerability and resilience have so far focused on a cross-sectional analysis, based on desk research relating to published official data. The approach proposed in this study permits better and more timely policy formulation possibilities for individual countries through specific country profiles and a case-study approach, based on quantitative data complemented by qualitative assessments.

The paper is structured as follows. Section 2 presents a summary of the conceptual underpinnings involved in the measurement of economic vulnerability and resilience. The data and information template which is being proposed for the measurement of the economic vulnerability and resilience of specific countries is described in Section 3. This section also contains a discussion on the choice of specific variables within this context. Section 4 concludes the study.

2. The Measurement of Economic Vulnerability and Resilience

The Measurement of Economic Vulnerability

Small economies tend to face higher levels of risks to their economic growth and development engendered by their exposure to shocks and/or by their inherent characteristics. This phenomenon was studied through several approaches aimed at constructing vulnerability indices. These mainly focused on quantifying the special characteristics of small states using indicators such as economic openness, export concentration, dependence on imports of energy and peripherality. Cordina (2008) categorises the approaches to vulnerability measurement into those which focus on the *causes* of the phenomenon and those which attempt to measure vulnerability in terms of its *effects*, namely the variability of output and similar indicators.

The first vulnerability index, which focused on the causes of the phenomenon, was developed by Briguglio (1992; 1995) and was composed of three variables, namely exposure to foreign economic conditions, insularity and remoteness, and proneness to natural disasters. These variables were suitably normalized and averaged. It was hypothesised that the higher the incidence of these variables in a given country, the higher the degree of vulnerability in the same country, everything else, including GDP per capita, remaining constant. The hypothesis that Small Island Developing States (SIDS) tend to be more vulnerable than other countries was confirmed since in general SIDS registered higher vulnerability scores than other groups of countries.

Chander (1996) employed a methodology similar to that used by Briguglio (1992) with a number of technical refinements, and showed that in general, small states had larger vulnerability scores than larger countries. Chander (1996) emphasised the fact that

countries with a diversified export and production base were less vulnerable. Several important technical modifications to the original approach were effected in Briguglio (1995, 1997), including the omission of the natural disasters variableso as to enhance the focus on economic sources of vulnerability. The results did not alter the basic conclusions regarding the vulnerability of SIDS.

Crowards (2000) confirmed the results of previous studies through a methodology which was similar to earlier approaches, but introduced some technical improvements. Briguglio and Galea (2003) continued to refine the measurement of economic vulnerability by considering dependence on food imports and export concentration in services. On similar lines, Cordina and Farrugia (2005) argued that vulnerability ensues if a country is significantly exposed to trade with other countries which are themselves unstable, or in commodities with prices which are highly volatile.

Wells (1997) used a different approach by focusing on the effects of vulnerability, as manifested in income volatility and used regression analysis to identify the causes of vulnerability. He hypothesized that economic volatility, used as a proxy for economic vulnerability is related to three variables, namely export diversification, the resource gap in relation to GDP and the proportion of the population affected by natural disasters. This approach did not require the normalization of the variables, and the regression coefficients were taken as the weights of the variables. Output volatility was also used for the index developed by Atkins et al. (2000), who based their approach on Wells (1997) using three explanatory variables namely export dependency ratio, merchandise export diversification and vulnerability to natural disasters

The Committee for Development Policy (CDP) of the United Nations adopted a rather different approach in constructing an economic vulnerability index, which they utilized to assess graduation of countries out of the LDC status (United Nations, 2006). The index combines inherent features and manifestations of vulnerability relating to the following variables: population size, remoteness, merchandise export concentration, share of agriculture, forestry and fisheries in gross domestic product, homelessness owing to natural disasters, instability of agricultural production and instability of exports of goods and services.

Cordina (2008) used regression analysis to synthesise the conclusions of the various approaches towards measuring economic vulnerability. The study finds strong support for the hypothesis that vulnerability is higher for small countries, while the hypothesis that vulnerability is heightened for island states is also supported but somewhat less strongly. He argued that the variables which mostly capture inherent economic vulnerability are economic openness, export concentration and dependence on strategic imports.

