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Mario Borg

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TAXATION STRUCTURES IN SMALL STATES WITH SPECIAL REFERENCE TO REVENUE IMPLICATIONS FOLLOWING TRADE LIBERALISATIONS

*Mario Borg**

Abstract. This study looks at the taxation structures of Small States and analyses the extent to which they differ from those of larger countries. It also discusses the possible tax revenue implications for Small States, following a reduction in trade taxes as a result of trade liberalisation, and the eventual move towards income- and consumption-based taxes. This study shows that there is a substantial difference in the taxation structures of Small States, depending on their level of development. An important finding presented in the paper is that the proportion of trade tax to total tax revenue is negatively related to the level of development and to the size of the country, while it is positively related to economic openness.

Introduction

This study looks at the taxation structures of Small States and analyses the extent to which they differ from other groups of countries. The implications relating to tax structures following trade liberalisation and the eventual higher dependence on consumption and income tax in Small States are also considered.

It is well known that Small States tend to rely heavily on international trade, and as a result, their governments derive a relatively large proportion on their tax revenues from trade taxes.

This paper will test the assumption that the proportion of trade tax to total tax of revenue, across countries, is negatively related to the level of development and to the size of the country, and positively related to economic openness.

This paper is organised as follows. Section 2 presents a brief overview of literature concerning Small States, international trade, and trade liberalisation. Section 3 presents a description of the tax structures in different groups of countries. The estimation results relating to the relationship between international trade taxes, size of the economy, GDP per capita, and openness to international trade are presented in Section 4. Section 5 concludes the paper by considering a number of implications derived from the study.

A Brief Literature Review

Defining Small States

Smallness is a relative concept, and there are no hard and fast rules as to what is small when comparing countries according to size. Population size is often considered for measuring the size of countries. Other indicators sometimes used are territory size and GDP.

In many studies produced by the World Bank and the Commonwealth Secretariat, a threshold of 1.5 million people is used to classify countries as small. Crowards (2002) argues that the population size associated with 'small' States has generally declined over time, roughly from a population of 10 to 15 million in the 1950s and 1960s, to 5 million in the 1970s and 1980s, and to 1 to 1.5 million in the 1990s.

Of the 91 United Nations member states, 46 have a population of less than 1.5 million and many of these are Small Island Developing States (SIDS). Among the world's sovereign developing states with populations of less than 1.5 million people, 41 are members of the World Bank, more than 30 are eligible for Bank Group borrowing, and 29 are members of the Commonwealth. The incomes and stages of development of these states vary widely, from very poor African countries such as Guinea-Bissau to relatively wealthy countries such as Brunei, Cyprus, Malta, and Qatar.

Small States differ in many aspects from larger countries. They face different realities

with regard to their social, demographic and economic environment. The economies of small developing countries tend to be undiversified, with most of them depending on one or two main areas of economic activity. Many Small States are highly dependent on agriculture (sugar and bananas), while others are becoming highly dependent on tourism and financial services to generate foreign exchange, income and employment.

A small population leads to limited institutional capacity in the public and private sectors, and limited ability to benefit from economies of scale. Due to the indivisibility of overhead costs, public goods in Small States tend to be more costly than is the case in larger territories.

A joint report by the Commonwealth Secretariat and the World Bank entitled “Small States: Meeting Challenges in the Global Economy” (April 2000) concludes that developing Small States do share a number of characteristics that pose special development challenges: they are especially vulnerable to external events, and this leads to high volatility in national incomes. Many of them face an uncertain and difficult economic transition to a changing world trade regime.

There is ample evidence to show that Small States tend to be more economically vulnerable than other groups of countries. Their susceptibility to external shocks, as a result of their high degree of structural openness and import dependence, amplify external shocks. The concept of economic vulnerability is well documented in Briguglio (1995).

