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Big Government, High Debt, and Fiscal Adjustment in Small States

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African Department

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Abstract

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Using a new fiscal dataset for small states, this paper analyzes 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. Large fiscal adjustments, primarily through expenditure restraint, can underpin growth, although sometimes other elements can also impact. Since better governance is associated with lower debt, fiscal adjustment should be supported by governance improvements.

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I. INTRODUCTION

Certain fiscal characteristics of small states can affect the implementation of sound policies. In providing public services, small states face higher per capita costs because there are limited 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 overhead 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 erosion of trade preferences and to shocks (Dodhia, 2005). 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 and others, 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 reduce the vulnerabilities stemming from high public debt and economic volatility. 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 shocks. The study presents certain evidence that drastic fiscal adjustment can support growth in small states, although in some cases socio-political changes can also impact the growth outcome. 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 there is a significant negative correlation between country size and size of government. They also provide some new evidence of an inverse relationship between country size and the amount of both public debt and external public debt in our small-state and large-country samples. Small states tend to have higher government spending on goods and services, wages and salaries, and capital investment. 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.

Section II defines small states, reviews their fiscal indicators, and compares them to those of large countries. Section III presents characteristics of small states that explain high government spending and, to a degree, high public debt. Section IV lays out some groundwork empirical analysis of the link between government size, debt, and country size. Section V expounds policy considerations and measures for fiscal adjustment in small states. Finally, section VI brings it all together to share recommendations.

II. FISCAL ASPECTS OF SMALL STATES: STYLIZED FACTS

A. Definition of Small and Large States

Small states in this paper are defined as developing and emerging-market countries that have a population of about two million or less.² We add Jamaica and Papua New Guinea, because, although they have higher populations, they 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 back in 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 found to rank countries in much the same way as population data, which are more readily available.)³ This study therefore 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.⁴ Of the 42, 26 are islands and 4 are landlocked.

A large country is generally 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; the majority are 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, was readily available from the Fiscal Affairs Department and is usually difficult to obtain.

B. The Fiscal Dataset

For the small states, the main source for revenue and expenditure data, which are not readily available, was country economists and IMF staff reports.⁵ Most of the small states report data for the central government only, although because they are small the data are more likely to capture the bulk of fiscal activity than similar data for a large country. Small European states did report fiscal data on a general government basis, except for Cyprus. One of the main innovations of this study is that it uses a detailed breakdown of government expenditures by economic classification.⁶

² The classification as developing and emerging-market country was largely based on the IMF *World Economic Outlook* classification from 2006, the time when we initiated the study.

³ There is no single definition of a small state. Studies have used different population thresholds and any particular one will be somewhat arbitrary. No definition, whether it use population, economic or geographic size will be fully acceptable. In reality, there is a continuous range with some countries larger than the chosen threshold sharing some characteristics of small states.

⁴ See Appendix I for a detailed overview of small states and large countries.

⁵ Data from country economists was collected in the first half of 2006; they may since have been revised.

⁶ It was virtually impossible to find expenditure data by functional classification for all the small states from 1990 through 2004.

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.⁷ For many small states, public sector debt is not reported for as far back as 1990, so an attempt was made in a few cases to reconstruct the data by summing domestic debt to external public debt, because information on external public debt is much more readily available. Data on domestic debt for most small states is difficult to obtain, so it has been estimated as a residual by subtracting external debt from total public debt. The resulting public sector debt dataset still has substantial gaps, however, especially in the early 1990s.

C. Fiscal Indicators

In comparing fiscal indicators from the small-state sample to the large-country one, it soon becomes clear that small states tend to have higher expenditure, weaker primary balances, and higher public debt.

Expenditures

Small states tend to have bigger governments than large countries, as measured by both average total expenditure and most expenditure subcategories (Figure 1).⁸ In 2004 total expenditures in small states were about 37 percent of GDP on average; 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.⁹ 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 Micronesia were about 70 percent of GDP and in the Seychelles about 51 percent (Appendix II, Table A3). At the low end, total expenditures in 2000–2004 were only about 20 percent of GDP in the Bahamas

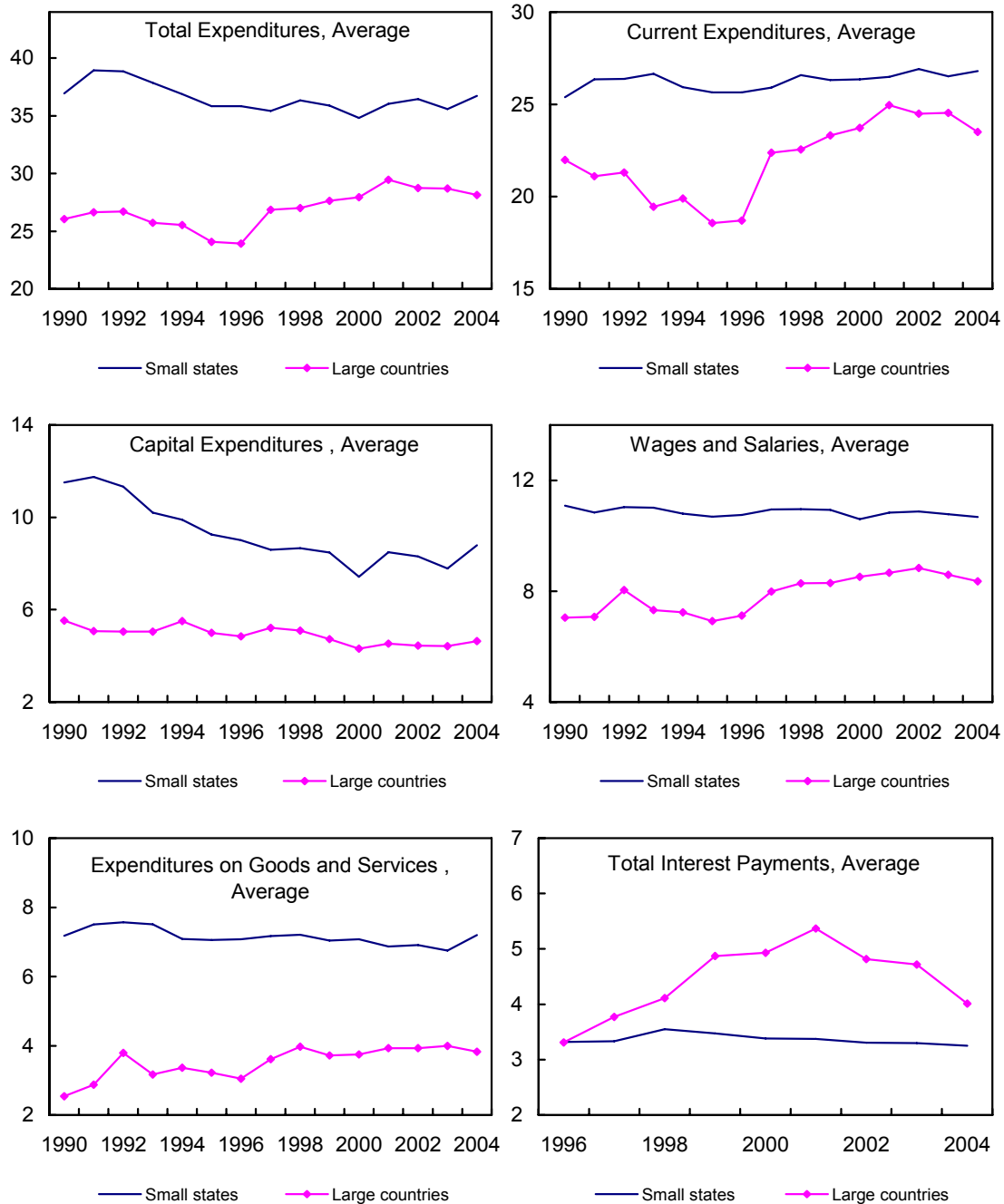
⁷ Due to different national definitions of the public sector, and the various sources used to collect the data, there are some definitional fiscal data issues, especially with the public debt data. However, this problem is not unique to this cross-country study (see IMF, 2003).