Economic openness as measured by the ratio of international trade to GDP, proxies the extent of external shocks over which a country has no direct control. Economic openness is to a significant extent an inherent feature of an economy, conditioned mainly by the size of the country's domestic market and by the country's availability of resources which affects its ability to efficiently produce the range of goods and services required to

satisfy its aggregate demand. While it may be argued that openness to international trade may be influenced by policy and is therefore not a vulnerability issue (see Guillaumont, 2006), practical experience shows that trade policies tend to influence more the composition of a country's external trade flows rather than the degree of economic openness. Furthermore, while openness to international trade could be a source of development for a country, this does not detract from the fact that by participating more actively in international trade, a country would be exposing itself to a larger degree of shocks over which it has relatively little control.

Export concentration is relevant for vulnerability measurement because dependence on a narrow range of exports gives rise to risks associated with lack of diversification, and therefore exacerbates the vulnerability associated with economic openness. This condition is to a large extent the result of inherent features in the production base of an economy. Export concentration can be measured by the UNCTAD index of merchandise trade (UNCTAD, 2003: section 8). Briguglio (1997) and Briguglio and Galea (2003) devised an alternative index which also takes services into account.

Dependence on strategic imports is another facet of the exposure argument, focusing on shocks to the availability and costs of such imports. This variable can be measured as the ratio of the imports of energy, food or industrial supplies to total imports or to GDP. This condition is to a large extent inherent in that it depends on country size, resource endowments and possibilities for import substitution.

Four Country Scenarios

Briguglio et al (2006) define economic resilience as the policy-induced ability of an economy to recover from or adjust to the negative impacts of adverse exogenous shocks. They propose this as an explanation as to why many small economically vulnerable states generate a relatively high GDP per capita. The authors explain this in terms of the juxtaposition of economic vulnerability and economic resilience, identifying four possible scenarios into which countries may be placed according to their vulnerability and resilience characteristics. These scenarios are termed as "self made", "prodigal son", "best case" and "worst case". Countries classified as "self made" are those which are inherently highly economically vulnerable but at the same time have built their economic resilience through the adoption of appropriate policies that enable them to cope with or withstand the effects of their inherent vulnerability. Countries falling within the "prodigal son" category are those with a relatively low degree of inherent economic vulnerability but whose policies are deleterious to economic resilience, thereby exposing them to the adverse effects of shocks. The "best case" category applies to countries that are not inherently vulnerable and which are relatively well governed economically. Conversely, the "worst case" category refers to countries that compound the adverse effects of inherently high vulnerability by adopting policies that run counter to economic resilience.

This classification is shown in Figure 1, which indicates that economically vulnerable countries, which are well economically governed and have therefore built their economic resilience, are likely to fall in quadrant II.

Figure 1
The Four Scenarios
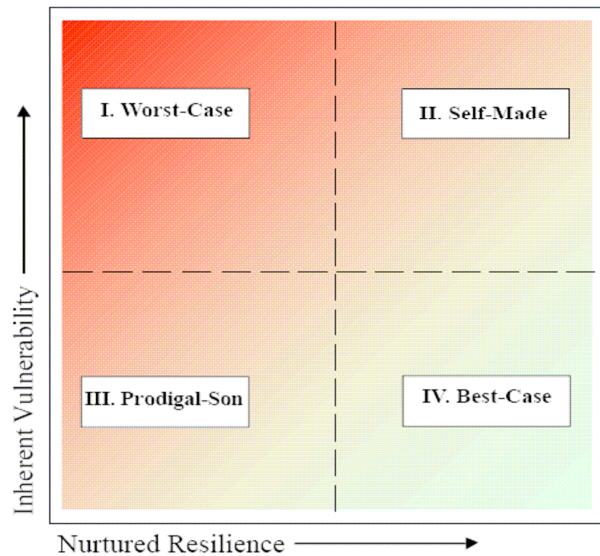
Reproduced from Briguglio (2006)

Another feature of this approach is that it shows that the risk of being harmed by exogenous shocks has two elements, the first is associated with the inherent conditions of the country that is exposed to external shocks and the second associated with policies which enable an economy to absorb, cope with or bounce back from adverse shocks. The risk of being adversely affected by the shock is therefore the combination of the two elements (see Figure 2).

