

# GOVERNMENT EXPENDITURE, DEBT AND FISCAL ADJUSTMENT IN SMALL STATES

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**Abstract.** Using a new fiscal dataset for small states, this paper analyses the link between country size, government size, debt, and economic performance. It finds that on average small states have larger governments and higher public debt. Although there are intrinsic factors that explain why governments are bigger in small states, those with smaller governments and lower public debt tend to grow faster and are less vulnerable and more economically resilient to external shocks. Large fiscal adjustments, primarily through expenditure restraint, can underpin growth, especially when embedded in an economic reform programme. Since better governance is associated with lower debt, fiscal adjustment should be supported by governance improvements.

## 1. Introduction

Certain fiscal characteristics of small states can affect the implementation of sound policies. In providing public services, small states tend to face higher per capita costs because of their limited ability to reap the benefits of economies of scale, which leads to an inverse relationship between country size and the size of government (Alesina and Wacziarg, 1998; Alesina and Spolaore, 2003). Small states are more open and more exposed to external shocks, and may therefore require a bigger government to provide an insulating role (Rodrik, 1996). Customs revenues tend to be a larger share of total revenues and income taxes a lower share because it costs less in overheads to collect customs tax than income tax (Easterly and Rebelo, 1993; Borg, 2006).

Since the early 1990s, in many small states a growing public debt problem has been worsened by a slowdown in growth rates, partly due to the

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\* This study should not be reported as representing the views of the IMF, and the views expressed in it are those of the authors and do not necessarily represent those of the IMF or IMF policy. The authors would like to thank Paula De Masi, Norbert Funke, Gabriel Sterne, Wayne Mitchell, Reginald Darius, Cathy Pattillo, Corinne Deléchat, George Tsiouris, Allan Brunner, Ali Abbas, Montfort Mlachila, Simon Duggan, Victor Lledó, and Philippe Callier for very helpful comments and suggestions.

erosion of trade preferences and to shocks (Dodhia, 2005; Briguglio, Persaud and Stern, 2006). During this period, for instance, sluggish growth and fiscal pressures have emerged in some Pacific islands (Browne, 2006), and rising debt has been especially pronounced in the Caribbean countries (Sahay et al., 2006). Large fiscal deficits in small states can undermine their economic resilience to recover from adverse shocks (Briguglio et al., 2006).

This study has two main objectives. The first is to extend previous studies of the size of government in small states to a close analysis of public debt levels. The second is to draw policy recommendations for fiscal tightening from the experience of small states so they can withstand their economic vulnerability stemming from high economic volatility, and strengthen their economic resilience through the reduction of high public debt.

Although there are structural factors related to higher government spending in small states, many of them can use fiscal tightening to boost their flexibility in response to external shocks and so underpin their resilience.

The study also presents evidence that drastic fiscal adjustment can support growth in small states, particularly when supported by an economic reform plan. Similarly, improving governance and transparency can help lower public and external debt.

Using a new fiscal dataset for 42 small states, the results presented in this study confirm that there is a significant negative correlation between country size and size of government. Small states tend to have higher government spending on goods and services, wages and salaries, and capital investment. They also provide some new evidence of an inverse relationship between country size and the amount of public debt and external public debt in small states. Furthermore, the study unveils fresh evidence that in small states weak governance (or low government effectiveness) is associated with higher total public and external debt.

The remainder of this chapter is organised as follows. Section 2 defines small states and presents some stylised facts about these states. Section 3 discusses a number of fiscal indicators with special reference to small states. Section 4 presents empirical analysis relating to the link between country size and government expenditure and its components. A similar exercise is carried out with regard to debt. Section 5 expounds policy considerations and measures relating to fiscal adjustment and resilience building in small states. Finally, section 6 puts forward some relevant recommendations and concludes the study.

## 2. Small States: Stylised Facts

### *Definition of Small and Large States*

Small states in this chapter are defined as developing and emerging-market countries that have a population of about two million or less.<sup>1</sup> We add Jamaica and Papua New Guinea, because, although having higher populations, these states have many of the economic and physical characteristics of small states. This definition is somewhat broader than the one used by the World Bank and the Commonwealth Secretariat, which sets a population ceiling of 1.5 million but they also add Jamaica, Lesotho, Namibia, and Papua New Guinea, resulting in a similar list of countries. (Other measures of economic size, such as total GNP or GDP, territory size, and total arable land, have been used to rank countries according to size, but population data is more readily available, and may be more directly related to economic realities.)<sup>2</sup> This study uses a sample of 42 small states from all regions of the world – 14 from Africa, 9 from Asia Pacific, 4 from Europe, 2 from the Middle East, and 13 from the Western Hemisphere.<sup>3</sup> Of these, 26 are islands and 4 are landlocked.

It follows from the above definition of small states, that a large country is defined as a country with a population of over two million. The large country sample consists of 25 developing and emerging-market countries from different regions, with the majority being mainland countries. This comparator group of large countries was chosen because fiscal data on these countries, particularly on public debt and the composition of expenditures, which is usually difficult to obtain, was readily available from the Fiscal Affairs Department of the IMF.

### *Remoteness and Limited Economies of Scale*

Remoteness and limited ability to reap the benefits of economies of scale in small states are two reasons explaining their higher cost structure, which tends to raise government expenditures and can impact public debt. Many small states, particularly in Africa and the Pacific, are located

<sup>1</sup> The classification of a country as a developing and emerging-market one was largely based on the IMF *World Economic Outlook* classification from 2006, the time when this study was initiated.

<sup>2</sup> There is no single definition of a small state, with most definitions being based on population size. Some definitions are based on economic or geographic size. In reality, there is a continuous range of country sizes, with countries larger than the chosen threshold sharing some characteristics of small states.

<sup>3</sup> See Appendix, Tables A1 and A2, for a detailed overview of small states and large countries.

physically far from major markets or trading partners. These are often islands, although there are also a few landlocked countries. Remoteness tends to raise transport costs.

Expenditure indivisibilities in the government's provision of goods and services also lead to larger governments (Alesina and Wacziarg, 1998). There are fixed costs in creating public institutions and providing public services like policing, education, justice, social services, and foreign affairs. Because these public services must be provided independent of population size, in small states the cost is higher per person (or taxpayer).<sup>4</sup> Table 1 shows the significant cost disadvantages associated with small size in such areas as transportation, travel, fuel, and some utilities (Winters and Martins, 2004). Higher costs result from high costs of imported inputs as well as remoteness.

**Table 1**  
**Cost Disadvantages of Very Small and Small States**  
(Percentage Deviation from those in the Median Economy)

Area of Cost	Micro	Very Small*	Small*
Unskilled wages average	60.1	31.6	6.6
Airfreight average	31.8	4.1	-1.7
Seafreight average	219.6	70.5	9.1
Telephone average (marginal costs)	98.5	47.2	9.0
Electricity (marginal costs)	93.1	47.0	9.4
Water (marginal costs)	0.0	0.0	0.0
Fuel average	53.8	28.3	5.9
Personal air travel average	115.7	56.8	11.0
Land rent average	-3.5	-17.2	-8.9

Source: Winters and Martins (2004)

\* A very small state is one with a population of 200,000 or less, and a small state is one with a population of no more than 4 million population. The median for population is 10 million.

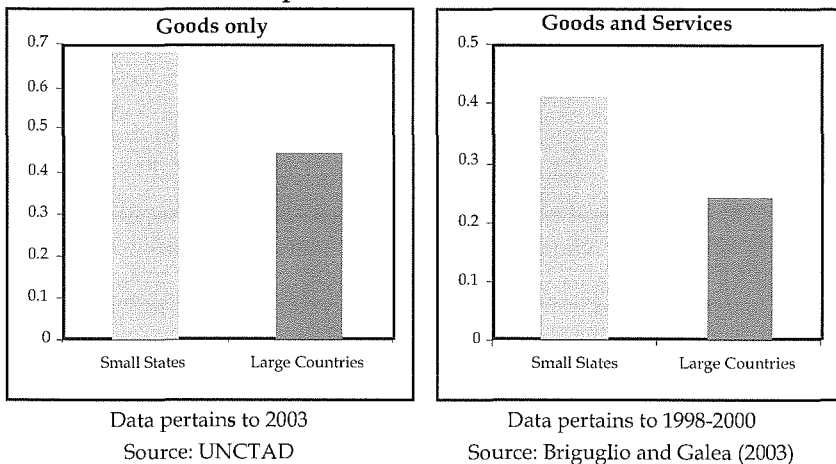
### *Lack of Economic and Export Diversification*

Many small states depend heavily on a narrow range of exports, including primary commodities. This can raise the size of government expenditure because small states are particularly vulnerable to

<sup>4</sup> Population density can impact the size of government as after a certain point, higher congestion may raise the cost of some public goods and services. However, others may argue that a more geographically disperse population may raise the cost of delivery of some government services. We control for population density in the empirical analysis.

commodity or weather-related shocks. UNCTAD publishes a concentration index for exports by country with values ranking from 0 to 1, the latter indicating maximum concentration. For small states in 2003, the merchandise export concentration index was 0.41, compared to 0.24 for all developing countries.<sup>5</sup> Similar results were reported by Briguglio and Galea (2003), who factored in services in the concentration index of countries (Figure 1).

**Figure 1**  
**Export Concentration Index**



In many small states, one to three sectors typically dominate exports – for example, tourism and canned tuna in Seychelles, tourism in Samoa, timber and fish in the Solomon Islands, and tourism and bananas in St Lucia and St Vincent and the Grenadines. In fact, tourism is a major and growing export for many small states, especially in the Caribbean, Indian Ocean (Maldives, Mauritius and Seychelles), and to a lesser degree in the Pacific islands. These last tend to rely on primary commodities, with little diversification into manufacturing (Browne, 2006). Several African small states, such as Botswana, Gabon, Guinea Bissau, and Namibia, also rely on primary commodities. The European states of Cyprus and Malta have more diversified economies.

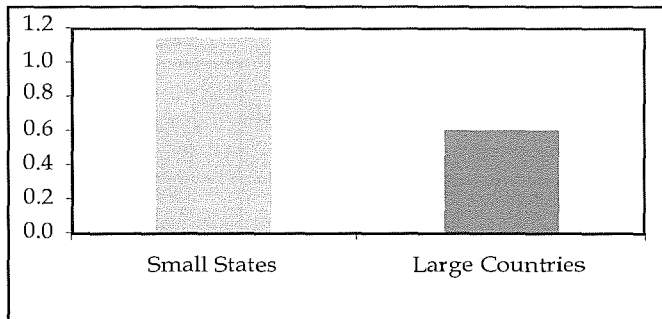
### *High Degree of Openness*

Small states tend to be far more open, as reflected in a high ratio of external trade to GDP (Figure 2) and in their reliance on foreign capital and investment. Openness results from the fact that the domestic market

<sup>5</sup> See <http://stats.unctad.org/handbook/>.

of small states is very small, they depend heavily on imported industrial supplies and, as a result, they require substantial foreign exchange inflows to meet their high import bill. While openness to trade and foreign investment helps small states overcome their inherent scale and resource constraints, it also makes them vulnerable to external economic shocks.