⁸ This is true no matter whether averages or medians are used in the comparisons.

⁹ No data on the breakdown of transfers and subsidies for the 25 larger countries were available, although the overall expenditure data does include transfers and subsidies.

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

Figure 1. Expenditures for Small and Large States, 1990-2004
(Percent of GDP)

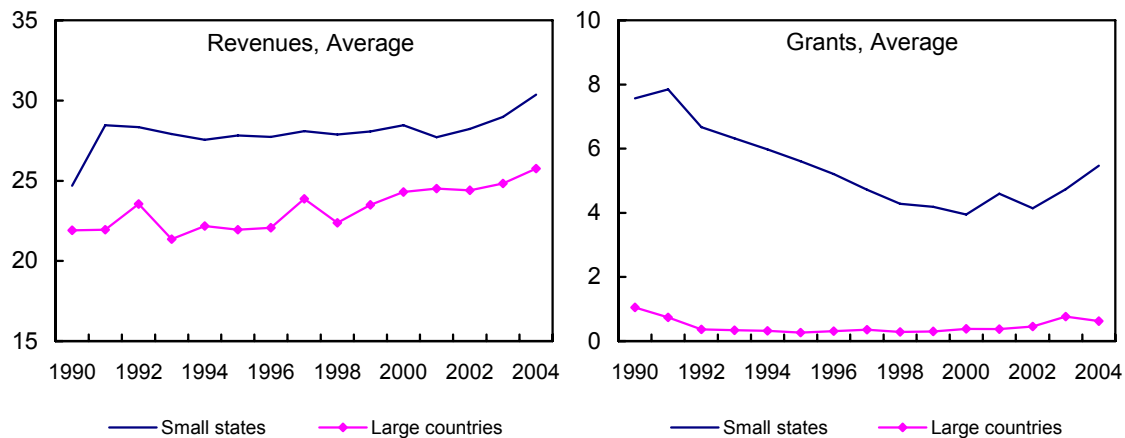


Source: National Authorities and IMF staff estimates.

Revenues

Revenues in small states have trended up since 2001, and on average they have higher revenues and grants than large states, in part due to the revenue shares from customs or international trade taxes (Figure 2).¹⁰ Small states with particularly substantial revenues are Gabon (largely due to oil revenues), Seychelles, and Malta. Island states, which are the smallest states on average, obtained more revenues from international trade taxes than mainland small states (Figure 3). 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).¹¹

Figure 2. Revenues and Grants in Small and Large States, 1990-2004
(Percent of GDP)

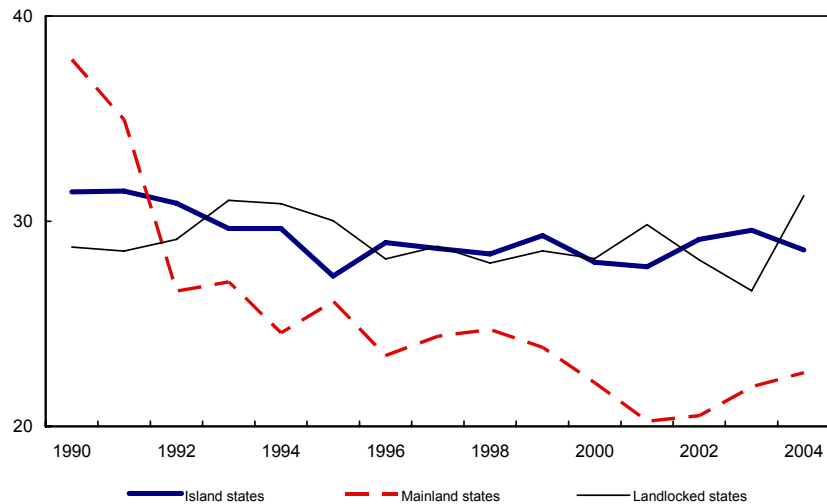


Source: National Authorities and IMF staff estimates.

¹⁰ 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.

¹¹ SACU customs revenue is redistributed among all the SACU member states, including South Africa.

Figure 3. International Trade Taxes for Small States, 1990–2004
(Percent of total revenue, averages)



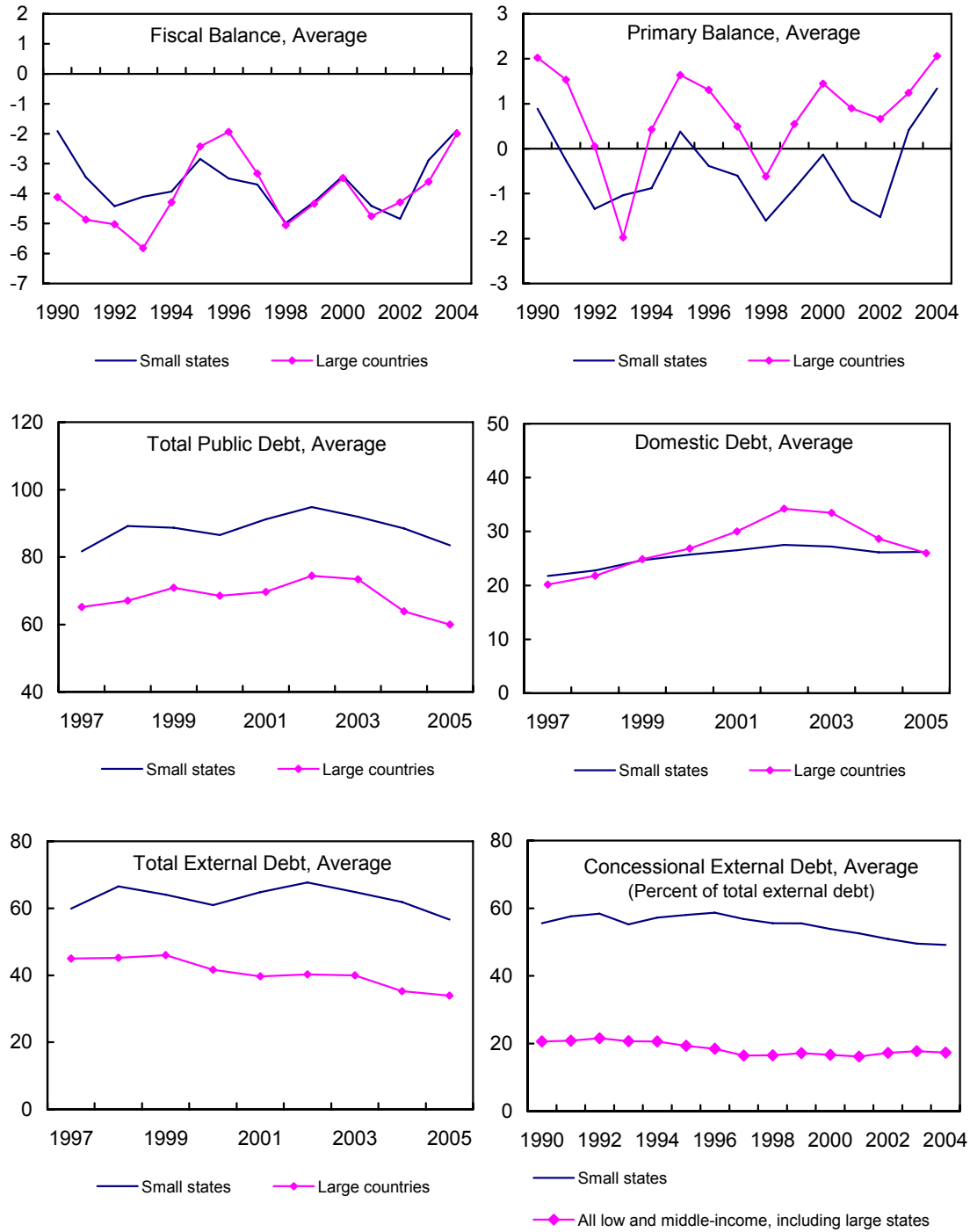
Source: National Authorities and IMF staff estimates.