Figure 2
Risks Associated with being Adversely Affected by External Shocks
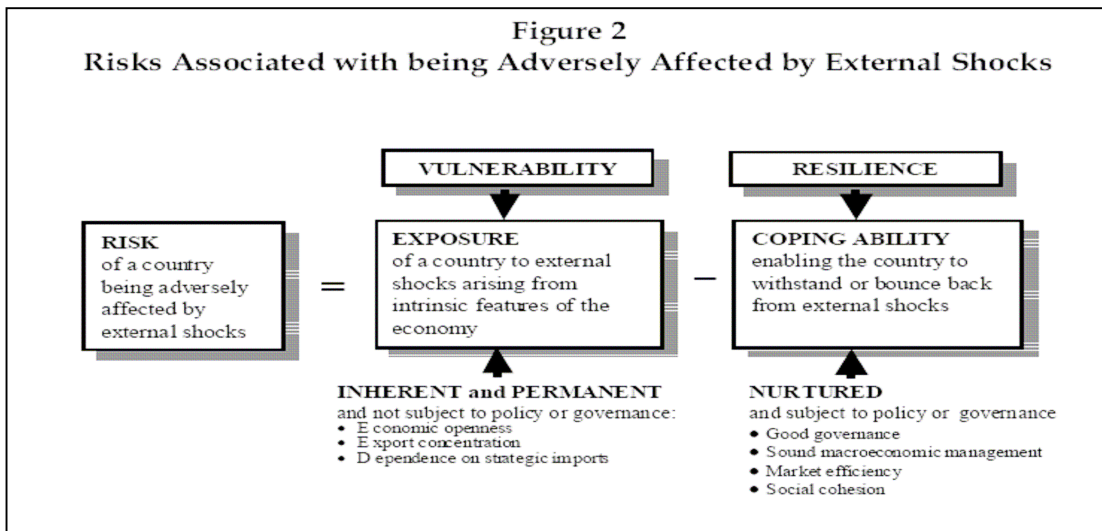
Measuring Economic Resilience

A framework for the measurement of economic resilience has been developed by Briguglio et al. (2006) who constructed a resilience index based on the following factors:
• macroeconomic stability;
• microeconomic market efficiency;
• good governance; and
• social development.

Macroeconomic stability is related to economic resilience in that if an adverse economic shock hits the economy when it is already in a weak position, there will not be much room for manoeuvre, and therefore fiscal and monetary policies might not be effective in mobilising resources so as to enable the economy to rebound from the effects of such a shock. In other words sound macroeconomic policies create latitude for monetary and fiscal policy to respond to shocks (Jayaraman, 2006). Briguglio et al. (2006) propose to measure the macroeconomic stability aspect of resilience on the basis of three variables, namely (i) the fiscal deficit to GDP ratio; (ii) the sum of the unemployment and inflation rates; and (iii) the external debt to GDP ratio. The choice of these was based on their relevance to the resilience concept as well as on the fact that comparable data is available for a wide range of countries.

Microeconomic market efficiency is required for an economy to withstand the effects of negative shocks by enabling a country to rapidly reallocate resources to alternative uses. Briguglio et al. (2006) use, as a proxy for market efficiency, a segment of the *Economic Freedom of the World Index* (Gwartney and Lawson, 2005) entitled "regulation of credit, labour and business", which is aimed at measuring the extent to which markets operate freely, competitively and efficiently across countries. It is designed to identify the effects of regulatory restraints and bureaucratic procedures on competition and the operation of markets. This index focuses on the efficiency of the financial and labour markets, as well as on the degree of bureaucratic control on business.