**Figure 2**  
**Trade Openness\* (2000-04)**



Source: IMF staff estimates

\*Calculated as  $(\text{Export} + \text{Imports}) / (2 \times \text{GDP})$

### *Economic Vulnerability*

The Commonwealth Vulnerability Index (Atkins et al., 2000) and the University of Malta Vulnerability Index (Briguglio and Galea, 2003), which both contain components reflecting trade openness and export concentration, indicate that small states tend to be more economically vulnerable than larger countries.

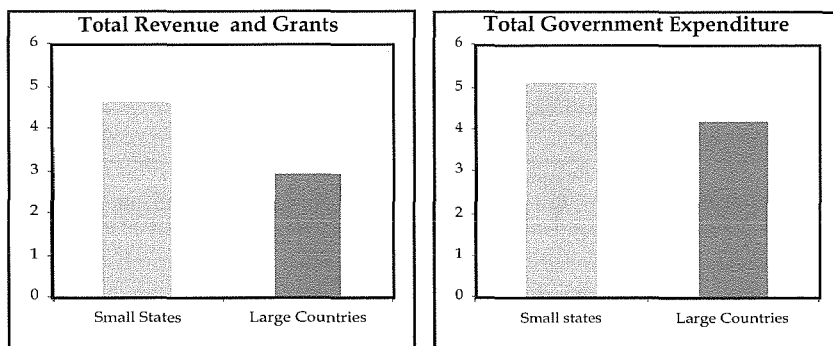
### *Output Volatility*

Output in small states tends to be more volatile due to the compounding of certain characteristics,<sup>6</sup> including (i) their greater openness exposes them more to changes in world market prices and world demand; (ii) their lack of economic and export diversification leaves them more exposed to terms of trade shocks;<sup>7</sup> and (iii) natural disasters can impact the whole country rather than a single area.

<sup>6</sup> Easterly and Kraay (2000) argue that while small states do have more volatile growth rates due to greater exposure of terms of trade shocks because they are more open, openness has a positive net impact on growth.

<sup>7</sup> Shocks can be both positive and negative, though in both cases they raise output volatility.

**Figure 3**  
**Fiscal Volatility in Small States**  
 (Calculated as the Standard Deviation for 1990-2004)



Source: IMF staff estimates

Economic volatility in small states can also be heightened by the lack of intracountry fiscal transfers that larger countries benefit from. For instance, a region or state in a large country hit by a localised recession or natural disaster would benefit from fiscal transfers from the rest of the country.<sup>8</sup>

The higher economic volatility in small states leads to more volatility in government revenues and expenditures than in large countries (Figure 3). This is despite the fact that these larger emerging-market countries tend to have more volatile revenues than advanced countries (IMF, 2003). Greater volatility can affect public debt because revenue shortfalls and expenditure overruns are more likely when a government is hit by a shock. Volatility in government revenue and expenditure in small states can lead to a more volatile fiscal balance that further reinforces macroeconomic instability.

#### *Narrow Human Resources Base*

Narrow human resources in small states, often accentuated by migration leading to skill and brain drains, tends to limit capacity in both public and private sectors; this can inflate wages because skilled (and sometimes also semiskilled) labour is scarce (Table 2). Winters and Martins (2004) found that wages tend to be higher in smaller countries, even after controlling for income levels. The brain drain can render providing specialised government services, such as regulation, court systems, social welfare, health and education, more difficult. The limited institutional capacity of small states is accentuated in poorer African countries and multi-island states in the Pacific.

<sup>8</sup> Alesina and Spolaore (2003) refer to this as regional 'insurance'.

**Table 2**  
**Wage Disadvantage of Very Small\* and Small States\***  
 (Percentage Deviation from those in the Median Economy)

Area of Cost	Micro	Very Small*	Small*
Unskilled wages average	60.1	31.6	6.6
Semi-skilled wages average	22.4	12.1	2.6
Skilled wages average	38.0	20.3	4.3

Source: Winters and Martins (2004)

\* A very small state is one with a population of 200,000 or less, and a small state is one with a population of no more than 4 million population. The median for population is 10 million.

### *Governance and Transparency*

For lower-income small states, in particular, improving governance and the quality of institutions has been shown to raise the public debt threshold that countries can safely sustain without experiencing debt distress. This is particularly important because numerous low-income states tend to have higher public and external debt and worse governance. There is also evidence that better institutional quality is associated in emerging markets with more prudent borrowing and a more countercyclical response of fiscal policy (IMF, 2003).

Briguglio et al. (2006) claim that good governance, related to the rule of law and property rights, is imperative for an economy to function properly and withstand adverse shocks. In this regard, good governance can support economic resilience. Brautigam and Woolcock (2001) argue that since small countries are more vulnerable, the quality of their institutions matters more than in large countries. They maintain that small states with high-quality institutions have less growth volatility and are more likely to benefit from higher rates of economic growth.

According to the World Bank's indicator on government effectiveness, small states span the whole governance spectrum—and they do not fare worse than larger developing states—but they have more to gain by improving governance because their public debt tends to be higher.<sup>9</sup> The World Bank's indicator on government effectiveness, reflects the capacity of government to formulate and implement policies, with higher values corresponding to better governance. In particular, it assesses the quality of public services, the quality of bureaucracy, the competence of civil servants, the independence of civil servants from political pressures and the credibility of the government's commitment to policies.

<sup>9</sup> The indicators are constructed using an unobserved components methodology and surveys described in detail by Kaufmann et al. (2006). The indicators are subject to a standard error, so precise country rankings should not be inferred from the data.



Transparency can support the fiscal adjustment required in many small states by creating wider public support and understanding of government policies (Daniel et al., 2006). In addition, transparency can help investors make better-informed assessments on risk and lending to small states, and can reassure financial markets and donors on the government's fiscal goals. Enhanced transparency is particularly important for small states, because they are at an informational disadvantage compared to large countries – foreign investors tend to know less about them – while at the same time they are more open and dependent on foreign capital. In an increasingly globalised world, small states need to compete with large countries that investors are more familiar with, that benefit from economies of scale, and that suffer less from isolation.

Improving governance can support donor aid by enhancing credibility on the use of official development assistance, including grants, which are particularly substantial for small states, especially for those in Africa and the Pacific states that have weak governance.

In small states, due to their small internal markets, private and public monopolies are common, and this can lead to abuse and corruption. Greater political centralisation and the larger role and size of the public sector in small economies compared to large ones often leads to political interventions and rent seeking in the supply of utilities and other public services, such as housing.

### *Exchange Rate Regimes*

One striking feature common to 35 of the 42 small states is a fixed exchange rate regime, which often implies some degree of monetary integration with a large currency area, such as the US. dollar or the euro (see Appendix, Table A1). This leads to limited room for the endogenous determination of interest and inflation rates, and consequently less control over domestic output.<sup>10</sup> Views vary as to whether a fixed regime tends to reduce or increase incentives for high public debt. When they fix their exchange rates, small states would be giving up an adjustment tool that is especially useful when they are hit by an external shock; this may be leading them to use fiscal policy to smooth out economic fluctuations, resulting in debt accumulation. Some recent research suggests that a fixed exchange rate regime can worsen the fiscal position. For example Tornell and Velasco (2000), Alberola and Molina (2004) and Duttagupta and Tolosa (2006) find that countries with fixed exchange

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<sup>10</sup> One reason many small states may chose a fixed exchange rate regime is due to the more limited institutional capacity that exist in both the public and private sectors. Flexible exchange rate regimes tend to require more sophisticated monetary policy, while private agents can benefit from knowledge on how to deal with exchange rate risk, such as hedging.

rates had worse fiscal outcomes than those with flexible exchange rates. Sahay (2005) produces similar findings for the Caribbean countries. The rationale here is that fixed regimes encourage lax fiscal discipline and increase public debt because the cost of these policies – the inflation tax – can be postponed to the future.<sup>11</sup>

However, the more traditional view is that, appropriately implemented, fixed exchange rate regimes can encourage more fiscal discipline, because expansionary fiscal policies are discouraged as these will eventually lead to the collapse of the peg. Vella (2005) finds that small states with hard pegs tend to be associated with a higher degree of fiscal discipline when compared to countries with a floating exchange rate regime, arguing that lax fiscal policy could result in a rundown in reserves that will ultimately jeopardise the sustainability of the peg. In addition, eventual punishment of the authorities for lax fiscal policy under fixed rates may be more severe than under flexible rates (Sun, 2003). If the fixed exchange rate regime is designed so that it enhances economic and monetary integration with major trading partners – in other words, by pegging to or adopting the currency of a main trading partner – it may actually help stabilise growth and reduce transaction costs (Armstrong and Read, 1998). Moreover, if the anchor currency country and the small state share a relatively synchronous business cycle and terms of trade shocks, the policies of the anchor country should also support growth in the small state. All these considerations would be conducive to lowering public debt.