However, the share of revenue from international trade taxes for small states has been declining since 1990 with ongoing world trade liberalization,¹² though in many small states the introduction of VAT and consumption-based taxes has more than offset the decline. To illustrate, a VAT 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 2000–2004 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.

¹² For estimates of the impact of trade preference erosion on Caribbean countries' fiscal balances, see Chapter III of *Caribbean—Selected Regional Issues: Background Paper*, SM/07/320.

Figure 4. Fiscal Indicators in Small and Large States, 1990–2005
(Percent of GDP)



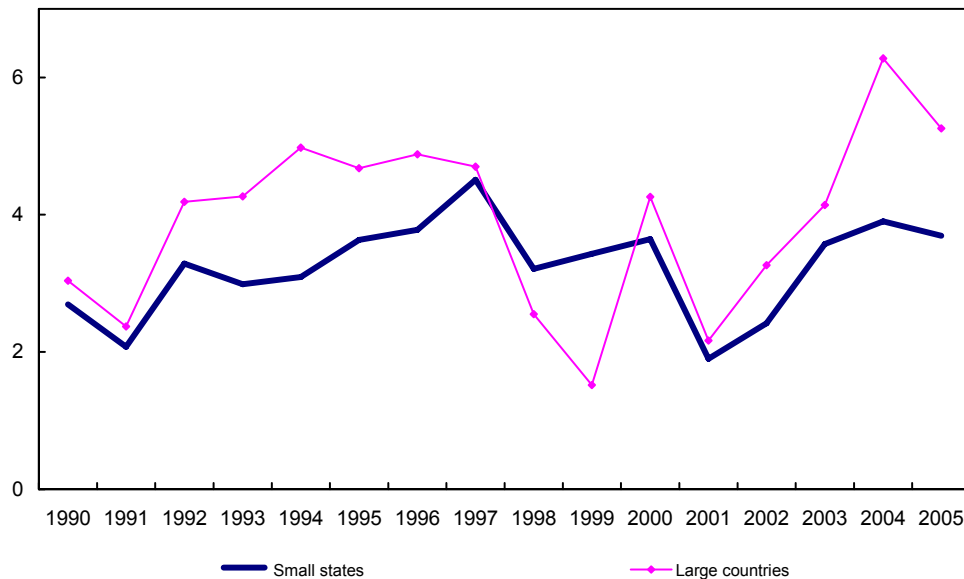
Source: National Authorities, World Bank, and IMF staff estimates.

Fiscal Balances

As measured by the primary balance, fiscal policies have on average been more expansionary in small states than in large (Figure 4).¹³ If interest payments are included, however, large countries have larger fiscal deficits. 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 5). 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.

Figure 5. Average Real GDP Growth,¹1990–2005



Source: IMF staff estimates

¹³ The primary balance, which excludes 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.

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.¹⁴ 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 1).¹⁵ 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.

Table 1. Total Public Debt Levels in Small States
(Percent of GDP, average 2000–04)

Low to Medium Debt (0% to 50%)	High Debt (50% to 90%)	Very High Debt (More than 90%)
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 and the Grenadines	St. Kitts and Nevis
Vanuatu	Suriname	
	Tonga	

Source: IMF staff calculations based on data from national authorities.

¹⁴ 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 that classification.

¹⁵ Bhutan's external debt mostly reflects debt from India to develop hydropower stations (electricity is exported to India), rather than fiscal deficits.

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.¹⁶ 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 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.¹⁷ This implies that for small states the present value of public external debt is likely to have risen.¹⁸

III. FACTORS THAT EXPLAIN BIG GOVERNMENT AND HIGH PUBLIC DEBT

Why in recent years do many small states tend to spend more and have weaker primary balances and more public debt than large states? In reviewing the literature this section shows that these fiscal challenges principally reflect limited economies of scale, remoteness, lack of economic and export diversification, a high degree of openness, volatility, governance issues, and possibly the exchange rate regime.

A. Remoteness and Limited Economies of Scale

Remoteness and limited economies of scales in small states help explain their higher cost structure, which raises government expenditures and can impact public debt. Many small

¹⁶ Due to a lack of data on domestic debt, domestic debt-to-GDP ratios for most countries 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 U.S. dollars.

¹⁷ 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 the high-income small states of Antigua and Barbuda, Micronesia, Namibia, and Suriname.

¹⁸ Data on the net present value of public external debt and total public debt for all small states was unavailable.

states, particularly in Africa and the Pacific, are located 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 and keeps the economy isolated.

Higher input costs and the absence of economies of scale in the provision of public goods and services explain why small states tend to have 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)¹⁹. Table 2 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 2. Cost Disadvantages of Very Small and Small States¹

(percentage deviation of costs in very small and small economies from those in the median economy)

Area of Cost	Very small	Small
Airfreight average	4.1	-1.7
Seafreight average	70.5	9.1
Telephone average (marginal costs)	47.2	9.0
Electricity (marginal costs)	47.0	9.4
Water (marginal costs)	0.0	0.0
Fuel average	28.3	5.9
Personal air travel average	56.8	11.0
Land rent average	-17.2	-8.9

Source: Winters and Martins, 2004, "Beautiful but Costly: Business Costs in Small Remote Economies."

¹ A very small country refers to one with a population of 200 000, and small to a country with no more than 4 million population. The median for a population is 10 million.

B. Lack of Economic and Export Diversification

Many small states have little economic and export diversification. This can raise the size of government because they are particularly vulnerable to commodity or weather-related shocks. Limited economic and export diversification stems from fewer human and capital resources and small domestic markets. UNCTAD publishes a concentration index for exports by country with values ranking from 0 to 1, the latter indicating maximum concentration.²⁰

¹⁹ 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 dispersed population may raise the cost of delivering some government services. We control for population density in the empirical analysis.

²⁰ See <http://stats.unctad.org/handbook>.

For small states in 2003, the export concentration index was 0.41, compared to 0.24 for all developing countries.

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 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. However, some small European states, such as Cyprus and Malta, have more diversified economies.

Narrow human resources in small states, often accentuated by “brain drain,” tends to limit capacity in both public and private sectors; this can inflate wages because skilled (and sometimes also semiskilled) labor is scarcer (Table 3).²¹ Brain drain occurs when professional staff with important technical skills migrate, perhaps because of political and social unrest in the country or simply because there are better professional opportunities in developed countries. This can make providing specialized 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.

Table 3. Wage Disadvantages of Very Small and Small States¹
(Percentage deviation of costs in very small and small economies from those in the median economy)

Area of Cost	Very small	Small
Unskilled wages average	31.6	6.6
Semi-skilled wages average	12.1	2.6
Skilled wages average	20.3	4.3

Source: Winters and Martins, 2004, “Beautiful but Costly: Business Costs in Small Remote Economies.”