Good governance is an essential underpinning to appropriate policy formulation and hence an indispensable element of economic resilience, spanning over issues including the rule of law, property rights, domestic and international security and the adequate participation in international trading frameworks. In the absence of good governance, it would be easy for adverse shocks to result in economic and social chaos and unrest. Hence the effects of vulnerability would be exacerbated. In order to derive a proxy variable for good governance, Briguglio et al. (2006) use a component of the *Economic Freedom of the World Index* which focuses on legal structure and security of property rights. This index focuses on judicial independence, impartiality of courts, the protection of intellectual property rights, military interference in the rule of law and the integrity of the political and legal systems.

Social development is another essential component of economic resilience. This factor indicates the extent to which relations within a society are properly developed, enabling an effective functioning of the economic apparatus without the hindrance of civil unrest.

Social development can also be related to social cohesion and as such indicates the extent to which effective social dialogue takes place in an economy, which would in turn enable collaborative approaches towards the undertaking of corrective measures in the face of adverse shocks. Briguglio et al. (2006) measure social development by using the education and health indicators within the UNDP Human Development Index (HDI).

Briguglio et al. (2006) juxtaposed their economic resilience index with the Briguglio and Galea (2003) vulnerability index and concluded that, with reference to Figure 1 above:

- countries which fall in the "best-case" quadrant are mostly the large developed countries including Western Europe;
- countries which fall in the "self-made" quadrant include a number of small states with a high vulnerability score;
- countries which fall in the "prodigal-son" quadrant include mostly large third world countries; and
- countries which fall in the "worst-case" quadrant include a few vulnerable small countries with weak economic performance.

3. A Country-Based Approach

Studies on economic vulnerability and resilience undertaken so far focus on a cross-sectional approach, aimed at benchmarking countries within a global context. As such, they are useful mainly for three purposes. One is to disseminate information on and drawing attention to the issues of vulnerability and resilience building because an index is a very good instrument for drawing attention to the issue being investigated. A second purpose is to help to develop a common language for discussion, because the derivation of indices requires quantification and hence, precise definitions of fundamental notions. The third is to promote the idea of integrated action because indices are the result of a combination of factors.

It is however also true that for the purposes of policy formulation and implementation, benchmarking within an international context is often merely a starting point which needs to be followed by more in-depth investigation of issues within the specific context of the country and its circumstances. It is here proposed that while the notions of economic vulnerability and resilience have been crucial towards promoting a better understanding of development issues of small states especially in relation to their success as compared to larger countries, their practical applicability within the context of policy-setting for an individual country must go beyond the limits of indices derived from internationally comparable data.

These limits pertain in part to restrictions in obtaining data for a sufficiently wide cross-section of countries, thereby curtailing the range of issues which can potentially be studied.

Another important limitation of cross-sectional approaches emanates from the fact that, in order to compare one country with another, a variable within an index may be considered

redundant, and thereby omitted, if it is highly correlated with another that is already included in the index. While this is a valid action within a benchmarking study, it is not suitable for a study focusing on an individual country, where all aspects of vulnerability and resilience need to be studied, irrespective of whether they are correlated or otherwise.

Here we propose a conceptual approach aimed at building a template of variables to be considered in the derivation of a vulnerability/resilience profile for an individual country. The template builds on the findings of the literature up to date, and extends these concepts as may be appropriate for an individual country setting. The derivation of the economic vulnerability/resilience profile proposed here is based on three facets, as follows.

An assessment of the symptoms of economic vulnerability. This facet relates to the manifestation of vulnerability or lack or resilience and attempts to determine whether a country appears to be suffering from any one or more of the symptoms of vulnerability or otherwise. This gives a first indication within the country profile, as to which areas of economic activity or policy may be conducive to economic vulnerability

An assessment of the causes of economic vulnerability. This facet of the profile relates to the underlying causes of vulnerability and is aimed at assessing the inherent fundamental conditions which may be rendering a country vulnerable to exogenous shocks.