### 3. Fiscal Indicators

For the purpose of this study, data on gross public and external public debt for the small states was obtained from the IMF World Economic Outlook database, staff reports, and country economists. The broadest possible coverage of government liabilities was aimed for, although often only general government or central government debt was available.<sup>12</sup>

#### *Government Expenditures*

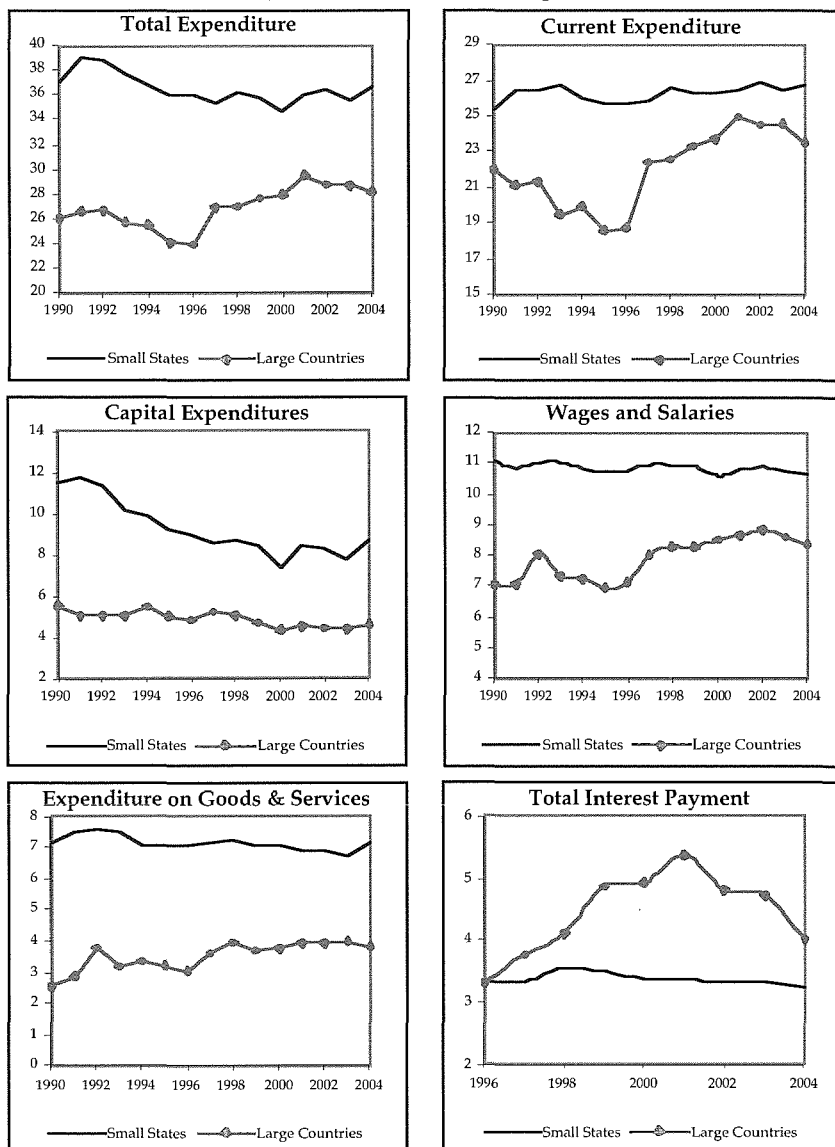
Small states tend to have bigger governments than large countries, as measured by both average total expenditure and most expenditure subcategories (Figure 4). In 2004 total expenditures in small states were

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<sup>11</sup> This is also referred to as the intertemporal free-riding problem; it assumes that the government can borrow to finance its deficit and has enough reserves in the near term to maintain the fixed exchange rate.

<sup>12</sup> Due to different national definitions of the public sector and the various sources used to collect the data, there are some definitional fiscal data issues, especially with the public debt data. However, this problem is not unique to this cross-country study (see IMF, 2003).

**Figure 4**  
**Expenditures for Small and Large States (1990-2004)**  
 (Percent of GDP, Averages)



Source: National Authorities and IMF staff estimates

about 3 $\frac{1}{2}$  percent of GDP on average, although there has been a marginal downward trend since the early 1990s, largely due to a decline in capital spending. Both components of total expenditure, current expenditures and capital spending, were higher in smaller states than in large ones.

Within current spending, most subcategories were higher in small states, including spending on goods and services and on salaries and wages. Only interest spending on government debt was higher in large states, because they borrow more on commercial terms and from international capital markets; small states tend to borrow more on concessional terms.

There is considerable variation among small states in the level and composition of expenditures, more than among large countries. For example, at the high end, total expenditures in 2000–2004 in São Tomé and Príncipe and in the Federated States of Micronesia were about 70 percent of GDP and in the Seychelles about 51 percent (see Appendix, Table A3 ). At the low end, total expenditures in 2000–2004 were only about 20 percent of GDP in the Bahamas and Equatorial Guinea, well below the average for large countries. Capital spending for the same period was as high as 31 percent of GDP in São Tomé and Príncipe and as low as 2 percent in Jamaica. In fact, the standard deviation of expenditure and most expenditure subcategories, except for interest payments, was higher in small states than in large countries.

### *Revenues*

Revenues in small states have trended up since 2001, and on average these states have higher revenues and grants than larger states, in part due to the revenue from customs or international trade taxes (Figure 5).<sup>13</sup> Small states with particularly substantial revenues are Gabon (largely due to oil revenues), Seychelles and Malta.

The smallest island states obtained more revenues from international trade taxes than mainland small states (Figure 6). Landlocked small states obtained the highest proportion of their revenue from customs taxes, but for three of the four landlocked states, Botswana, Lesotho, and Swaziland, this was due to the revenue-sharing arrangement of the South African Customs Union (SACU).<sup>14</sup>

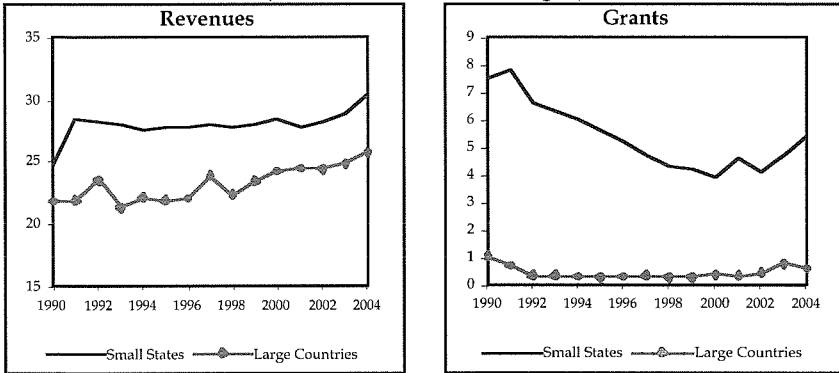
However, the share of revenue from international trade taxes for small states has been declining since 1990 with ongoing world trade liberalisation,<sup>15</sup> though in many small states the introduction of VAT and consumption-based taxes has more than offset the decline. VAT

<sup>13</sup> Easterly and Rebelo (1993), using cross-section data for 1970–88, found that the revenue share of taxes on international trade is negatively related to population even when controlling for income and trade share. Using data for 2004, Borg (2006) also finds the proportion of trade taxes is negatively related to country size.

<sup>14</sup> SACU customs revenue is redistributed among all the SACU member states, including South Africa.

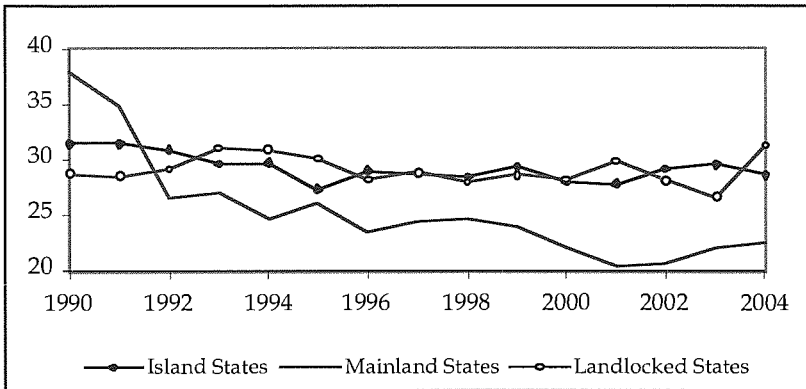
<sup>15</sup> For estimates of the impact of trade preference erosion on Caribbean countries' fiscal balances, see IMF (2007): Chapter III.

**Figure 5**  
**Revenues and Grants in Small and Large States (1990-2005)**  
(Percent of GDP, Averages)



Source: National Authorities and IMF staff estimates

**Figure 6**  
**International Trade Taxes for Small States (1990-2004)**  
(Percent of Total Revenue, Averages)



Source: National Authorities and IMF staff estimates

has been implemented in Pacific islands, such as Fiji, Papua New Guinea, and Samoa; some Caribbean islands, such as Antigua and Barbuda, Barbados, Dominica, and St Vincent and the Grenadines; and in several small states in Africa, such as Cape Verde, Botswana, and Gabon.

Reflecting their greater openness and reliance on aid, small states have higher external grants than the large countries, though grants have declined. Some islands in the Pacific received very large amounts of grants; for 2000-04 grants averaged about 45 percent of GDP in Micronesia, 12 percent in the Solomon Islands and 11 percent in Samoa. Other low-income or lower middle-income small states that received a substantial amount in grants were Bhutan, Cape Verde, and Guinea

Bissau. Nevertheless, since 1990 there has been an overall decline in grants to small states, particularly to several Pacific island states and African countries, such as Cape Verde, Comoros, and Lesotho.

### *Fiscal Balances*

As measured by the primary balance, fiscal policies have on average been more expansionary in small states than in large countries (Figure 7). If interest payments are included, however, large countries have larger fiscal deficits. The primary balance, excluding interest payments, is a better measure of the government's fiscal effort than the overall fiscal balance because interest payments are predetermined by the level of borrowing from previous years.

For many small states, particularly in Asia Pacific and the Western Hemisphere, the worsening in the primary balance came in conjunction with a slowdown in growth for the late 1990s through 2001, though this also impacted large countries (Figure 8). The fiscal position of both groups has improved since 2002.

Among small states that witnessed a more pronounced deterioration in their primary balance positions starting in about 2000 were Bhutan, Fiji, the Maldives, Solomon Islands and Vanuatu in Asia Pacific; Antigua and Barbuda, Belize, Grenada, St Kitts and Nevis, St Lucia, and Suriname in the Western Hemisphere; and Cape Verde, Comoros, Guinea Bissau, Mauritius, Namibia, São Tomé and Príncipe and Swaziland in Africa.