¹ A very small country refers to one with a population of 200 000, and small to a country with no more than 4 million population. The median for population is 10 million.

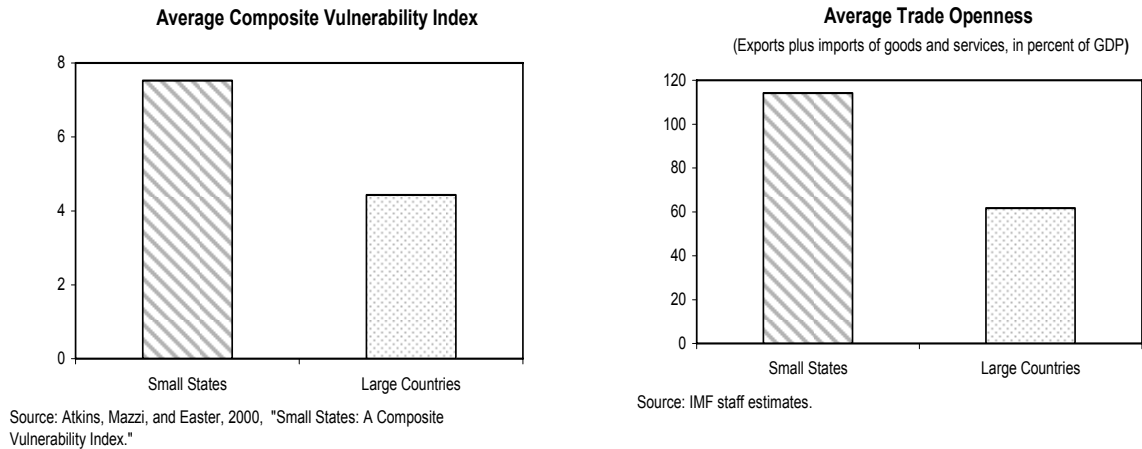
C. High Degree of Openness

Small states tend to be far more open, as reflected in a high ratio of external trade to GDP and in their reliance on foreign capital and investment. Openness results from the fact that while small states tend to *produce* a narrow range of goods and services, they *use* a wide variety. 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

²¹ Winters and Martins (2004) find a significant population effect on nominal dollar wages; in other words, wages tend to be higher in smaller countries, even after controlling for income level.

shocks (Figure 6). This vulnerability is further accentuated by the limited diversification of small-state economies.

Figure 6. Vulnerability and Trade Openness in Small States



D. Greater Output Volatility

Output in small states is more volatile due to the compounding of certain characteristics:²² (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;²³ and (iii) natural disasters can impact the whole country rather than a single area.²⁴ 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 localized recession or natural disaster would benefit from fiscal transfers from the rest of the country.²⁵

²² Easterly and Kraay (2000) find 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.

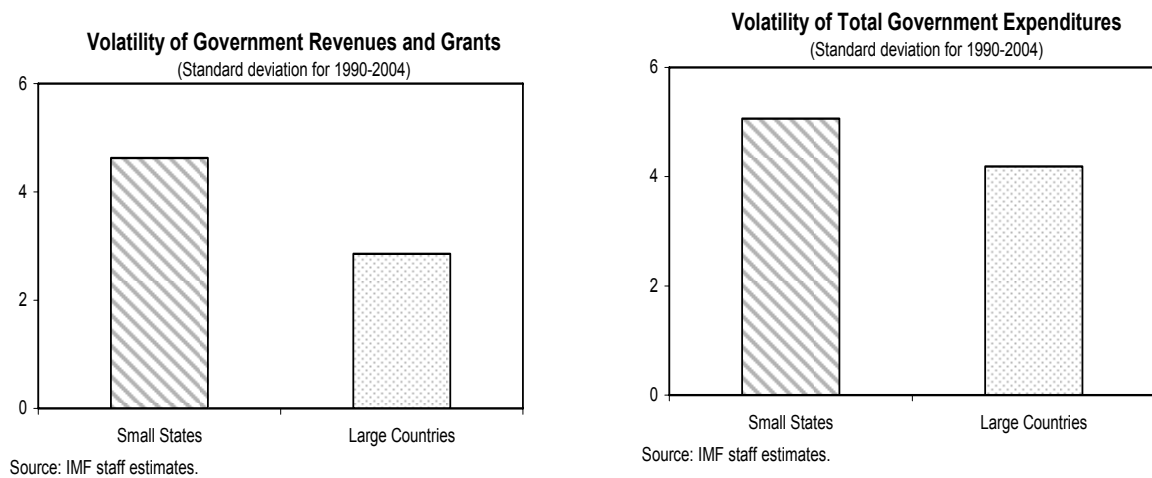
²³ Shocks can be both positive and negative, though in both cases they raise output volatility.

²⁴ Still, some small states such as Tonga and the Solomon Islands are collections of islands where the productive base is spread across a relatively large geographic area, so when a natural disaster hits, the impact can also be isolated to a subsection of the economy

²⁵ Alesina and Spolaore (2003) refer to this as regional "insurance."

A composite vulnerability index (CVI) summarizes factors that contribute to the greater output volatility of small states compared to larger ones (Figure 6).²⁶ Since vulnerability is linked to output volatility, the CVI estimates output volatility based on economic exposure to the rest of the world, remoteness, and susceptibility to environmental events and hazards. The CVI ranks 111 developing countries—of the 35 most vulnerable, 31 are small (Appendix III, Table A5). The degree of vulnerability is independent of income level—most small states are middle- or upper-income. Vanuatu is estimated to be most vulnerable, reflecting frequent natural disasters, in particular cyclones and volcanic activity. Antigua and Barbuda, Tonga, and Botswana are also among the most vulnerable due to high output volatility, susceptibility to natural disasters, and concentration of exports.

Figure 7. Fiscal Volatility in Small States



The higher economic volatility in small states leads to more volatility in government revenues and expenditures than in large countries (Figure 7), even though these larger emerging-market countries 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. More volatility in government revenue and expenditure in small states can lead to a more volatile fiscal balance that further reinforces macroeconomic instability.

²⁶ See Atkins, Mazzi, and Easter (2000) for more details on the construction of the CVI Index. A higher CVI score means the country is more vulnerable. These authors model the CVI as follows:

$$\text{Outvol}_i = \beta_0 + \beta_1 \text{Vuln}_i D_i + \beta_2 \text{Exdep}_i + \beta_3 \text{Div}_i + \varepsilon_i$$

where Outvol_i is output volatility, $\text{Vuln}_i D_i$ is vulnerability to natural disasters, Exdep_i is export dependence of goods and services, Div_i is UNCTAD's merchandise export diversification index (a higher value indicates a higher concentration of exports), ε_i is the error term, and $i=1, \dots, N$, and N is the number of countries in the sample.

E. 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).

Bräutigam and Woolcock (2001) find 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.

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. Figure 8 shows the World Bank’s governance indicator on government effectiveness with higher values corresponding to better governance.²⁷ Government effectiveness reflects the capacity of government to formulate and implement policies. 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.

Transparency can support the fiscal adjustment required in many small states by creating wider public support and understanding of government policies (Daniel and others, 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 globalized 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 grants, which are particularly substantial for small states, particularly for those in Africa and the Pacific that have worse governance.

²⁷ The indicators are constructed using an unobserved components methodology and surveys described in detail by Kaufmann, Kraay and Mastruzzi (2005). The indicators are subject to a standard error, so precise country rankings should not be inferred from the data.

Because internal markets are small, monopolies, including public ones, tend to be more common in small states, which can lead to abuse and corruption. Greater political centralization 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.