In addition, Small States tend to have high public administration costs. Alesina and Wacziarg (1998) suggest that one reason for this is the indivisibility of costs of public sector activities. The fact that small countries are more open economies may also influence the size of government. Indeed, Dani (1998) shows that in general, countries that are more open to trade tend to have larger governments with spending required to cushion the impact of volatility associated with openness. These factors also have ramifications on the structure of taxation in Small States.

Literature on Small States and vulnerability points to the paradox that despite their economic vulnerability, many Small States, both developed and developing, have achieved relatively high rates of economic growth and relatively high levels of per capita incomes. This is reflected in the fact that disproportionately fewer Small States are found in the World Bank’s lowest income categories (Armstrong and Read, 1998). This suggests that factors, such as policies that help to build resilience need to be considered when assessing the economic performance of Small States. Briguglio (2004) defines resilience as the ability to recover from or adjust to the negative impacts of external economic shocks and can be developed through the implementation of specific policies and programmes that seek to minimise the negative effects of economic vulnerability.

Brautigam and Woolcock (2001) argue that because small countries are more vulnerable, the quality of their institutions matters even more than it does in large countries. Moreover, they also maintain that small countries with high quality institutions experience less economic volatility and are more likely to enjoy higher rates of economic growth.

Small States are generally more open to trade than other developing economies and through trade they can overcome some of the constraints associated with the small domestic market. For this reason they need to be highly competitive. The constraints affecting the international competitiveness of Small States are well documented (see Briguglio and Cordina, 2004; UNCTAD, 1997).

Many small states benefited from access preferences into the markets of their former colonising powers. As a result of international trade liberalisation and the outcome of negotiations within the World Trade Organisation, many Small States have had their preferences dismantled and their ability to impose trade taxes constrained.

Regarding the erosion of trade preferences, the affected Small States argue that this is highly detrimental to their economic well-being, and that the fact that their share of international trade is very low, should be considered in granting them a form of de minimis exception of WTO rules. Von Tigerstrom (2005) argues that the maintenance of trade preference favouring small, vulnerable economies, would result in minimal distortion and little impact on other trading partners (see also Briguglio *et al*, 2006: 9-15).

Taxation and Small States

Of more relevance to this paper is the inability of Small States to continue relying heavily on trade taxes for government revenue as a result of trade liberalisation worldwide. As this study will show, international trade taxes form an important source of revenue in Small States. However, these states are being compelled to remove most, if not all of these taxes. This will not only result in a reduction in revenue but can also lead to macroeconomic difficulties.

A precise evaluation of the impact on tax revenue following the removal of tariffs in Small States is very difficult to assess due to several reasons. However, Abed (1998) in a study of southern Mediterranean countries concludes that the revenue impact of eliminating tariffs on EU imports is estimated to be in the range of 1 per cent to 4 per cent of GDP, if no offsetting improvements in collection are made elsewhere in the tax system. Alexandraki and Lankers (2004) found that government revenue forgone due to the loss of trade preference erosion can range from 1.9 per cent for St. Kitts and Nevis to 24.4 per cent for Mauritius.

Baunsgaard and Keen (2005) examine the ability of developing economies to generate tax revenue from other sources, mainly from VAT, following the dismantling of trade tax over the last 25 years. They show that middle-income countries recovered between 45 – 60 cents for every one dollar lost in trade tax revenue, while lower-income countries at best recover no more than 30 cents for each dollar lost. The results from these studies give a rough indication of the adverse implications on tax revenue in Small States. Moreover, it also indicates that less developed economies (which are the most dependent on international trade tax) will be more negatively affected.

On the other hand, liberalisation of trade will inevitably result in an increase in

imports. Since imports are often a major base from which VAT and excise taxes are collected, trade liberalisation is likely to result in higher tax revenue from value added and will facilitate the collection of excise tax. However, this necessitates a reform in tax institutions and the setting up and strengthening of the administrative setup. Other potential benefits for tax revenue may come through indirect channels such as efficiency of the economy and higher economic growth

Although the magnitude of the effect of the removal of tariffs is uncertain, it is safe to assume that the revenue implications of trade liberalisation will depend significantly on the form of liberalisation and the circumstances under which it occurs. Indeed, tax revenue will be least affected when trade liberalisation is accompanied by reforms in customs and tax administration such as the introduction of VAT.