### *Public Debt*

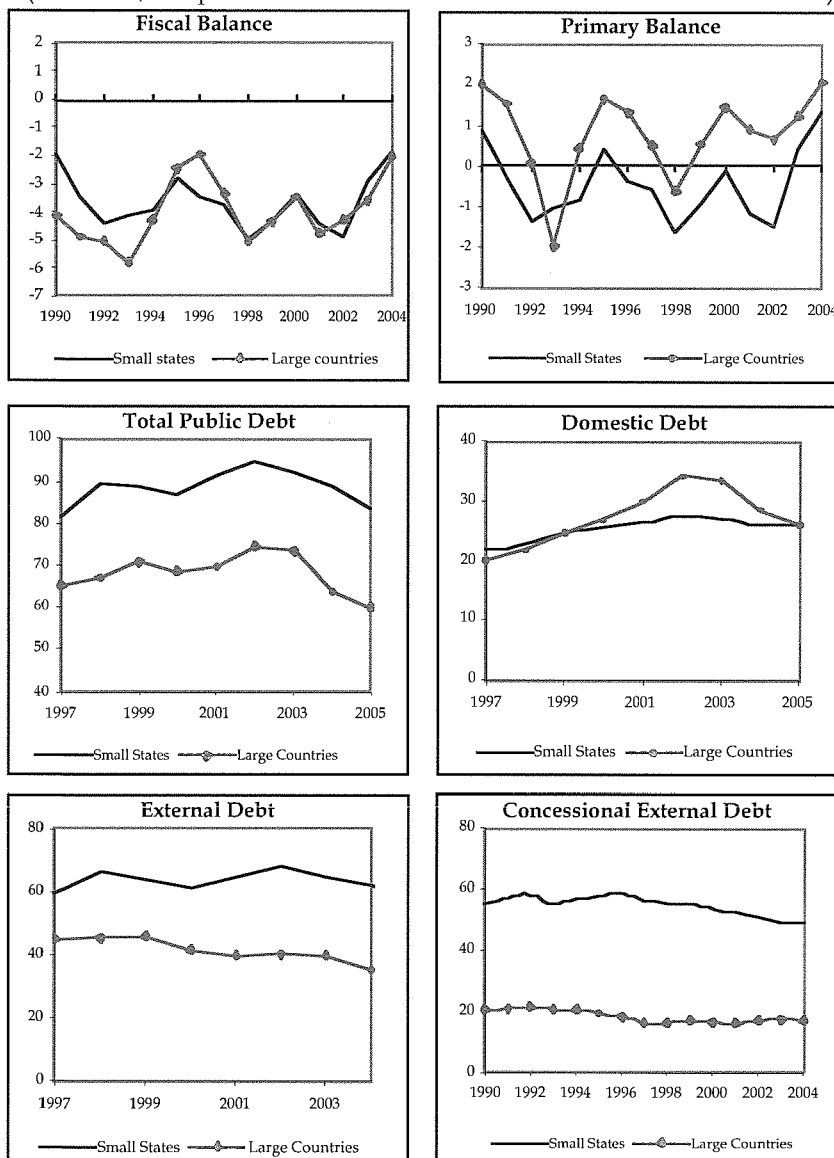
As a consequence of persistent fiscal deficits and to some degree poorer growth, small states have accumulated higher public debt than large states in the sample. Debt above 50 to 60 percent of GDP is generally considered high.<sup>16</sup> In 2005 average debt for small states stood at about 84 percent of GDP, after peaking at 95 percent in 2002. For 2000–04, 13 small states had very high debt of over 90 percent of GDP, and 15 had high debt (Table 3).<sup>17</sup> For those with relatively low public debt, half have benefited from revenues from minerals or oil (Bahrain, Botswana, Equatorial Guinea, Namibia, Qatar and Trinidad and Tobago), and one (Micronesia) receives a very high amount of external grants.

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<sup>16</sup> Eastern Caribbean Currency Union and euro-area countries aim to have public debt no higher than 60 percent of GDP. Sahay (2005) classifies Caribbean country public debt as low to medium if debt is below 50 percent of GDP, high if it is between 50 and 90 percent, and very high if it is above 90 percent. This study adopts this classification.

<sup>17</sup> Bhutan's external debt mostly reflects debt from India to develop hydropower stations (electricity is exported to India), rather than fiscal deficits.

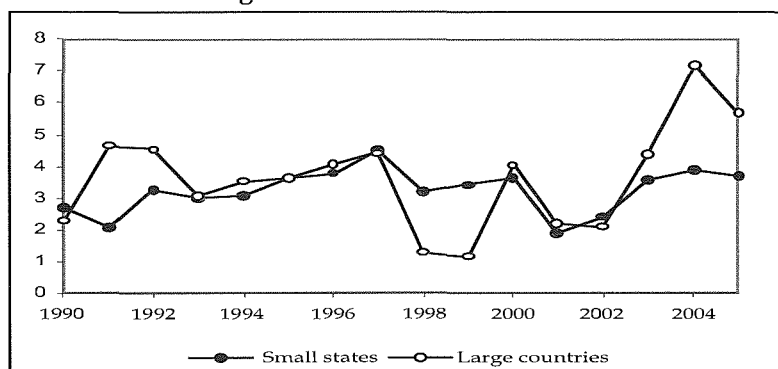
**Figure 7**  
**Fiscal Indicators for Small and Large States**  
 (% of GDP, except for Concessional Debt which is % of Total External Debt)



Source: National Authorities and IMF staff estimates

Estimates for domestic debt reveal that small states on average have a substantial and slightly growing amount of domestic debt, about 26 percent of GDP in 2005, similar to levels in large states. Due to a lack of data on domestic debt, domestic debt-to-GDP ratios for most countries

**Figure 8**  
**Average Real GDP Growth: 1990-2005**



Source: IMF staff estimates

are calculated as a residual: total public debt-to-GDP minus total external debt-to-GDP. Thus, domestic debt ratios are only estimates and may sometimes reflect valuation effects due to exchange rate movements, since public debt is generally quoted in domestic currency and external debt in US dollars. Several small African states have seen domestic debt rise since 1990, among them Cape Verde, Djibouti, Gambia, Mauritius and Seychelles. Domestic debt also rose in Pacific Island states, such as Fiji, Solomon Islands and Tonga; and in several Caribbean countries, for instance, Antigua and Barbuda, Barbados, Jamaica, and St Kitts and Nevis.

Compared to large states, small states in general had more external debt. Within the small states, low-income and African countries tend to have very high external debt levels, for example, Comoros, Gambia, Guinea Bissau and São Tomé and Príncipe, which are all highly indebted poor countries (HIPC). However, some middle-income African countries (Cape Verde, Djibouti and Seychelles) also have substantial external debt, as do several Caribbean countries, such as Antigua and Barbuda, Belize, Dominica, Grenada, Guyana (another HIPC case) and St Lucia. Since 1990 some Asia Pacific countries, including Bhutan and the Solomon Islands, have also seen external debt rise.

Though since 1990 the average concessionality of total external debt has declined for low and middle-income states that are small, it is still significantly higher than for all low and middle-income countries.<sup>18</sup>

<sup>18</sup> This is according to World Bank data. Total external debt also includes private as well as public external debt, although private external debt is limited for small states. Data on debt concessionality was unavailable for Antigua and Barbuda, Namibia and Suriname.



**Table 3**  
**Total Public Debt Levels in Small States**  
 (Percent of GDP, average 2000–04)

<b>Low to Medium Debt : (0% to 50%)</b>	<b>High Debt (50% to 90%)</b>	<b>Very High Debt (More than 90%)</b>
The Bahamas	Barbados	Antigua and Barbuda
Bahrain	Bhutan	Belize
Botswana	Cape Verde	Comoros
Equatorial Guinea	Djibouti	Cyprus
Estonia	Gabon	Dominica
Fiji	Grenada	Gambia
Maldives	Lesotho	Guinea Bissau
Micronesia	Malta	Guyana
Namibia	Mauritius	Jamaica
Qatar	Papua New Guinea	São Tomé and Príncipe
Slovenia	Samoa	Seychelles
Swaziland	St Lucia	Solomon Islands
Trinidad and Tobago	St Vincent/Grenadines	St Kitts and Nevis
Vanuatu	Suriname	
	Tonga	

Source: IMF staff calculations based on data from national authorities

#### 4. Empirical Evidence

The higher spending and debt of small states, discussed above, suggests there should be a negative relationship between country size and size of government, and between country size and levels of public and external debt. This section lays out some groundwork empirical analysis to test the robustness of these propositions and examine the role of several factors highlighted in Section 2 in determining the size of government and the amount of public debt, with a focus on government size and debt.

The modelling follows Alesina and Wacziarg (1998) but uses more recent data and focuses more on small states.<sup>19</sup> We use total government expenditure and the economic classification of expenditure subcategories to measure the size of government. We also extend the approach by introducing public debt as a dependent variable.<sup>20</sup> The country sample consists of both large and small developing countries (see Appendix, Tables A1 and A2) but the focus is on small states.

Table A4 (in Appendix) describes summary statistics for all variables used in the analysis for 2000–04, with averages used for most of the

<sup>19</sup> Alesina and Wacziarg (1998) reveal a negative relationship between the size of government and the size of a country.

<sup>20</sup> The model specification does not take into account the hypothesis that country size and fiscal outcomes may be simultaneously determined.

fiscal variables. For the cross-sectional specifications, OLS regressions are presented for 2000-04.<sup>21</sup> Because heteroskedasticity is suspected in the error term of the equations, robust standard errors were used to calculate the t-statistics.<sup>22</sup>

### *The Size of Government*

OLS regressions are presented for various measures of government size on the log of population (Table 4). Population size is found to be significantly negatively correlated with government expenditure and all its components. This relationship is further confirmed in the scatter plot diagram (Figure 9).

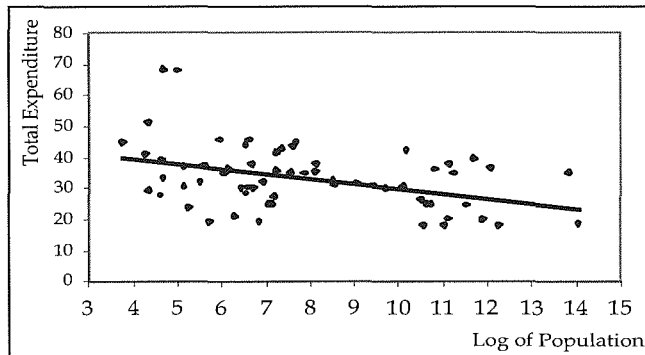
**Table 4**  
**Simple OLS Regressions for the Size of Government, 2000-04**

	Total Expenditure	Capital Expenditure	Wages and Salaries	Goods and Services
Log population	-1.62 (3.39)***	-0.78 (3.74)***	-0.80 (5.40)***	-0.58 (2.71)***
Constant	46.14 (10.78)***	12.93 (6.19)***	15.64 (11.46)***	10.38 (5.11)***
Observations	67	67	63	56
R-squared	0.17	0.16	0.29	0.11

Absolute value of t statistics in parentheses

\* significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%

**Figure 9**  
**Total Government Expenditure as Percent of GDP and Population**



<sup>21</sup> Five-year averages were used to eliminate the impact of the business cycle. OLS regressions were also run for 1990-94, 1995-99, and 1997-04. See Medina Cas and Ota (2008) for the full results.

<sup>22</sup> Breusch-Pagan tests revealed the presence of heteroskedasticity in the variance of the error terms. To correct this, the Eicker-White method, or robust standard errors, was utilised to recalculate the t-statistics.