An assessment of the sources of economic resilience. This facet of the profile aims to highlight the strengths and weaknesses within the policy formulation milieu of a country towards the objective of economic resilience building.

Each of these assessment facets can be carried out through quantitative variables. In cases where quantitative variables are not available or insufficiently representative of the important issues under consideration, qualitative data can be used, which could then be expressed through a mapping scale of a number possibilities.

Tables 1 to 3 below present a number of variables which could be used for the purpose of country profiling. The variables and factors have been selected on the criteria of relevance and parsimony, in such a way that they are comprehensive of all important issues to be discussed without being excessively cumbersome for the purposes of analysis. The quantitative variables are typically available from a statistical system that corresponds with the Generalised Data Dissemination Standard of the International Monetary Fund, although the requirements for the approach proposed here are less stringent than that of the Standard. The qualitative factors are to be obtained from case-study approaches within the individual country, backed by relevant data as may be available.

Assessing the Symptoms of Economic Vulnerability or Lack of Resilience

Economic vulnerability in countries where resilience is not sufficiently developed is often manifested in four phenomena, as identified by Cordina (2008). These are:

- volatility in output and consumption over time;
- volatility in the value and volume of international transactions;
- volatility in exchange rates and prices, and;
- sustained deficits on the external current account deficit and high government expenditure.

These variables proposed to measure them are summarized in Table1.

Table 1
The Symptoms of Vulnerability*

Volatility in output and consumption	GDP at current prices per capita, in domestic currency
	GDP at constant prices per capita, in domestic currency
	Consumption expenditure per capita at current prices, in domestic currency
	Consumption expenditure per capita at constant prices, in domestic currenc,
Volatility in value and volume of international transactions	Exports of goods and services at current prices, in domestic currency
	Exports of goods and services at constant prices, in domestic currency
	Imports of goods and services at current prices, in domestic currency
	Imports of goods and services at constant prices, in domestic currency
Volatility in exchange rates and prices	Nominal effective exchange rate: highest monthly average
	Nominal effective exchange rate: lowest monthly average
	Real effective exchange rate: highest monthly average
	Real effective exchange rate: lowest monthly average
Short-term shock absorbers	External current account balance as percent of GDP
	Government total expenditure as percent of GDP

*All variables are based on annual observations covering 10 years of most recent data

Volatility in output and consumption can be gauged by developments in the respective variables in per capita terms, at current and constant prices in index levels, for a period of time which is sufficiently long to enable the observation of volatility. A ten-year period would be appropriate in this case, as this could indicate the assessment of long term growth trends, cyclical fluctuations as well the effects of specific shocks and their aftermath. Likewise, the volatility in the value and volume of financial transactions can be discerned from the developments in imports and exports in index levels, at current and constant prices, over a sufficiently long period of time.

Depending on the type of exchange rate regime adopted, a country that is susceptible to external shocks may experience volatility in either the nominal or the real exchange rate. Volatility in either one or both of these variables, which can be as the maximum and minimum month values over a ten-year period, and this is considered to be a symptom of vulnerability to external shocks.

Economic vulnerability and/or insufficient resilience may also produce persistent deficits on the external current account of the balance of payments, a result of responses to

shocks to strategic import prices and to specific demand shocks within a narrow range of exports (Cordina, 2008).

They may also result in relatively high levels of government expenditure, reflecting the need for stabilization interventions to manage the effects of shocks.

Consideration of these variables yields a generic indication regarding the extent to which a country is being affected by shocks, which is a combination of its inherent vulnerability and nurtured resilience. In order to derive meaningful comparisons, the numerical values of the variables considered may be analysed over time or in relation to another country or limited group of countries. This would be followed by an assessment of the specific causes of vulnerability and the sources of resilience, as explained in the following sections.