Trade liberalisation generally involves the reduction of import tariffs, and/or the elimination of quantitative trade restrictions also known as quotas. The elimination of quotas does not directly affect tax revenue. On the contrary, if quotas are replaced by tariffs, tax revenue can indeed increase.

The effect of international trade tax reductions on revenue depends on several variables. These include the extent of liberalisation of trade, eventual changes in the foreign exchange regime and in the exchange rate, the level of development, the structure of the economy, and the structure of taxation in place. Changes in trade tax revenue also depend on the level of trade tax before the reduction and on the elasticity of imports to a reduced tariff rate.

Dismantling of tariffs implies a more open economy. Combes and Saadi-Sedik (2006) have examined the impact of trade openness on budget balances by distinguishing the effects of natural openness from trade-policy induced openness and have found that trade openness increases a country's exposure to external shocks regardless of whether trade openness is due to natural openness or to trade policy induced openness. More importantly, they have also showed that natural openness deteriorates budget balances whereas trade policy induced openness improves them mainly because of higher resilience.

Trade liberalisation is often assumed to lead to a better allocation of resources and hence a more productive economy. In fact, an indirect effect of trade liberalisation is the restructuring of the domestic economy with a reduction in inefficient uncompetitive production and an increase in more efficient forms of production.

In the initial stages, this restructuring process can have adverse results on both direct and indirect taxes as profits and wage income may decline. However, trade liberalisation and the subsequent improvement in competitiveness would stimulate domestic output, which in turn will lead to economic growth and to an expansion of tax bases. Ebrill and Stotsky (1999) have shown that sometimes, following trade liberalisation, the ratio of trade taxes to GDP has increased for a given number of years. The same authors have also shown that at times, some countries have, at least in the short run, implemented trade reform in a manner that has not been costly in terms of trade tax revenue, although in the long-run, trade tax revenue has tended to decline in these countries.

In another study of several developing countries, Pritchett and Sethi (1994) found a non-linear relationship between statutory tariff rates and rates actually collected. They argue that the higher the tariff rates, the greater the incentive for importers to make an effort in seeking exemption. As a result, revenue tends to remain unchanged in proportion to an increase in tariffs. The converse may also apply, that is, reducing very high tariffs may not always lead to a proportionate fall in revenue. Moreover, eliminating tariff exemptions can contribute to trade reform while preserving revenue, by broadening the tax revenue.

The relatively high dependence of Small States on revenue from international trade tax could also be viewed as a consequence of a general lack of infrastructure and resources. Kubota (2005) shows that when the fiscal needs are small and the infrastructure to collect taxes is not well developed, governments tend to collect tax revenue from an easy source, which generally includes trade tax. This would seem to suggest that one of the reasons behind this dependence of Small States on trade tax revenue can be an inadequate institutional set-ups.

Abed et al. (1998) claim that improving the structure and administration of tax systems requires significant tax policy reforms, such as simplifying and rationalising tariff and tax rates and introducing broad-based taxes on consumption. To improve tax and customs administration, these tax policy reforms need to be reinforced by appropriate institutional reforms.

To be cost efficient tax administration should be 'simple' and 'fair', especially in Small States where capacity is limited. Literature on the subject has yielded a set of 'good practices' in reforming the tax system of developing states. Among these are: (a) the need to rely more on a broad-based consumption tax such as VAT; (b) excise taxes should be levied at ad valorem rates; (c) a personal income tax should have a moderate to low rate and most importantly few brackets; and (d) corporate tax should be a moderate one, especially in view of the increasing mobility of capital.