**Table 5**  
**Correlation Matrix**

	LP	LPD	LPI	GVN	TOT	ERD	TRO
Log of population	1.00						
Log of population density	-0.02	1.00					
Log of per capita income	-0.27	0.06	1.00				
Governance	-0.18	0.14	0.68	1.00			
Change in terms of trade	0.11	-0.10	0.03	-0.35	1.00		
Exchange rate dummy	-0.69	0.05	0.20	0.13	0.06	1.00	
Trade openness	-0.55	0.14	0.19	0.26	0.03	0.38	1.00

Note: The terms of trade and exchange rate variables will be used in the debt regressions

Additional control variables were considered to augment the OLS regressions in order to produce more robust results. These are:

- population density since this can impact the size of government as higher congestion may raise the cost of some public goods and services, lead to market failures and environmental pressures. However, a more geographically disperse population may raise the cost of delivery of some government services.
- per-capita income because higher GDP per capita, or more developed economies, tend to have greater levels of expenditure and revenues as a share of output (Wagner's law).
- government effectiveness (governance index) because this may lead to lower public expenditures.
- trade openness (measured as imports and exports of goods and services over GDP) since openness and vulnerability to external shocks may require a larger government to provide a stabilising role in the economy.

A correlation check on these control variables was undertaken in order to avoid multicollinearity. The results are presented in the correlation matrix shown as Table 5. Trade openness and population appear to be highly negatively correlated, so we decided to drop trade openness as a control variable. Because governance and per-capita income are highly positively correlated, only governance was used in the equations. Governance is generally acknowledged to support successful economic development; in other words an improvement in governance tends to raise per-capita income.

When the additional independent variables were included in the regression, only governance was found to be significantly negatively related, and this only with capital expenditure, indicating that better governance leads to lower levels of capital spending, most likely due to more efficient use of public resources (Table 6).

**Table 6**  
**Determinants of Size of Government**  
 (OLS Regressions for 2000–04)

	Total Expenditure	Capital Expenditure	Wages and Salaries	Goods and Services
Log of population	-2.24 (3.43)***	-1.01 (3.80)***	-0.55 (2.04)**	-1.00 (2.09)**
Governance	-1.05 (0.51)	-2.14 (2.45)**	0.53 (0.76)	0.39 (0.49)
Constant	46.44 (10.33)***	13.55 (6.24)***	15.51 (10.80)***	10.24 (4.92)***
Observations	66	66	62	55
R-squared	0.18	0.22	0.30	0.10

Absolute value of t statistics in parentheses

\* significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%

### *Public and External Debt*

Table 7 presents OLS regressions of public and external debt with respect to population size. The correlation is negative, but not statistically significant. This relationship is also presented as a scatter diagram (Figure 10), which shows that there are a few outliers.

In order to investigate what other factors may be important in determining levels of public and external debt, we add more independent variables to the OLS regressions. These are:

- a dummy variable equal to one is included if a country has a de facto fixed exchange rate regime in order to determine whether a fixed exchange rate regime worsens or improves the fiscal stance.<sup>23</sup>
- the change in terms of trade of goods and services since a deterioration in the terms of trade of goods and services, or a negative terms of trade shock, would worsen the fiscal stance and raise debt by lowering government revenues.
- population density as this may raise the cost of public goods and lead to more government borrowing, and thus higher public debt.
- the index of government effectiveness or governance because better use of public resources and better government policies that enhance resilience may lead to less over borrowing and debt.

<sup>23</sup> This has been done by Tornell and Velasco (2000), Alberola and Molina (2004) and Duttagupta and Tolosa (2006). A de facto fixed exchange rate regime is defined as a monetary policy that uses an exchange rate anchor; this can range from an exchange rate arrangement with no separate legal tender (a monetary union) to a crawling peg.

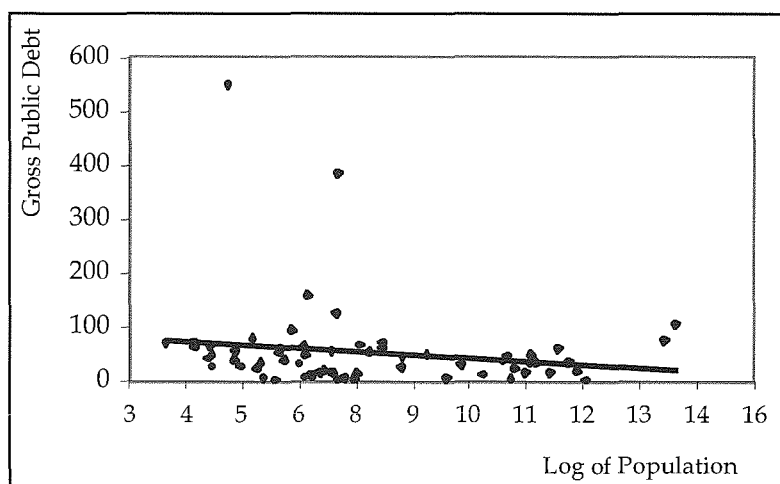
**Table 7**  
**Simple OLS Regressions for Public and External Debt, 2000-04**

	Gross Public Debt	External Public Debt
Log population	-5.29 (1.52)	-5.17 (1.43)
Constant	125.77 (3.59)***	95.60 (2.65)**
Observations	67	66
R-squared	0.03	0.03

Absolute value of t statistics in parentheses

\*\* significant at 5%; \*\*\* significant at 1%

**Figure 10**  
**Correlation between Public Debt and Population**



As can be observed in the correlation matrix (Table 5) most of these variables are not correlated. Only the exchange rate regime dummy is highly negatively correlated with population due to the fact that smaller states tend to have fixed exchange rate regimes.

The OLS estimation results with the significant independent variables display evidence of a negative relation between country size and gross public and external public debt in 2000-04 (Table 8), though the relationship is not as robust as that between country size and size of government. Population density was not a significant determinant of public and external debt, so it was dropped from the regression. The coefficients on governance are negative and significant implying that higher governance scores are linked to reduced levels of both public and external debt.

**Table 8**  
**Determinants of Gross Public and External Debt**  
 (OLS Regressions for 2000–04)

	Gross Public Debt	External Public Debt
Log of population	-18.08 (2.13)**	-16.41 (1.72)*
Governance	-57.42 (2.70)***	-63.03 (2.72)***
Change in terms of trade	-5.12 (2.56)**	-4.67 (2.11)**
Exchange rate dummy	-77.25 (1.75)*	-66.38 (1.32)
Constant	280.00 (2.86)***	230.32 (2.08)**
Observations	63	62
R-squared	0.42	0.39

Absolute value of t statistics in parentheses.

\* significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%

There is some evidence that a fixed exchange rate regime is associated with lower public debt, thus supporting the traditional view that a fixed rate regime can increase fiscal discipline. However, the sample is biased toward small states that have fixed regimes.

The coefficients on the change in the terms of trade are negative and significant suggesting a worsening in the terms of trade may have led to higher public and external debt.<sup>24</sup>

## 5. Policy Considerations for Fiscal Adjustment and Resilience

As confirmed by the empirical analysis, small states tend to have relatively bigger governments and there is some evidence that they also tend to suffer from comparatively high public and external debt. Although small states have certain structural characteristics that explain their higher spending and public debt, this section first argues that fiscal adjustment for many small states will help them withstand their inherent economic vulnerability and build economic resilience by lowering high public debt. We then discuss how a large fiscal adjustment can enhance their economic growth rates, and thus, also resilience. Finally, we put forth measures that support fiscal adjustment and resilience building in small states, such as expenditure cuts, revenue preservation and governance improvements.

<sup>24</sup> Many small states, particularly Caribbean ones, suffered a negative terms of trade shock with the erosion of trade preferences during the 2000–04 period.

### *Withstanding Vulnerability*

Fiscal adjustment in small states can enhance their economic resilience by correcting their weaker fiscal positions and help them withstand their economic vulnerability resulting from their susceptibility to shocks. Low public debt and a sound fiscal position builds resilience by giving policymakers flexibility to respond countercyclically to shocks or downturns (Daniel et al., 2006). Expansionary fiscal policy may also exacerbate economic volatility by, for example, causing bouts of fiscal expansion and contraction. A large government is not a prerequisite for countercyclical fiscal policy, because it is the impact of the change in government spending and taxes on aggregate demand that helps to stabilise the economy.

Numerous small countries need to reduce their public debt to ensure debt sustainability, though the fact that they borrow more externally on concessional terms at lower interest rates than large countries may make their somewhat higher public debt more sustainable. However, any slowdown in growth rates, caused for example by the continued unwinding of preferential trade access for small states, will have a negative impact on their debt dynamics. The higher concessionality of the debt of small states also implies that the present value of debt should also be used in targeting public debt ratios.

It is important that small states attempt to support economic resilience by minimising fiscal rigidities so that fiscal policy is adaptable enough to respond effectively to shocks. Examples of fiscal rigidities that some small states may be particularly vulnerable to are high public employment that raises the wage bill; revenues earmarked for certain expenditures, such as a big capital project; and a large proportion of non-discretionary expenditure, such as entitlement programmes.

Often fiscal adjustment is more important than monetary policy when small states respond to changes in output. As monetary policy options are limited because most small states have a fixed exchange rate regime, fiscal policy is one of the few tools available to them to respond countercyclically to shocks. The effectiveness of monetary policy is further limited in small open states with no capital controls because domestic interest rates are largely determined by world interest rates.

### *Growth Support*

Fiscal adjustment can also build economic resilience and help small states recover from negative external shocks through growth support, crowding in investment and reducing uncertainty. Fiscal discipline can

help reverse the crowding out of private investment and help spur private-sector-led growth in many small states. This can be important because in small states the public sector tends to have a larger economic role. It is important to promote private investment for economic and export diversification in small states, which in turn can help mitigate their vulnerability to shocks. Loose fiscal policy can also harm economic growth if it leads to, for example, unsustainably high debt and creates investor uncertainty about how the situation will be rectified.

Furthermore, there is some evidence that growth is higher in small states with smaller government and lower public debt (Figure 11). Since about 1993, high-growth small states on average have had lower revenues and grants, lower expenditures, stronger fiscal balances and lower public debt than medium-growth and low-growth small states.<sup>25</sup> These high-growth small states would be more economically resilient to negative external shocks, in part due to their more favourable fiscal positions.

There is evidence that a fiscal adjustment, especially a large one, may have an expansionary impact on the economy due to improvements in private investment and consumption (Tsibouris et al., 2006). Expansionary fiscal contractions have been found to be particularly connected with high-debt countries because the risk premium on interest rates declines and confidence rises when the government default risk is lower and there is less probability that taxes will go up (Perotti, 1999).