Assessing the Causes of Economic Vulnerability

From a conceptual viewpoint, the extent to which a country is subject to shocks is a function of two factors. The first is its inherent exposure to such shocks. Exposure on its own however does not imply that shocks of a significant nature would be influencing a country. For this to happen, exposure would have to be combined by the actual materialization of shocks, here termed the incidence of shocks. Table 2 details the variables which are proposed to be considered in order to measure a country's exposure to shocks and the extent of incidence of shocks to which a country may be exposed.

The degree of exposure to shocks may be measured by variables which are in common use within the vulnerability literature. These are trade openness, defined as the share of exports and imports within GDP, the degree of export market concentration, measured by the share within total exports of the three main export products/services and a measure of the price elasticity involved in international trade transactions. The notion behind the last factor is that if a country is engaged in price inelastic exports and price inelastic imports, negative shocks to the terms of trade would imply significant welfare losses to the economy. Thus, it is proposed that the price elasticity of international trade transactions be measured by the shares within the respective totals of commodity exports and of strategic imports, the latter defined to include food and energy.

Table 2
The Causes of Vulnerability*

Exposure to shocks	**Trade Openness**	Exports as percent of GDP
		Imports as percent of GDP
	Export Concentration	Sum of three main categories of exports of merchandise at the 3-digit level, as percent of total merchandise exports
		Sum of three main categories of exports covering merchandise (3 digit level) and services (tourism and financial services) as percent of total exports of goods and services)
	Price elasticity of international trade	Commodity exports as percent of total exports of merchandise
		Share of strategic imports (food, fuel and industrial supplies) as percent of imports of merchandise
Incidence of shocks	**Domestic shocks**	Gross fixed capital formation
	International demand	Foreign financial capital inflows as percent of GDP
		Average weighted GDP of three main partner countries, constant prices,
	Terms of trade shocks	Export prices
		Import prices

*All variables are based on annual observations covering 10 years of most recent data

The degree of incidence of shocks on an economy is here construed to depend upon three factors, namely the proneness to domestic demand shocks, to fluctuations in international demand and to terms of trade shocks. It is proposed that the proneness to domestic demand shocks can be evaluated by considering the volatility of gross fixed capital formation for a sufficiently long period of time, in terms of changes in the levels in index format. The choice of this variable is motivated by the fact that gross fixed capital formation is often one of the components of aggregate demand that is most sensitive to changes in economic conditions, including domestic economic policy.

Shocks to international demand can be proxied by considering the volatility of foreign non-direct capital flows in relation to GDP, and through fluctuations in the average GDP in the three main trading partner countries. The choice of non-direct foreign investment flows is motivated by the fact that international capital flows are often a source of monetary volatility in a country with possible repercussions on the real economy. The exclusion of direct investment flows from this section of the analysis is based on the argument that such flows would be already incorporated in the gross fixed capital formation variable.

The GDP of the main trading partner countries is assumed to influence economic activity in the country being analysed, and relates to the causes of external shocks. The volatility in exports of the country in question in this framework is considered as a symptom rather than a cause of vulnerability, as explained in the previous section.

The obvious choice to the modelling of terms of trade shocks is export and import prices. The consideration of the movements of these separate variables over time gives an indication of the sources of shocks to economic activity emanating from changes in prices of strategic imports and of exports which often contribute substantially to incomes.

Thus, the joint consideration of factors which generate exposure to shocks and the extent of the shocks themselves would give a picture of the overall level of economic vulnerability of a country and the primary sources of such vulnerability. Combined with the information collected in the process of analysing the symptoms of vulnerability, a better understanding of the reasons behind and the effects of shocks on an economy would be obtained.

Assessing the Sources of Economic Resilience

Following the mainstream literature, economic resilience is here considered to depend upon policy interventions in five areas, namely macroeconomic robustness, microeconomic market efficiency, adequate governance, social development and environmental management. As discussed earlier on, the issue of environmental management is as yet not given explicit consideration in cross-country measures of vulnerability, although its importance is widely recognized. At a country level, the issue of environmental management should therefore receive attention.