F. Exchange Rate Regime

One striking feature common to 35 of the 42 small states is a fixed exchange rate regime, which often implies some monetary integration with a large currency area, such as the U.S. dollar or the euro (see Appendix I, Table A1). This leaves those states with limited room for the endogenous determination of interest and inflation rates, and consequently less control over domestic output.²⁸ Views vary about whether a fixed regime tends to reduce or increase incentives for high public debt.

When they fix their exchange rates, small states are 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: Tornell and Velasco (2000), Alberola and Molina (2004), and Duttagupta and Tolosa (2006) find that countries with fixed exchange rates had worse fiscal outcomes than those with flexible exchange rates. Sahay (2005) establishes 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.²⁹

However, the more traditional view is that, appropriately implemented, fixed exchange rate regimes can encourage more fiscal discipline, because expansionary fiscal policies will eventually lead to the collapse of the peg, with large economic costs and punishment of the policymaker. Further, 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 stabilize 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.

²⁸ 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.

²⁹ 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.

IV. SOME EMPIRICAL EVIDENCE

The higher spending and debt of small states (Section II) 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 II in determining the size of government and the amount of public debt.³⁰ To do so, it will investigate the net impact of trade openness, examine the relationship between the exchange rate regime and debt, and determine whether better governance is associated with lower government spending and public debt.

The modeling follows Alesina and Wacziarg (1998) but uses more recent data and focuses more on small states.³¹ 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.³² The analysis uses data from 1990 to 2004. The country sample consists of both large and small developing countries (see Appendix I) but is focused on small states because the new fiscal database on 42 small states is used.

Table A5 (in Appendix III) describes summary statistics for all variables used in the analysis for 2000–2004, with averages used for most of the fiscal variables. For the cross-sectional specifications, OLS regressions were run for the following periods: 1990–1994, 1995–1999, 2000–2004, and 1997–2004.³³ Because heteroskedasticity is suspected in the error term of the equations, robust standard errors were used to calculate the t-statistics.³⁴ The independent variables used to capture country characteristics were population, population density, per capita income, the index of government effectiveness (governance), trade openness measured as imports and exports of goods and services over GDP, area dummies (to take account of regional differences), and geographical dummies (island and landlocked). Multiplicative governance dummies, small governance and big governance, were used to capture scores

³⁰ Not all the factors raised in the previous section are tested for as we wanted to focus the empirical analysis mostly on the impact of country size on government size and debt.

³¹ Alesina and Wacziarg (1998) reveal a negative relationship between the size of government and the size of a country.

³² The model specification does not take into account the hypothesis that country size and fiscal outcomes may be simultaneously determined.

³³ Five-year (and eight-year) averages were used to eliminate the impact of the business cycle. Due to the significant amount of missing data until 1997, OLS regressions are not presented for 1990-97 and 1990-2004.

³⁴ 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 utilized to recalculate the t-statistics.

based on government effectiveness in small and large countries.³⁵ Because governance and per capita income (see Figure 8) are highly collinear, coefficients for these variables were estimated in separate equations.³⁶

A. The Size of Government

The results demonstrate that government size and country size are negatively related and that the relationship is statistically significant. Using total expenditure to measure the size of government, Table 4 reports estimates for the log of population and governance with several control variables for the 2000–04 and 1997–2004 time periods. The coefficient estimates for the log of population are negative and statistically significant. This result was also true for the 1990–94, and 1995–99 time periods (Tables A6 and A7, Appendix III). Similar results apply to the coefficient estimates for the log of population for capital expenditure, wages and salaries, and goods and services, indicating that these expenditure sub-items also have a significant negative relationship to country size. For small states, governance is not a significant determinant of government size and the expenditure subcategories. However, for large countries better governance is significantly associated with lower total expenditure and capital spending.

Trade openness is not significant in explaining the size of government in most of the time periods. This finding, contrary to Rodrik (1996) but somewhat similar to Alesina and Wacziarg (1998), suggests that openness and vulnerability to external shocks do not necessarily require a larger government to provide a stabilizing role in the economy. If shocks are symmetrical, and stabilization policy is conducted through adjustment to government expenditures, on average over the cycle there would be no reason to expect higher aggregate expenditures. Still, the high degree of collinearity between openness and country size makes it difficult to come to a definite conclusion on the net impact of trade openness.

³⁵ This was done by creating two dummies, small = 1 if small and zero otherwise, and big = 1 if big and zero otherwise; and then creating two multiplicative dummies, small governance = small dummy * governance and big governance = big dummy * governance.

³⁶ Governance is generally acknowledged to support successful economic development; in other words an improvement in governance tends to raise per capita income because the two are positively correlated.

Table 4. Determinants of Size of Government¹**OLS Regressions for 2000–04**

	Total Expenditure	Capital Expenditure	Wages and Salaries	Goods and Services
Log of population	-2.17 (2.76)***	-0.96 (2.90)***	-0.75 (2.45)**	-1.10 (2.27)**
Log of per capita income	-1.82 (1.12)	-2.28 (2.75)***	0.26 (0.63)	0.33 (0.62)
Trade openness	-0.01 (0.23)	0.01 (1.05)	-0.01 (0.89)	-0.01 (0.35)
Log of population density	0.92 (1.05)	0.15 (0.40)	-0.02 (0.08)	0.55 (1.31)
Observations	67	67	63	56
R-squared	0.26	0.44	0.35	0.31
Log of population	-2.36 (2.92)***	-0.88 (2.44)**	-0.68 (2.12)**	-1.10 (1.88)*
Small governance	0.40 (0.15)	-1.77 (1.60)	-0.25 (0.27)	0.77 (0.75)
Big governance	-5.76 (2.01)**	-2.53 (2.36)**	1.95 (1.39)	0.80 (0.44)
Trade openness	-0.01 (0.27)	0.01 (0.84)	-0.01 (0.90)	-0.01 (0.43)
Log of population density	1.07 (1.41)	0.30 (1.02)	-0.04 (0.12)	0.54 (1.73)*
Observations	66	66	62	55
R-squared	0.27	0.36	0.36	0.31

OLS Regressions for 1997-04

Log of population	-2.28 (2.58)**	-1.07 (3.20)***	-0.82 (2.50)**	-1.12 (2.15)**
Log of per capita income	-1.27 (0.70)	-2.65 (2.56)**	0.75 (1.74)*	0.65 (1.21)
Trade openness	-0.02 (0.49)	-0.00 (0.18)	-0.02 (0.99)	-0.01 (0.28)
Log of population density	0.90 (1.27)	0.09 (0.38)	0.03 (0.08)	0.56 (1.83)*
Observations	67	67	63	56
R-squared	0.25	0.45	0.36	0.32
Log of population	-1.76 (2.69)***	-0.93 (2.30)**	-0.51 (2.14)**	-0.66 (1.86)*
Small governance	1.31 (0.48)	-1.24 (1.15)	-0.10 (0.07)	0.88 (0.83)
Big governance	-4.26 (1.53)	-2.92 (2.21)**	2.53 (1.84)*	1.11 (0.84)
Trade openness	0.00 (0.05)	-0.00 (0.01)	-0.01 (0.58)	0.01 (0.67)
Log of population density	0.85 (1.15)	0.41 (1.32)	-0.18 (0.55)	0.42 (1.41)
Observations	63	63	59	52
R-squared	0.27	0.33	0.37	0.34

¹ Dependent variables are total expenditure, capital expenditure, wages and salaries, and goods and services, as percent of GDP. Absolute value of t statistics in parentheses. For brevity's sake area and geographical dummies are not presented.