A study of episodes of large fiscal adjustment in small states confirms that in most cases, growth actually rose (Table 9). An episode of large fiscal adjustment is defined as occurring when the average primary balance as a percent of GDP for a three-year period was at least 10 percentage points of GDP greater than the average primary balance for the previous three-year period.<sup>26</sup>

To limit the impact of exogenous events, adjustment episodes involving oil exporters were excluded starting in 1999 when oil prices began to rise. During the period examined, 1990 to 2004, there were 12 episodes involving nine small states.<sup>27</sup> In 67 percent of the episodes of large fiscal

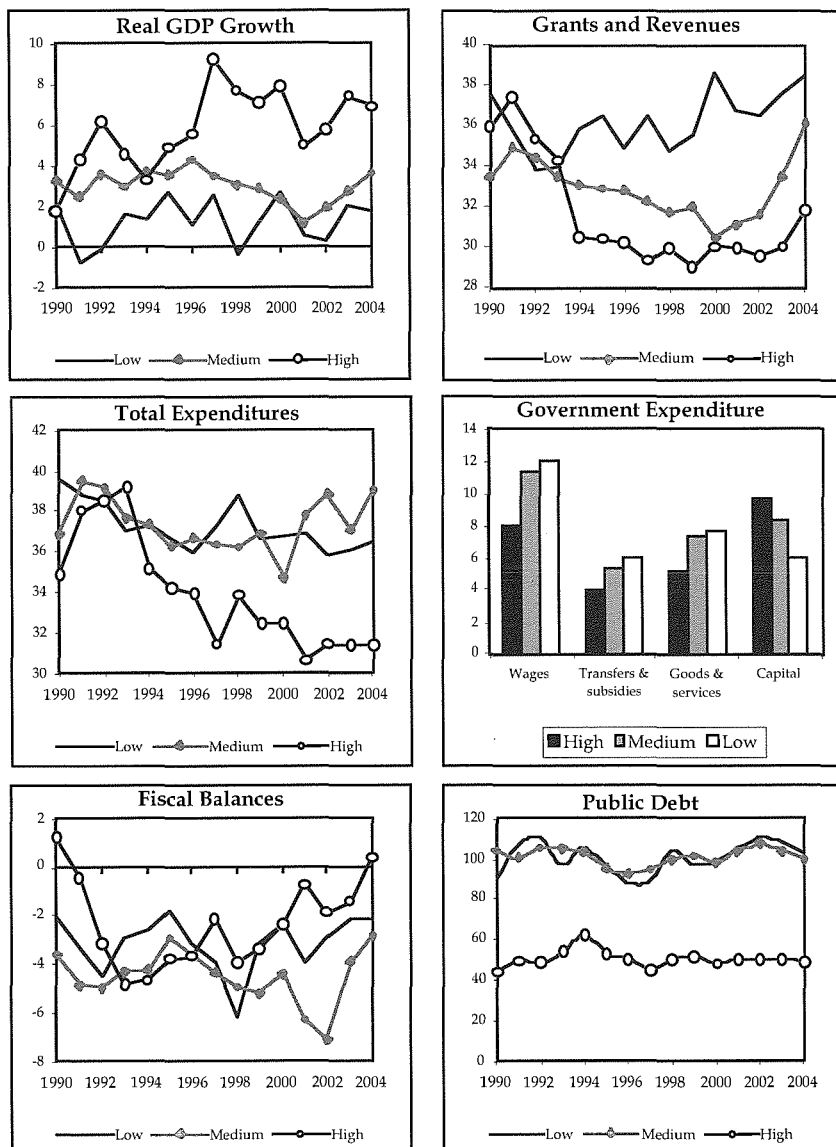
<sup>25</sup> High-growth small states in the sample are defined as the 10 countries that enjoyed the highest growth rates on average from 1990 to 2005. Low-growth small states are the 10 countries that had the lowest average growth rates from 1990 to 2005. The other 22 states in the middle are medium-growth small states. The high-growth states are Bahrain, Belize, Bhutan, Botswana, Cape Verde, Equatorial Guinea, Maldives, Mauritius, Qatar, and Trinidad and Tobago. The low-growth states are the Bahamas, Barbados, Comoros, Djibouti, Dominica, Gabon, Guinea Bissau, Jamaica, Micronesia and Slovenia. The medium-growth states are all the rest.

<sup>26</sup> Two of the episodes were for two-year periods.

<sup>27</sup> See Appendix, Table A5, for a list of countries that experienced large fiscal adjustments, with more details about the episodes.



**Figure 11**  
**Growth and Fiscal Indicators (1990-2004) for**  
**Low-Growth, Medium-Growth and High-Growth Small States**  
 (Percent of GDP)



Source: National Authorities and IMF staff estimates

Note: The growth rate of high-growth small states excludes Equatorial Guinea due to large data swings.

**Table 9**  
**Episodes of Large Fiscal Adjustment in Small States**  
 (Percent of GDP, unless otherwise indicated)

	Primary Balance	Fiscal Balance	Revenue	Expend- iture	Growth (%)
Average	-0.6	-4.3	41.7	46.1	3.5
Median	0.3	-1.0	42.2	45.4	4.2
Average change	12.1	12.5	2.6	-9.9	1.3
Median change	11.4	12.1	3.4	-6.5	0.7
<b>Percentage of Large Fiscal Adjustment cases (out of 12 cases)</b>					
Where primary and fiscal balances improved	Where revenues rose	Where expenditure fell	Where growth rose		
100%	59%	92%	67%		

Source: IMF staff estimates

adjustment, economic growth increased and the average change in growth was 1.3 percent. In fact, in only one episode was average growth negative.<sup>28</sup> Fiscal adjustment is often part of a comprehensive reform effort. In some cases, changes in the political and social environment and structural reforms may have also impacted the growth outcome.<sup>29</sup>

#### *Adjustment and Resilience Measures*

The most effective way to achieve fiscal adjustment is to reduce spending. The majority of episodes of large fiscal adjustment in small states involved hefty expenditure cuts in both current and capital spending; a rise in revenue was less frequent and less pronounced in magnitude. Moreover, there is evidence that curtailing current spending, especially transfers and subsidies, while maintaining capital spending, supports more sustainable and durable adjustments (Daniel et al., 2006). Small states should also save by combining overlapping functions of government and carefully prioritising expenditures.

The small-state fiscal data also suggests that reducing current expenditures in goods and services, transfers and subsidies, and wages is associated with higher growth and greater resilience. High-growth small states tended to have lower spending in these three categories and higher capital spending than medium and low-growth small states (see Figure 11). Nonetheless, caution should be used in assessing

<sup>28</sup> This was for Seychelles during 2003-04, a period which coincided with the Indian Ocean tsunami at the end of 2004.

<sup>29</sup> For example, during 2003-04 in the Solomon Islands, the fiscal adjustment episode coincided with an improvement in the security situation which had a positive impact on the large pick-up in growth.

employment levels in small states since they also reflect the absence of economies of scale. The need for appropriate social safety nets for the vulnerable when implementing fiscal adjustment should also be considered.

The relatively lower revenues in high-growth small states compared to other small states cautions against raising revenues too much to achieve fiscal adjustment unless revenues are particularly low. Nonetheless, as part of prudent fiscal policy, small states need to monitor sources of revenues carefully and broaden the tax base. The trend over the last few years has been toward gradual liberalisation of international trade and a reduction in tariffs, which has been reflected in a decline in international trade tax revenues for small states. In order to maintain revenue, many small states need to strengthen administrative capacity and implement further domestic tax system reforms, such as relying more on VAT, sales tax, and a low flat tax on imports.

Small states can also overcome some of their size constraints in the delivery of certain government services—while at the same time also cutting spending—by enhancing regional cooperation with other small states or larger neighbours (Briguglio, Persaud, and Stern, 2006). This allows small states to pool the fixed costs of providing public goods and services. Examples of such regional arrangements are the Eastern Caribbean Central Bank, the Eastern Caribbean Telecommunications Authority and the air traffic control system in the Pacific.

The empirical results presented in this paper suggest that improving government effectiveness may also help small states reduce public and external debt and thus support fiscal adjustment and greater economic resilience. This means that many small states should strive to improve their institutional capacity to devise and implement government policies and improve the quality of public services and the civil service. Weaknesses in the delivery of government services, combined with the fact that small states tend to have larger governments, may well lead to over borrowing and higher public debt in small states. Measures that enhance policy credibility, such as increasing the accountability of the government to fiscal targets, regular publication of economic data and improving transparency, should also help raise government effectiveness.

Technical assistance can improve governance by increasing the capacity of government to formulate and execute policies to enhance resilience, such as those related to fiscal adjustment. Many small emerging-market and developing states require technical assistance from the international community to help raise the skills of the public labour force and address the limited institutional capacity resulting from small size and outward

migration. It can also aid reforms to boost transparency and the quality of economic data in small states.

## 6. Conclusion

This study shows that government current and capital expenditures and revenues, as well as public debt tend to be larger in small states compared to larger countries. Within current spending, goods and services and wages and salaries are also higher in small states. Small states are likely to have large governments due to higher input costs and the inability to reap the benefits of economies of scale in providing public goods and services. Small states have worse primary balance positions than large states, which, when compounded by lower growth, contributes also to higher public debt. The tendency for small states to have higher external public debt is also a sign of their openness; as they are more reliant on foreign capital because domestic markets are limited.

Empirically, the analysis confirms the findings of Alesina and Wacziarg (1998) that government size has a significant negative correlation with country size, and also uncovers certain evidence of a negative correlation between country size and total public and external debt. Future research could usefully investigate whether this negative relationship between country size and debt can be extended to a larger sample of developing and emerging-market countries.

In terms of policy implications, first we argue that fiscal adjustment can help small states withstand their inherent vulnerability and second, we find, like Perotti (1999) and Tsibouris et al. (2006), that a large adjustment can support their growth especially when embedded in an economic reform programme. While there are structural factors that explain the fact that small states have bigger governments and higher debt ratios, a healthy fiscal position, including low debt, will give policymakers the flexibility to react effectively to shocks and so build economic resilience.

We find there is some proof that small states that have relatively smaller governments and lower public debt tend to grow faster and are thus also more resilient to negative shocks. By crowding in private sector investment, fiscal adjustment can thus be growth-supportive in small states, especially if implemented through cuts in current primary spending rather than revenue increases. Moreover, given the limitations on monetary policy that arise because most small states have fixed exchange rate regimes, fiscal policy is crucial to underpinning economic resilience because it is one of the few policy options they have to respond countercyclically to economic downturns and shocks.