Tax Patterns across Countries

For the purpose of this study, countries are grouped into seven different categories, namely:

1. OECD states (generally the most developed countries);
2. Developing African states;
3. Developing Asian states;
4. Other European States (mostly Eastern European);
5. Middle Eastern States;
6. Central and South American States; and
7. Small States.

The total number of countries covered in this study amounts to 135, of which 25 are Small States.

This analysis makes heavy use of data provided by the International Monetary Fund's (IMF) yearly publication and the IMF's Government Financial Statistics for the year 2004 (GFS 2004). However, for a number of countries, especially Small States, data in connection with government finance and tax revenue was not available in the GFS

2004, therefore, other sources have been used, among which other IMF releases and respective countries' statistical authorities.

Tax revenue per type of tax is presented as a percentage of total tax revenue and is grouped under seven headings as follows:

1. Taxes on income, profits, and capital gains;
2. Taxes on payroll;
3. Taxes on property;
4. General taxes on goods and services (mainly sales tax and VAT);
5. Taxes on international trade;
6. Excise tax; and
7. Other taxes (mostly fees, licences and taxes on services)

The final figure arrived at for each country in terms of tax revenue per type of tax as a percentage of total tax revenue has been calculated by taking the average of three years (latest data from the period 1999- 2004). This has been done in order to smoothen as much as possible fluctuations arising from particular circumstances that could have had an impact on tax revenue collected. However, it must also be noted that due to lack of data this averaging has not been possible for some countries, hence, in a few cases only one particular year has been considered.

Taxation Structures

Figure 1 shows total tax-to-GDP ratio. OECD countries and Eastern European countries have the highest tax-to-GDP ratio with total tax revenue standing at 27.7 per cent and 13.9 per cent of GDP respectively.

Of interest is the fact that Small States collect a relatively high ratio of taxes to GDP (12.4 per cent).

Table 1 shows the different types of tax categories for each group of countries, as a percentage of total tax revenue. Of particular interest to this study is the tax revenue collected through international trade tax. While OECD countries obtain only 1.1 per cent of their tax revenue from international trade tax, Small States get 36.3 per cent of their tax revenue from this source. Developing countries in Africa also collect a considerable high percentage of their tax revenue from international trade tax with a 33.4 per cent originating from trade taxes.

Tax on income, profit and capital gains represents nearly half of all tax revenue in OECD countries, while taxes classified under general tax on goods and services amount to about 25 per cent.

On the other hand, tax on income, profit and capital gain makes up only 27.3 per cent of all tax revenue collected in Small States. This represents the lowest ratio among all groups of countries.

Taxes on goods and services make up 17.7 per cent of tax revenue in Small States. Again this is the lowest among all the countries groups with the exception of Middle Eastern countries at 12.6 per cent. Revenue collected from excise tax in Small States

is also the lowest among all groups of states and it represents 5.6 per cent of tax revenue collected.

Figure 2 sheds more light on the relation between dependence on trade taxes and size of countries. The Figure shows that the ratio of international trade tax to total tax revenue is negatively related to the size of countries measured GDP in US\$, PPP (a similar pattern emerges if population was considered as a measure of size). One reason for this is that small states tend to be very open and taxes on imports used to be an attractive option for the government of such states.

Small States, Taxation and Development Status

It is interesting to assess the extent to which tax structures differ with the level of human development among Small States. For the purpose of this study, the 2004 Human Development Index (HDI) is used as a proxy for human development (UNDP, 2005).

Table 2 shows the tax revenue by type as a percentage of total tax revenue and three different levels of HDI. A value below 0.76 is considered as a low HDI, a value between 0.76 and 0.80 is considered to be medium, while a value over 0.80 is considered as high.

It can be seen that low-HDI Small States collect on average 40 per cent of their tax revenue from tax on international trade compared with 38.4 per cent and 29.6 per cent collected by medium-HDI Small States and high-HDI Small States respectively.