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

B. Public and External Debt

Additional independent variables are added to the equations. A dummy variable equal to one is included if a country has a de facto fixed exchange rate regime.³⁷ The change in terms of trade of goods and services is also added as an explanatory variable, 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.

The OLS estimation results reveal some evidence of a negative and, in many regressions, statistically significant relation between country size and gross public and external public debt in 2000–04 (Table 5). This implies that smaller countries do tend to have higher public debt, though the negative relationship is not as robust as that between country size and size of government.

Gross public debt and external public debt are significantly negatively related to per capita income, suggesting that poorer countries have higher total and external debt, as illustrated by the HIPC cases in the sample.³⁸

For the 2000–04 and 1997–04 time periods, the coefficient on the small governance multiplicative dummies is negative and tends to be more significant than that on big governance. The results imply that higher governance scores are linked to reduced levels of both public and external debt, particularly in small states.

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.

Trade openness is not found to have a significant negative correlation to public and external debt. The coefficient on the change in the terms of trade is negative and significant in several regressions, suggesting a worsening in the terms of trade may have led to higher debt.³⁹

³⁷ 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.

³⁸ There are five small-state HIPCs (Comoros, Gambia, Guinea Bissau, Guyana, and São Tomé and Príncipe) and two large-state HIPC cases (Bolivia and Côte d'Ivoire).

³⁹ Many small states, particularly Caribbean ones, suffered a negative terms of trade shock with the erosion of trade preferences during the 2000-04 period.

Table 5. Determinants of Gross Public and External Debt¹

OLS Regressions for 2000–04

	Gross Public Debt	External Public Debt
Log of population	-23.36 (2.42)**	-25.07 (2.30)**
Log of per capita income	-32.30 (2.34)**	-41.98 (2.79)**
Trade openness	-0.29 (1.51)	-0.24 (1.49)
Change in terms of trade	-3.16 (1.96)*	-2.08 (1.19)
Exchange regime dummy	-81.15 (1.85)*	-76.11 (1.53)
Log of population density	9.63 (1.99)*	8.10 (1.63)
Observations	64	63
R-squared	0.50	0.50
Log of population	-22.22 (1.81)*	-21.86 (1.54)
Small governance	-54.09 (2.56)**	-59.62 (2.55)**
Big governance	-59.15 (1.91)*	-53.71 (1.53)
Trade openness	-0.21 (1.08)	-0.18 (0.90)
Change in terms of trade	-5.78 (2.62)**	-5.01 (1.99)*
Exchange regime dummy	-85.80 (1.55)	-76.88 (1.18)
Log of population density	11.25 (2.05)**	9.99 (1.66)
Observations	63	62
R-squared	0.52	0.47
OLS Regressions for 1997–04		
Log of population	-27.55 (2.05)**	-27.64 (1.88)*
Log of per capita income	-44.73 (2.39)**	-55.59 (2.79)**
Trade openness	-0.52 (1.41)	-0.46 (1.25)
Change in terms of trade	-4.02 (1.80)*	-1.82 (0.93)
Exchange regime dummy	-123.05 (1.91)*	-106.98 (1.51)
Log of population density	7.94 (1.44)	5.90 (1.03)
Observations	54	54
R-squared	0.51	0.51
Log of population	-30.62 (1.84)*	-30.57 (1.65)
Small governance	-58.54 (2.23)**	-59.95 (2.09)**
Big governance	-44.17 (0.82)	-43.46 (0.84)
Trade openness	-0.62 (1.32)	-0.61 (1.21)
Change in terms of trade	-1.19 (0.74)	-0.59 (0.32)
Exchange regime dummy	-151.93 (1.75)*	-140.74 (1.44)
Log of population density	13.19 (1.99)*	12.30 (1.71)*
Observations	51	51
R-squared	0.43	0.38

¹ Dependent variables are gross public debt and external debt as percent of GDP.

For brevity's sake absolute value of t statistics in parentheses. Area and geographical dummies are not presented.

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

V. POLICY CONSIDERATIONS FOR FISCAL ADJUSTMENT

As confirmed by the empirical analysis, small states tend to have relatively bigger governments, and there is some evidence that many 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 reduce the vulnerability that is associated with their greater output volatility and high public debt. We then discuss how a large fiscal adjustment can enhance their economic growth rates. Finally, we put forth measures that support fiscal adjustment in small states, such as expenditure cuts, revenue preservation, and governance improvements.

A. Vulnerability Reduction

Fiscal adjustment in small states can reduce the vulnerability caused by their weaker fiscal positions and greater susceptibility to shocks. Low public debt and a sound fiscal position give policymakers flexibility to respond counter cyclically to shocks or downturns (Daniel and others, 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 stabilize 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 minimize 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 nondiscretionary expenditure, such as entitlement programs.

Often fiscal adjustment is more important than monetary policy when small states respond to changes in output. Since monetary policy is limited because most small states have a fixed exchange rate regime, fiscal policy is one of the few tools available to them to respond counter cyclically 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.

B. Growth Support

Fiscal adjustment can support growth by 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 proof that growth is higher in small states with smaller government and lower public debt (Figure 9).⁴⁰ 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.⁴¹

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 and others, 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 6). 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.⁴² 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.⁴³ In 67 percent of the episodes of large fiscal adjustment, economic growth increased and the average change in growth was 1.3 percent. In fact, in only one episode was average growth negative.⁴⁴ In

⁴⁰ Note, we did not test for causality, as many of the high-growth small states are oil exporters or resource-rich countries.

⁴¹ 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.

⁴² Two of the episodes were for two-year periods.

⁴³ See Appendix IV, Table A10, for the list of countries that experienced large fiscal adjustment and for more details of the episodes.

⁴⁴ This was for Seychelles during 2003-04, a period which coincided with the Indian Ocean tsunami at the end of 2004.

come cases, changes in the political and social environment and structural reforms may have also impacted the growth outcome.⁴⁵

Table 6. Episodes of Large Fiscal Adjustment in Small States

(Percent of GDP, unless otherwise indicated)

	Primary Balance	Fiscal Balance	Revenue	Expenditure	Growth ¹
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
	Number of cases ² ...				
	where primary and fiscal balances improved	where revenues rose	where expenditure fell	where growth rose	
	100 percent	58 percent	92 percent	67 percent	