This study also presents new evidence linking governance effectiveness with lower public and external debt. In this way, improving government effectiveness can usefully support fiscal adjustment and build economic resilience in small states. Controlling the size and cost of government can make government more efficient and more effective in achieving its principal functions in the delivery of goods and services.

This study's initial findings uphold the traditional view that fiscal discipline tends to underpin the credibility of the fixed exchange rate regimes. The regression results show that a fixed exchange rate regime is correlated with lower public debt in our sample of countries. As long as the regime is well designed, a fixed exchange rate can underpin growth and reduce transaction costs. In any case, neither a fixed nor a flexible exchange rate regime should be used to address the fiscal imbalances and high public debt many small states have – these should be addressed primarily through fiscal adjustment.

## References

- Alesina, A. and Spolaore, E. (2003). *The Size of Nations*. Cambridge, Massachusetts: MIT Press.
- Alesina, A. and Wacziarg, R. (1998). "Openness, Country Size and Government," *Journal of Public Economics*, Vol. 69: 305-21.
- Alberola, E. and Molina, L. (2004). "What Does really Discipline Fiscal Policy in Emerging Markets? The Role and Dynamics of Exchange Rate Regimes," *Banco de España Working Paper No. 0402*. Madrid.
- Armstrong, H.W. and Read, R. (1998). "Trade and Growth in Small States: The Impact of Global Trade Liberalisation," *World Economy*, Vol. 21: 563-85.
- Atkins, J., Mazzi, S., Easter, C. (2000). "Commonwealth Vulnerability Index for Developing Countries: The Position of Small States" *Economic Paper, No 40*. London: Commonwealth Secretariat.
- Borg, M. (2006). "Taxation Structures in Small States with Special Reference to Revenue Implications following Trade Liberalisation," *Bank of Valletta Review*, No. 34: 1-18.
- Brautigam, D., and Woolcock, M. (2001). "The Role of Institutions in Managing Vulnerability and Opportunity in Small Developing Countries. Small States in a Global Economy," *Discussion Paper No. 2001/07*. Helsinki: United Nations University/WIDER.
- Briguglio, L., Cordina, G., Farrugia, N. and Vella, S. (2006). "Conceptualising and Measuring Economic Resilience." In Briguglio, L., Cordina, G. and Kisanga, E. (eds) *Building the Economic Resilience of Small States*. Malta: Islands and Small States Institute in collaboration with the Commonwealth Secretariat: 265-288.

- Briguglio, L., Persaud, B. and Stern, R. (2006). *Toward An Outward Oriented Development Strategy for Small States: Issues, Opportunities and Resilience-Building*. London: Commonwealth Secretariat in collaboration with the World Bank.
- Briguglio, L. and Galea, W. (2003) "Updating and Augmenting the Economic Vulnerability Index." *Occasional Paper No. 2003-04*, Malta: Islands and Small States Institute, University of Malta.
- Browne, C. (2006). *Pacific Island Economies*. Washington DC: IMF.
- Daniel, J. , Davis, J., Fouad, M. and Van Rijckeghem, C. (2006). "Fiscal Adjustment for Stability and Growth." *IMF Pamphlet Series, No. 55*, Washington DC: IMF.
- Dodhia, D. (2005). "The Emerging Debt Problems of Small States." In Commonwealth Secretariat, *A Preliminary Paper to the Commonwealth Finance Ministers' Meeting*. London: Commonwealth Secretariat.
- Duttagupta, R. and Guillermo T. (2006). "Fiscal Discipline and Exchange Rate Regimes: Evidence from the Caribbean." *IMF Working Paper 06/119*, Washington DC: IMF.
- Easterly, W. and Rebelo, S. (1993). "Fiscal Policy and Economic Growth," *Journal of Monetary Economics*, Vol. 32: 417–58.
- Easterly W., and Kraay, A. (2000). "Small States, Small Problems? Income, Growth and Volatility in Small States," *World Development*, Vol. 28: 2013–27.
- International Monetary Fund (2007). "Caribbean – Selected Regional Issues: Background Paper," *SM/07/320*, Washington DC: IMF.
- International Monetary Fund (2003). "World Economic Outlook, September 2003: Public Debt in Emerging Markets." *World Economic and Financial Surveys*. Washington DC: IMF.
- Kaufmann, D., Kraay, A. and Mastruzzi, M. (2006). "Governance Matters V: Aggregate and Individual Governance Indicators for 1996-2005," *World Bank Policy Research Department Paper No. 4012*. Washington DC: World Bank.
- Medina Cas, S. and Ota, R. (2008). "Big Government, High Debt, and Fiscal Adjustment in Small States." *IMF Working Paper 08/39*, Washington DC: IMF.
- Perotti, R. (1999). "Fiscal Policy in Good Times and Bad," *Quarterly Journal of Economics*, Vol. 114 (4): 1399–1436.
- Rodrik, D. (1996). "Why do More Open Economies Have Bigger Governments?" *NBER Working Paper 5537*, Cambridge, Massachusetts: National Bureau of Economic Research.
- Sahay, R. (2005). "Stabilization, Debt and Fiscal Policy in the Caribbean." *IMF Working Paper 05/26*. Washington DC: IMF.
- Sahay, R., Robinson, D. and Cashin, P. (2006). *The Caribbean: From Vulnerability to Sustained Growth*. Washington DC: IMF.
- Sun, Y. (2003). "Do Fixed Exchange Rates Induce More Fiscal Discipline." *IMF Working Paper, No. 03/78*. Washington DC: IMF.

- Tornell, A. and Velasco, A. (2000). "Fixed Versus Flexible Exchange Rates: Which Provides More Fiscal Discipline?" *Journal of Monetary Economics*, Vol. 45: 399– 436.
- Tsibouris, G. C., Horton, M.A., Flanagan, M.J. and Maliszewski, W.S. (2006). "Experience with Large Fiscal Adjustments." *IMF Occasional Paper No. 246*, Washington DC: IMF.
- Vella, S. (2005). "Exchange Rate Strategies for Small Island Developing States," *Bank of Valletta Review*, No. 32: 1-10
- Winters, L.A. and Martins, P.M.G. (2004). *Beautiful but Costly: Business Costs in Small Remote Economies*. London: Commonwealth Secretariat.

**Table A1**  
**List of Small Countries**

Country	Region	Income level (2005)	Indebtedness (2005)	Geography	Population (Millions)	Official Exchange Rate Regime (mid-2005)	
						Type	Details
Antigua & Barbuda	WH	upper middle income	less	island	0.08	monetary union	ECCU, peg to US\$
Bahamas, The	WH	high income	less	island	0.32	fixed	peg to US\$
Bahrain, Kingdom of	ME	high income	less	island	0.78	fixed	peg to US\$
Barbados	WH	upper middle income	less	island	0.27	fixed	peg to US\$
Belize	WH	upper middle income	severely	mainland	0.26	fixed	peg to US\$
Bhutan	AP	lower middle income	severely	landlocked	0.75	fixed	peg to Indian rupee
Botswana	AFR	upper middle income	less	landlocked	1.59	fixed	peg to basket
Cape Verde	AFR	lower middle income	moderately	island	0.47	fixed	fixed peg to euro
Comoros	AFR	low income	severely	HIPC island	0.59	fixed	peg to euro
Cyprus	EUR	high income	less	island	0.83	fixed	peg to euro, ERM2+/-15% bands
Djibouti	AFR	lower middle income	less	mainland	0.78	fixed	peg to US\$
Dominica	WH	upper middle income	severely	island	0.07	monetary union	ECCU, peg to US\$
Equatorial Guinea	AFR	upper middle income	less	mainland	1.11	monetary union	CEMAC, peg to euro
Estonia	EUR	upper middle income	severely	mainland	1.35	fixed	peg to euro
Fiji	AP	lower middle income	less	island	0.85	fixed	peg to basket
Gabon	AFR	upper middle income	severely	mainland	1.33	monetary union	CEMAC, peg to euro
Gambia	AFR	low income	severely	HIPC mainland	1.47	managed float	ERM2 of WAMZ +/-15% bands
Grenada	WH	upper middle income	severely	island	0.10	monetary union	ECCU, peg to US\$
Guinea Bissau	AFR	low income	severely	HIPC mainland	1.54	monetary union	WAEMU, peg to euro
Guyana	WH	lower middle income	severely	HIPC mainland	0.75	managed float	
Jamaica	WH	lower middle income	moderately	island	2.69	managed float	
Lesotho	AFR	low income	less	landlocked	2.32	fixed	peg to South African rand
Maldives	AP	lower middle income	less	island	0.32	fixed	peg to US\$
Malta	EUR	high income	less	island	0.39	fixed	peg to basket, mostly euro
Mauritius	AFR	upper middle income	moderately	island	1.23	managed float	
Micronesia	AP	lower middle income	less	island	0.11	monetary union	US\$ is legal tender
Namibia	AFR	lower middle income	less	mainland	2.01	fixed	peg to South African rand

Source: IMF and World Bank

(continued next page)



**Table A1 (continued)**  
**List of Small Countries**

Country	Region	Income level (2005)	Indebtedness (2005)	Geography	Population (Millions)	Official Exchange Rate Regime (mid-2005) Type	Details
Papua New Guinea	AP	low income	moderately		island	5.76	independently floating
Qatar	ME	high income	less	mainland	0.76	fixed	peg to US\$
Samoa	AP	lower middle income	severely	island	0.18	fixed	peg to basket, +/-2% bands
São Tomé & Príncipe	AFR	low income	severely	HIPC island	0.16	managed float	
Seychelles	AFR	upper middle income	severely	island	0.08	fixed	peg to basket
Slovenia	EUR	high income	less	mainland	2.00	fixed	ERM2 of EMU +/-15% bands
Solomon Islands	AP	low income	moderately		island	0.47	fixed peg to basket
St Kitts and Nevis	WH	upper middle income	severely	island	0.04	monetary union	ECCU, peg to US\$
St Lucia	WH	upper middle income	moderately		island	0.16	monetary union ECCU, peg to US\$
St Vincent & Grens.	WH	upper middle income	moderately		island	0.12	monetary union ECCU, peg to US\$
Suriname	WH	lower middle income	less	mainland	0.50	managed float	previously peg before mid-2004
Swaziland	AFR	lower middle income	less	landlocked	1.09	fixed	peg to South African rand
Tonga	AP	lower middle income	less	island	0.10	fixed	peg to basket
Trinidad & Tobago	WH	upper middle income	less	island	1.29	fixed	peg to US\$
Vanuatu	AP	lower middle income	less	island	0.21	fixed	adjustable peg