An obvious difficulty in the measurement of resilience performance is that in practice, it is often very difficult to identify variables which measure the adequacy of policy interventions. Rather, the variables available would often be the result of policy interventions and other factors which enter into play in determining performance. For example, the inflation, unemployment, deficit and other variables used by Briguglio et al. (2006) would certainly reflect the quality of policy-making in a country, but not exclusively so. Thus, quantitative approaches towards the measurement of resilience must rely on proxy variables, which would not necessarily reflect solely policy issues. For this reason, the approach proposed here to evaluate the sources of resilience relies in good part on qualitative assessments based on case study approaches for an individual country.

Table 3 details the variables which are here proposed to be considered in the analysis of the sources of resilience of an individual country.

Table 3
The Sources of Resilience*

Macro-Economic	Gross fixed capital formation as percent of GDP
	Consumer price inflation (percent)
	Unemployment rate (as percent of GDP)
	Fiscal balance as percent of GDP
	Net external assets (external reserves less external debt) as percent of GDP
Micro-Economic	*Capital Mobility:*
	Exchange controls
	Interest rate control
	Quantitative controls (qualitative assessment over recent 3 years)
	Labour Market Flexibility:
	Skills mobility within the labour force
	Geographical mobility of labour (domestic and international)
	Government involvement in wage setting
	Union power
	Product markets:
	Government involvement in price setting (qualitative assessment over recent years)
	Level of domestic competition (qualitative assessment over recent years)
	Barriers to international trade (qualitative assessment over recent years)
	Participation in international trade arrangements/regional blocks (qualitative assessment over recent years)
Governance	Rule of law
	Security
	Property rights
	Institutional development
	Corruption
	Freedom of expression
	Human rights
	Participation in regional political and security arrangements
Social	Percentage of government budget assigned for social development (current and capital expenditures to be treated separately)
	Poverty/deprivation (measured by the percentage of the population living below the poverty line)
	Health (possibly measured by the number of hospital beds per capita and life expectancy)
	Education (possibly measured by school enrolment ratios, literacy rates and early school leaving rates)
	Income distribution
	Social cohesion (index could be based on variables related to ethnic fractionalisation, incidence of civil strife, prison population rate and suicide rates)
Environmental	Percentage of government budget assigned for environmental management (current and capital expenditures to be treated separately)
	Generation of waste per capita (solid and liquid to be treated separately. Sewage emissions into the oceans to be considered)
	Vehicles in use per square kilometre of populated land areas
	Carbon emissions per capita
	Percentage of land area designated as environmentally protected area
	Percentage of energy generated from renewable resources
	Number of international environmental instruments ratified and operationalised

*All data is to cover the five most recent years. Most variables, particularly those relating to microeconomic efficiency, governance and social aspects require a qualitative assessment of policy stances and major changes, accompanied, when available, by quantitative data.

Under the macroeconomic dimension, developments in price inflation, unemployment, the fiscal deficit as a percentage of GDP and net external assets as a percentage of GDP, are proposed to be considered, in line with the approach taken by Briguglio et al. (2006). In addition, developments in gross fixed capital formation as a percentage of GDP may be considered, because capital formation is often an essential element to resilience building within a country (Cordina, 2004a;b).

The role of the gross fixed capital formation variable within the context of this analysis deserves further consideration. Viewed in terms of levels over time, the volatility of gross fixed capital formation can be discerned, and this would constitute a cause of vulnerability, as discussed within the context of Table 2. Viewed as a proportion of GDP, where the effects of shocks would tend to be mitigated since capital formation and GDP would be likely affected in similar manner, gross fixed capital formation would indicate the extent to which an economy is building buffers which would enable it to meet the effects of shocks. From this perspective, therefore, the gross fixed capital formation variable would indicate a source of resilience.