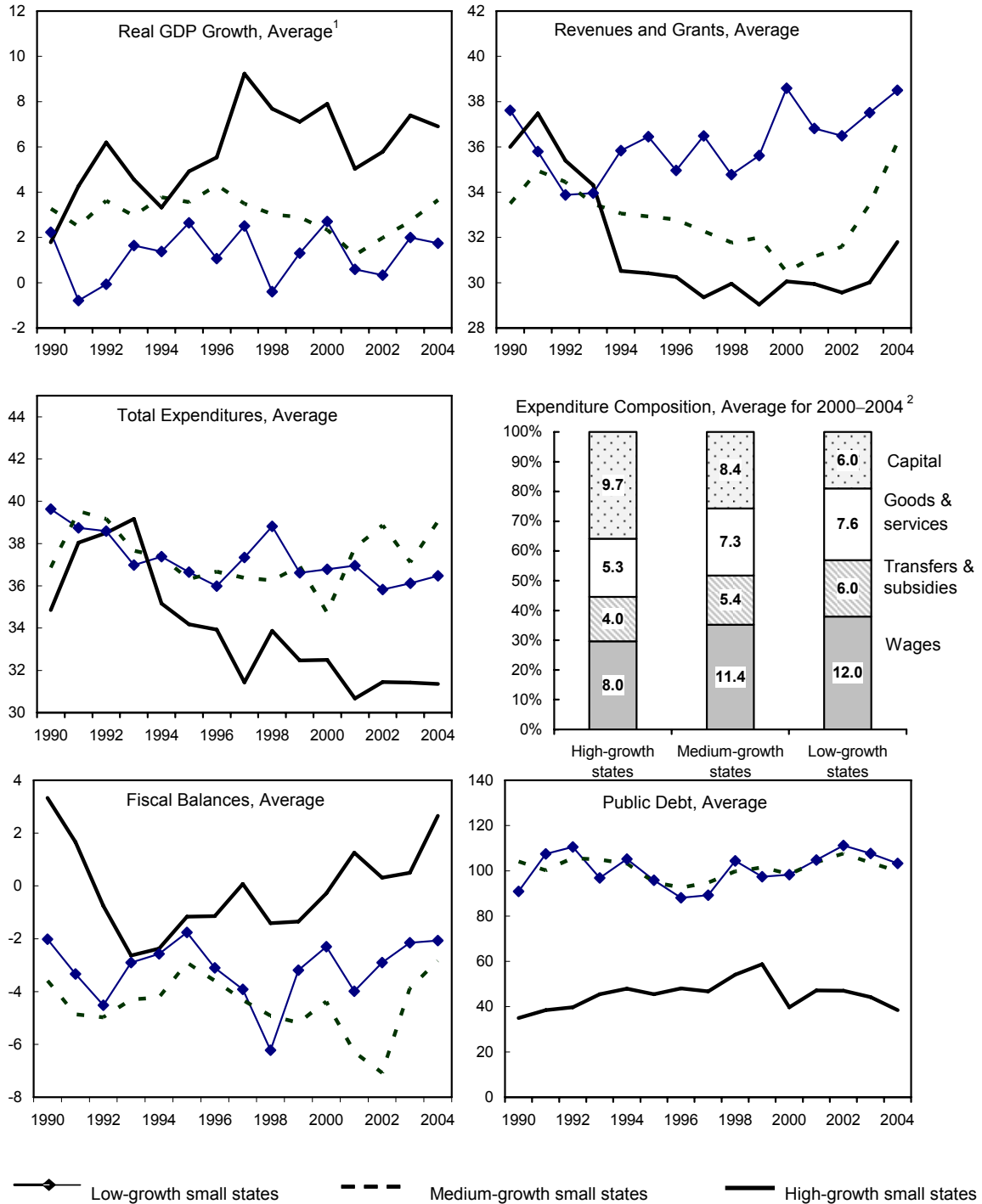
Source: IMF staff estimates

¹ Annual percentage change.

² There are 12 cases of large fiscal adjustment.

⁴⁵ 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 pickup in growth.

Figure 9. Growth and Fiscal Indicators in Small States, 1990-2004
(Percent of GDP)



Source: National Authorities, and IMF staff estimates.

¹ High-growth small-state growth average excludes Equatorial Guinea due to large data swings.

² Values in columns are percent of GDP.

C. Adjustment and Related 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 and others, 2006). Small states should also save by combining functions of government that may overlap and carefully prioritizing 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. 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 9). Nonetheless, caution should be used in assessing employment levels in small states since they also reflect the absence of economies of scale. There may also be a need for appropriate social safety nets for the vulnerable when implementing fiscal adjustment.

The 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 liberalization 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 neighbors (Briguglio, Persaud, and Stern, 2005). 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 suggest that improving governance, or government effectiveness, may also help small states reduce public and external debt and thus support fiscal adjustment. 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, 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 labor 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.

VI. CONCLUSION

This study shows that both the size of government and public debt tend to be larger in our sample of small states compared to the large-country one. Total revenues, current expenditures, and capital spending are higher in smaller states, and within current spending, goods and services, and wages and salaries are higher. Small states are likely to have large governments due to higher input costs and the lack of economies of scale in providing public goods and services. Small states have worse primary balance positions than large states, which, compounded by lower growth, has contributed to their also having higher public debt. The tendency for small states to have higher external public debt is also a sign of their openness; 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. Unlike Rodrik (1996), the study finds that trade openness does not impact the size of government, or the amount of public 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 reduce small state vulnerability and second, we find, like Perotti (1999) and Tsibouris and others (2006), that a large adjustment can support their growth (though other factors can also have an impact). While there are structural factors that explain the fact that small states have bigger government and, to a degree, their higher public debt, low debt and a healthy fiscal position will give policymakers the flexibility to react effectively to shocks. We find there is some proof that small states that have relatively smaller governments and lower public debt tend to grow faster. 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 because it is one of the few policy options they have to respond counter cyclically to economic downturns and shocks.

This study also presents new evidence linking higher governance, or more effective government policies, to lower public and external debt in small states. Improving government effectiveness can usefully support fiscal adjustment 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 underpins the credibility of the fixed exchange rate regime of the majority of small states. 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, the 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.

APPENDICES

Appendix I: Details of Small States and Large Countries

Table A1. Small Country Categories

Country	Region	Income level ¹	External Indebtedness ¹		Geography	Population (millions, 2004)	Official exchange rate regime ¹ Type	Details
				Other				
Antigua & Barbuda	WH	upper middle income	less		island	0.08	monetary union	ECCU, peg to US dollar
Bahamas, The	WH	high income	less		island	0.32	fixed	peg to US dollar
Bahrain, Kingdom of	ME	high income	less		island	0.78	fixed	peg to US dollar
Barbados	WH	upper middle income	less		island	0.27	fixed	peg to US dollar
Belize	WH	upper middle income	severely		mainland	0.26	fixed	peg to US dollar
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	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 dollar
Dominica	WH	upper middle income	severely		island	0.07	monetary union	ECCU, peg to US dollar
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 dollar
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 dollar
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 dollar is legal tender
Namibia	AFR	lower middle income	less		mainland	2.01	fixed	peg to South African rand
Papua New Guinea	AP	low income	moderately		island	5.76	independently floating	
Qatar	ME	high income	less		mainland	0.76	fixed	peg to US dollar
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 dollar
St. Lucia	WH	upper middle income	moderately		island	0.16	monetary union	ECCU, peg to US dollar
St. Vincent & Grens.	WH	upper middle income	moderately		island	0.12	monetary union	ECCU, peg to US dollar
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 dollar
Vanuatu	AP	lower middle income	less		island	0.21	fixed	adjustable peg

Source: IMF and World Bank.

¹ As of mid-2005.

Table A1 presents an overview of the 42 small emerging-market and developing states used in this study. The regional groupings are Africa (AFR), Asia Pacific (AP), Europe (EUR), the Middle East (ME), and the Western Hemisphere (WH). The external-indebtedness and income-level classifications are from the World Bank.

Table A2. Large Country Categories

Country	Region	Income level	External Indebtedness ¹	Other	Geography	Population (millions, 2004)	Exchange Rate Regime ¹
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, Rep. Bol.	WH	upper middle income	moderately		mainland	26.28	fixed

Source: IMF and World Bank.

¹As of mid-2005.

Table A2 shows the 25 large developing and emerging-market countries used in the study. The revenue, expenditure, public external debt, and total public debt data for the 25 large countries was collected from IMF Fiscal Affairs Department's internal website, with country desk economists as the main source. The external-indebtedness and income-level classifications are from the World Bank.

Appendix II: Fiscal Indicators and Vulnerability in Small States

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

	Expenditure subcategories					Public Debt ¹
	Total Expenditure	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	28.0	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

¹In Botswana, Comoros, Equatorial Guinea, Guinea Bissau, and São Tomé, there was no domestic debt data, so total public debt equals total external public debt.