Source: IMF and World Bank

**Table A2**  
**List of Large Countries**

Country	Region	Income level (2005)	Indebtedness (2005)	Geography	Population (Millions)	Official Exchange Rate Regime (mid-2005)
Argentina	WH	upper middle income	severely	mainland	38.37	managed float
Bolivia	WH	lower middle income	moderately	HIPC landlocked	9.01	fixed
Brazil	WH	lower middle income	severely	mainland	183.91	float
China, P.R.: Mainland	AP	lower middle income	less	mainland	1307.99	fixed
Colombia	WH	lower middle income	moderately	mainland	44.92	float
Côte d'Ivoire	AFR	low income	severely	HIPC mainland	17.87	fixed
Ecuador	WH	lower middle income	severely	mainland	13.04	fixed
Egypt	ME	lower middle income	less	mainland	72.64	managed float
India	AP	low income	less	mainland	1087.12	managed float
Indonesia	AP	lower middle income	severely	island	220.08	managed float
Jordan	ME	lower middle income	severely	mainland	5.56	fixed
Lebanon	ME	upper middle income	severely	mainland	3.54	fixed
Mexico	WH	upper middle income	less	mainland	105.70	float
Nigeria	AFR	low income	moderately	mainland	128.71	managed float
Pakistan	ME	low income	moderately	mainland	154.79	managed float
Peru	WH	lower middle income	severely	mainland	27.56	managed float
Philippines	AP	lower middle income	moderately	island	81.62	float
Poland	EUR	upper middle income	moderately	mainland	38.56	float
Russia	EUR	upper middle income	moderately	mainland	143.90	managed float
South Africa	AFR	upper middle income	less	mainland	47.21	float
Thailand	AP	lower middle income	less	mainland	63.69	managed float
Turkey	EUR	upper middle income	severely	mainland	72.22	float
Ukraine	EUR	lower middle income	less	mainland	46.99	fixed
Uruguay	WH	upper middle income	severely	mainland	3.44	float
Venezuela, R.P.	WH	upper middle income	moderately	mainland	26.28	fixed

Source: IMF and World Bank

**Table A3**  
**The Size of Government and Public Debt in Small States**  
 (Percent of GDP; average 2000-2004)

	Total Expenditure	Expenditure Subcategories				Public Debt*
		Capital	Wages & Salaries	Goods & Services	Transfers & Subsidies	
Antigua and Barbuda	29.4	3.7	11.9	6.0	3.4	129.7
Bahamas, The	19.5	2.4	9.3	4.1	1.8	33.5
Bahrain, Kingdom of	28.6	6.3	13.8	4.4	2.7	32.8
Barbados	37.3	5.5	12.3	3.9	10.8	83.4
Belize	32.1	11.6	9.4	3.6	1.5	90.6
Bhutan	43.5	23.9	7.3	9.0	2.3	67.0
Botswana	38.3	10.2	9.6	n.a.	n.a.	7.0
Cape Verde	35.5	11.8	10.6	1.0	6.6	89.7
Comoros	21.2	4.8	7.8	4.9	1.2	95.5
Cyprus	38.0	3.7	9.8	3.0	7.6	102.9
Djibouti	30.4	4.8	14.3	7.0	3.9	84.9
Dominica	41.3	9.3	15.6	5.2	5.7	112.7
Equatorial Guinea	19.4	9.4	1.5	1.4	1.4	19.1
Estonia	35.9	3.1	7.5	13.5	11.5	5.3
Fiji	30.3	5.2	11.8	4.3	4.5	47.4
Gabon	25.1	3.9	6.2	4.0	3.8	65.5
Gambia	27.6	9.7	5.1	4.2	2.5	226.9
Grenada	36.6	13.6	10.7	3.9	4.5	87.6
Guinea Bissau	41.6	13.5	8.6	4.7	4.2	385.4
Guyana	45.8	12.5	11.3	7.3	7.1	185.4
Jamaica	35.7	2.1	11.8	n.a.	n.a.	127.2
Lesotho	45.0	9.0	14.3	19.3	6.9	87.7
Maldives	37.1	12.2	6.5	17.4	0.4	44.0
Malta	45.9	5.6	n.a.	n.a.	n.a.	85.5
Mauritius	25.1	4.0	6.5	2.1	8.4	72.5
Micronesia	68.4	11.5	24.8	27.4	3.7	32.6
Namibia	35.0	4.4	15.1	6.2	6.0	26.9
Papua New Guinea	31.9	9.7	9.3	5.3	1.8	66.5
Qatar	30.2	5.5	7.5	n.a.	n.a.	46.6
Samoa	37.2	13.5	8.6	n.a.	n.a.	59.8
São Tomé & Príncipe	68.0	31.1	8.3	7.4	6.1	297.6
Seychelles	51.3	7.1	14.5	9.9	12.5	181.7
Slovenia	43.8	2.5	9.4	7.7	19.1	28.5
Solomon Island	35.2	10.0	10.1	5.7	2.2	99.4
St Kitts and Nevis	44.9	10.8	15.1	8.8	3.7	160.3
St Lucia	29.3	7.7	11.0	3.9	4.4	55.7
St Vincent & Grens.	33.2	6.2	13.9	6.0	4.5	71.1
Suriname	36.6	3.3	13.9	10.5	6.5	59.5
Swaziland	32.2	7.1	11.5	7.6	4.8	21.7
Tonga	28	1.7	12.3	8.4	2.2	67.4
Trinidad and Tobago	25.0	1.8	7.1	3.0	9.0	31.8
Vanuatu	24.1	4.0	11.5	4.6	2.4	38.6

Sources: National authorities, and IMF staff estimates

\* In Botswana, Comoros, Equatorial Guinea, Guinea Bissau, and São Tomé there was no domestic debt data, so total public debt equals total external public debt.

**Table A4**  
**Summary Statistics and Sources for the Data<sup>1</sup>**

Description	No.	Mean	StdDev.	Min	Max	Source
Log of population (2000)	67	7.88	2.61	3.74	14.06	IMF
Log of per capita income (2000)	67	-6.14	1.09	-8.75	-3.56	IMF
Log of population density (2000)	67	3.99	1.58	0.14	7.15	IMF
Governance (2002)	66	-0.07	0.65	-1.42	1.38	World Bank
Trade openness (2000) <sup>2</sup>	67	93.88	41.26	27.94	200.53	IMF/World Bank
Change in terms of trade	64	1.10	5.44	-6.94	28.21	IMF
Dummy exchange rates <sup>3</sup>	67	...	...	...	...	IMF
Total expenditure <sup>2</sup>	67	33.38	10.15	18.10	68.41	IMF
Capital expenditure <sup>2</sup>	67	6.78	5.16	1.00	31.06	IMF
Wages and salaries <sup>2</sup>	63	9.40	3.83	1.25	24.85	IMF
Goods and services <sup>2</sup>	56	5.88	4.71	0.75	27.37	IMF
Gross public debt <sup>2</sup>	67	84.06	79.80	5.33	550.23	IMF
External public debt <sup>2</sup>	66	55.03	80.88	3.09	550.23	IMF/World Bank

<sup>1</sup> Five-year averages (2000–2004) unless otherwise noted.

<sup>2</sup> As a percentage of GDP.

<sup>3</sup> For de facto exchange rate regime

**Table A5**  
**Episodes of Large Fiscal Adjustment in Small States**  
(Period Averages in Percent of GDP, unless otherwise Indicated)

Country	Years	Primary Balance	Fiscal Balance	Revenue & Grants	Total Expenditure	Capital	Wages & Salaries	Transfers & Subsidies	Goods & Services	Growth % Annual
Cape Verde	2002-04	0.5	-2.1	31.1	33.2	12.0	11.2	4.7	1.2	4.8
Previous Period	1999-01	-10.4	-12.2	27.2	39.4	12.5	9.7	8.2	0.9	8.4
GuineaBissau	1994-96	-1.1	-7.4	25.8	33.2	16.8	2.0	2.3	3.8	3.8
Previous Period	1991-93	-12.5	-17.9	28.0	45.9	26.0	4.0	1.9	5.1	2.7
Malta	1997-99	-1.3	-2.4	45.1	47.5	7.2	n.a	n.a	n.a	4.1
Previous Period	1994-96	-11.8	-14.6	33.3	47.9	7.1	n.a	n.a	n.a	5.2
Malta	1998-00	3.0	-0.2	45.3	45.5	6.8	n.a	n.a	n.a	5.8
Previous Period	1995-97	-9.4	-12.3	35.7	47.9	7.1	n.a	n.a	n.a	5.3
Micronesia	2002-04	4.3	3.6	67.7	64.1	9.7	25.2	3.4	25.0	0.8
Previous Period	1999-01	-7.0	-8.4	69.8	78.2	16.1	24.8	4.3	31.6	2.0
Samoa	1994-96	-0.2	-1.1	44.3	45.4	16.6	11.6	n.a	n.a	6.7
Previous Period	1991-93	-15.2	-16.7	57.0	73.7	29.7	10.9	n.a	n.a	1.1
Samoa	1995-97	2.7	1.9	41.6	39.7	14.6	10.6	n.a	n.a	4.9
Previous Period	1992-94	-12.3	-13.6	53.1	66.6	25.5	11.7	n.a	n.a	4.1
São Tomé/Príncipe	1997-99	-16.0	-27.7	38.8	66.5	38.6	5.0	3.1	3.5	2.0
Previous Period	1994-96	-26.5	-37.5	35.9	73.4	46.0	1.7	3.3	3.6	1.9
São Tomé/Príncipe	1998-00	-9.1	-19.2	34.4	53.6	26.9	5.8	2.3	3.7	2.3
Previous Period	1995-97	-21.0	-32.1	40.1	72.2	45.8	2.3	4.0	3.5	1.5
Seychelles	2003-04	8.6	1.2	49.9	48.7	3.3	14.9	11.9	11.2	-4.2
Previous Period	2001-02	-6.6	-14.0	39.1	53.1	7.6	14.2	13.3	9.6	-0.5
Solomon Islands	2003-04	0.2	2.7	42.8	40.1	16.7	8.1	2.5	6.9	7.2
Previous Period	2001 02	9.5	11.8	21.2	33.0	6.0	11.3	1.6	5.0	-5.3
Suriname	2001-03	1.5	-1.0	34.2	35.2	3.0	14.2	6.9	8.1	4.3
Previous Period	1998-00	-9.9	-10.8	29.4	40.2	7.3	14.0	5.9	11.7	0.2

Source: National Authorities and IMF Staff Estimates