The issue of microeconomic market efficiency within a country requires in-depth study which often goes beyond the information provided by international organisations. It is here proposed that this issue be investigated through a qualitative and case study approach specific to individual countries, backed by data and information that may be available.

The issues to be considered include the extent of capital mobility, as may be gauged by the presence of exchange controls, interest rate controls and quantitative controls on the financial system. The notion in this case is that frictions in the movement of capital within and outside the country would often constitute a barrier to the effective reallocation of resources following an external shock.

Similarly, labour market flexibility needs to be considered within this context. Issues which are relevant in this case would include the degree of skills present in the labour force, including the existence of multi-skilling, the geographical mobility of labour, at both domestic and international levels, as well as the extent of government interference in wage setting and of union power in the labour market. The latter two variables can be measured through, for example, the ratio of the average wage to the minimum wage and the level of union density, among other data-based and qualitative approaches.

As regards efficiency in product markets, the factors that need to be taken on board include the extent of government involvement in   the price mechanism, which may be measured by the extent of price control. The level of domestic competition, as could be measured by market concentration ratios and the extent of barriers to international trade, as could be discerned by the average tariffs rates on imports, would also need to be investigated.

Finally, the extent of participation in international trading blocks, customs unions, single markets or monetary unions is to be measured in terms of the efficiencies that it would

likely introduce within domestic markets. Data on this and other variables in the market efficiency group are not likely to be easily available. It is important to reiterate that within the individual country approach, quantitative data which cannot be obtained can be substituted by qualitative assessments based on case studies and expert opinion.

Governance issues may be also evaluated through quantitative and qualitative approaches according to the specific circumstances and needs of individual countries. At a conceptual level, the main issues to investigate in this case would include those studied by Kaufmann et al. (2006), including rule of law, security, the enforcement of property rights, institutional development, absence of corruption, freedom of expression and the safeguarding of human rights. In addition, the effects of participation in international political and security arrangements on the governance structures within a country could be investigated in this context, following Pace (2006).

A similar approach is proposed to be adopted in the investigation of social development issues within the context of resilience building. Government budget allocations for social development would seem to be relevant in this regard, although care should be taken to take account of expenditure inefficiencies. Following Springer (2006), the main factors which may be considered in this context include the extent of poverty and deprivation and the situation with regard to health, education, income distribution and social cohesion. Social empowerment requires strong fundamentals with respect to health, education and income status of the citizens and these variables should feature in the social development group of variables.

Specific issues relating to environmental management policies can be investigated through qualitative and quantitative approaches. The variables included in Table 3 were selected on the basis of their link with policy aimed at a more sustainable use of environmental resources. It is assumed that this should effectively improve the economic resilience of the economy.

4. Conclusions

Studies on economic vulnerability and resilience undertaken so far have provided valuable insights into the development processes of small states. Yet, their focus on a cross-sectional approach, aimed at benchmarking countries within a global context, may be insufficient for the purposes of policy formulation and implementation. This is because conceptual frameworks for cross-country comparisons and data limitations may limit the consideration of all relevant variables which need to be taken into account for profiling an individual country.

This paper proposes a conceptual approach aimed at building a template of variables to be considered in the derivation of a vulnerability/resilience profile for an individual country. The template builds on the findings of the literature to date, and extends these concepts as may be appropriate for an individual country setting. The derivation of the economic vulnerability/resilience profile proposed here is based on assessments of the symptoms (or manifestations) of economic vulnerability, the causes of economic

vulnerability and the sources of economic resilience building. Each of these facets can be assessed through a mix of quantitative variables and qualitative factors, in cases where quantitative variables are not available or insufficiently representative of relevant issues to consider.

The approach presented in this paper is at this stage at a conceptual level and needs to be tested within the frameworks of specific small countries which would ideally be facing different economic circumstances, and hence having different vulnerability and risk profiles. It can be postulated that with the undertaking of country-specific studies based on the framework outlined in this paper, a dossier of best practices can be derived which would serve as a reference to optimal policy formulation and implementation, particularly for small states.

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