Sources: National authorities, and IMF staff estimates

Table A4. The Composite Vulnerability Index (CVI) for Small States

Country	CVI Index	Rank out of 111 Developing Countries
Vanuatu	13.3	1
Antigua and Barbuda	11.2	2
Tonga	10.4	3
Bahamas	10.4	4
Botswana	10.2	5
Swaziland	9.6	6
Gambia	9.3	7
Fiji	8.9	8
Maldives	8.7	9
Solomon Islands	8.4	11
Dominica	8.1	12
Guyana	7.9	13
Djibouti	7.9	14
Grenada	7.9	15
Bahrain	7.8	16
São Tomé and Príncipe	7.7	17
Jamaica	7.5	18
St. Lucia	7.5	19
Samoa	7.4	20
Equatorial Guinea	7	21
Malta	6.9	22
Belize	6.7	23
St. Vincent	6.6	24
Namibia	6.5	26
Mauritius	6.5	27
Seychelles	6.4	28
St. Kitts and Nevis	6.3	29
Papua New Guinea	6.3	30
Gabon	6.2	32
Lesotho	6	34
Barbados	5.7	38
Cyprus	5.5	42
Comoros	5.4	43
Bhutan	5.4	45
Trinidad and Tobago	5.3	49
Cape Verde	5	73
Suriname	4.9	78

Source: Atkins, Mazzi, and Easter, 2000, "Small States: A Composite Vulnerability Index."

Appendix III: Data and Further Empirical Results

Table A5. Summary Statistics and Sources for the Data¹

Description	# of observation	Mean	Std. dev.	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 ²	67	95.10	44.11	22.41	206.79	IMF and World Bank
Trade openness 2000 ²	67	93.88	41.26	27.94	200.53	IMF and World Bank
Change in terms of trade	64	1.10	5.44	-6.94	28.21	IMF
Dummy for de facto exchange rate regime	67	IMF
Total expenditure ²	67	33.38	10.15	18.10	68.41	IMF
Capital expenditure ²	67	6.78	5.16	1.00	31.06	IMF
Wages and salaries ²	63	9.40	3.83	1.25	24.85	IMF
Goods and services ²	56	5.88	4.71	0.75	27.37	IMF
Gross public debt ²	67	84.06	79.80	5.33	550.23	IMF
External public debt ²	66	55.03	80.88	3.09	550.23	IMF and World Bank

¹Five-year averages (2000–2004) unless otherwise noted.

²As a percentage of GDP.

Table A6. OLS Regressions for Size of Government, 1995–99¹

	Total Expenditure	Capital Expenditure	Wages and Salaries	Goods and Services
Log of population	-2.67 (2.53)**	-1.12 (3.32)***	-1.05 (2.59)**	-1.33 (2.39)**
Log of per capita income	-0.18 (0.10)	-2.70 (2.24)**	1.57 (2.99)***	0.79 (1.44)
Trade openness	-0.04 (0.81)	-0.02 (0.75)	-0.02 (0.89)	-0.01 (0.61)
Log of population density	1.10 (1.47)	0.14 (0.48)	0.23 (0.65)	0.45 (1.49)
Observations	67	67	64	57
R-squared	0.26	0.38	0.38	0.35

	Total Expenditure	Capital Expenditure	Wages and Salaries	Goods and Services
Log of population	-1.98 (2.65)**	-0.92 (2.26)**	-0.74 (2.50)**	-0.81 (2.64)**
Small governance	1.91 (0.71)	-0.88 (0.61)	0.42 (0.29)	0.76 (0.74)
Big governance	-1.57 (0.43)	-2.79 (1.53)	2.98 (2.18)**	1.08 (0.91)
Trade openness	-0.00 (0.08)	-0.00 (0.18)	-0.01 (0.37)	0.01 (0.55)
Log of population density	0.87 (1.19)	0.42 (1.09)	-0.07 (0.21)	0.30 (1.07)
Observations	63	63	60	53
R-squared	0.27	0.27	0.34	0.35

¹ Dependent variables are total expenditure, capital expenditure, wages and salaries, and goods and services, as percent of GDP. Absolute value of t statistics in parentheses. Area and geographical dummies not shown for brevity's sake.
* significant at 10%; ** significant at 5%; *** significant at 1%

Table A7. OLS Regressions for the Size of Government, 1990–94¹

	Total Expenditure	Capital Expenditure	Wages and Salaries	Goods and Services
Log of population	-4.45 (3.58)***	-2.33 (4.45)***	-1.16 (2.62)**	-1.47 (2.30)**
Log of per capita income	0.29 (0.14)	-2.88 (2.70)***	1.85 (3.02)***	0.34 (0.40)
Trade openness	-0.08 (1.97)*	-0.05 (2.08)**	-0.00 (0.16)	-0.00 (0.26)
Log of population density	1.96 (2.19)**	0.51 (1.25)	0.22 (0.54)	0.51 (1.33)
Observations	60	60	56	51
R-squared	0.39	0.53	0.39	0.37

¹ Dependent variables are total expenditure, capital expenditure, wages and salaries, and goods and services, as percent of GDP. Absolute value of t statistics in parentheses. Area and geographical dummies not shown for brevity's sake.
* significant at 10%; ** significant at 5%; *** significant at 1%

Table A8. OLS Regressions for Gross Public and External Public Debt, 1995–99¹

	Gross Public Debt	External Public Debt
Log population	-17.65 (1.42)	-20.66 (1.54)
Log per capita income	-42.97 (2.30)**	-52.41 (2.55)**
Trade openness	-0.40 (0.78)	-0.43 (0.89)
Change in terms of trade	0.04 (0.02)	0.34 (0.19)
Exchange regime dummy	-90.80 (1.49)	-92.99 (1.43)
Log of population density	7.11 (1.23)	5.30 (0.89)
Observations	62	61
R-squared	0.38	0.41
	Gross Public Debt	External Public Debt
Log population	-14.19 (1.04)	-15.77 (1.07)
Small governance	-47.40 (2.02)**	-55.01 (2.21)**
Big governance	-13.98 (0.51)	-22.33 (0.69)
Trade openness	-0.39 (0.63)	-0.42 (0.66)
Change in terms of trade	-0.04 (0.02)	0.29 (0.14)
Exchange regime dummy	-101.52 (1.35)	-100.61 (1.23)
Log of population density	10.15 (1.46)	9.26 (1.26)
Observations	59	58
R-squared	0.28	0.28

¹ Dependent variables are gross public debt and external public debt as percent of GDP.

Absolute value of t statistics in parentheses. Area and geographical dummies not shown for brevity's sake.

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

Table A9. OLS Regression for Gross Public and External Public Debt, 1990–94¹

All Countries

	Gross Public Debt	External Public Debt
Log of population	-27.06 (2.03)**	-27.40 (1.89)*
Log of per capita income	-46.66 (2.40)**	-56.54 (2.79)***
Trade openness	-0.43 (1.21)	-0.41 (1.19)
Change in terms of trade	-0.98 (0.80)	-0.32 (0.24)
Exchange regime dummy	-110.22 (1.74)*	-100.65 (1.46)
Log of population density	8.83 (1.59)	6.34 (1.11)
Observations	54	54
R-squared	0.50	0.51

¹ Dependent variables are gross public debt and external public debt, as percent of GDP.

Absolute value of t statistics in parentheses. Area and geographical dummies not shown for brevity's sake.

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

Appendix IV: Details of Large Fiscal Adjustment in Small States

Table A10. 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	Expenditure Subcategories				Growth ¹
						Capital	Wages & Salaries	Transfers & Subsidies	Goods & Services	
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
Guinea Bissau	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 and 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 and 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 Estimate

¹ Average annual percentage change.

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