The average of tax revenue collected from tax on income, profit and capital gain as a percentage of total tax revenue in countries classified as having a high level of human development is 30 per cent, while for those states classified as having a low human development it is 26.3 per cent. States scoring high on human development index also collect a higher percentage of tax revenue from payroll tax and property tax, while they collect a lower percentage from excise tax.

Of particular interest is the fact that low HDI Small States collect a higher percentage of tax revenue from sales tax, an average of 19.3 per cent compared to 16.2 per cent collected by states classified as having a high HDI. This finding would seem to contradict the general belief that sales tax is associated with the more developed countries.

Geographical Location and Development Level

For the purpose of this study, Small States have been grouped into four geographical areas, namely:

1. Asia and Africa;
2. Caribbean, South and Central America;
3. Mediterranean; and
4. Pacific and Oceania.

Table 3 shows tax revenue by type as percentage of total tax revenue of region. It can be seen that taxation structures in Small States differ according to their geographic

location. Indeed, Small States in Asia and Africa and those in the Caribbean have the highest percentage of tax revenue collected from tax on international trade. These amounts to 42.1 per cent and 40.1 per cent respectively. Small States in the Pacific and Oceania region collect 30.6 per cent of their tax revenue from trade tax. On the other hand, Malta and Cyprus collect only 7.3 per cent of their tax revenue from tax on international trade.

While, as an average, tax on income, profit and capital gain makes up 27.3 per cent of total tax revenue in Small States, it varies greatly from a minimum of 0 per cent to a maximum of 54 per cent in the individual Small States. Countries that collect a considerable amount of tax revenue from this source are Papua New Guinea (54 per cent), Singapore (51 per cent), Trinidad and Tobago (47 per cent), and Guyana (43 per cent). On the other hand Vanuatu and Bahamas have practically no income tax.

Empirical Analysis

This section tests the hypothesis that the ratio of trade tax collected depends on the level of development and on the level of openness of the economy. In turn the level of openness of an economy is assumed to be related to the size of the country and the level of development. The level of development is measured by GDP per capita in Purchasing Power Parity (PPP), while openness to trade is measured by the average of imports and exports to GDP ratio. The size of the economy is represented by the size of GDP in US dollars.

In order to estimate this relationship a type of Two-Stage Least Square (TSLS) method was used, given the simultaneous determination between openness, GDP per capita and size of countries. This model can be represented as follows:

$$T = \beta_0 + \beta_1 G + \beta_2 S + u_1 \quad (1)$$

and

$$O = \beta_0 + \beta_1 S + \beta_2 G + u_2 \quad (2)$$

$$\beta_1 < 0; \beta_2 > 0; \beta_1 < 0; \beta_2 > 0.$$

Where:

T = International trade tax revenue as a percentage of total tax revenue;

S = Size measured in GDP in US\$ PPP;

G = GDP per capita in Purchasing Power Parity (US\$);

O = Openness measured as the ratio of imports and exports to GDP / 2;
= Predicted Openness derived from equation (2).

All variables are measured in logs, so that the coefficients of the equations represent elasticities.

Equation 1 assumes that the ratio of trade tax revenue to total tax revenue depends negatively on the stage of development (measured by GDP per capita) and positively on the country's openness.

Equation 2 assumes that openness is a negative function of the size of the country (measured by GDP) and is positively related to the level of development. The equation implies that developed economies are more open to international trade than non-developed ones and that small economies are more open to international trade and larger countries.

The results of the estimation procedure are presented in Table 4. A sample of 130 countries has been used in this analysis. The data for G and S applies to 2003, whereas the data for the other variables pertains to the average of three years (latest data between 1999-2004).

It can be seen that, as expected, the ratio of trade taxes to total tax revenue is negatively related to GDP per capita¹ and positively related to the degree of openness, which is itself related to size of countries.² This implies that the more developed economies tend to collect less tax revenue from trade tax while the small economies tend to rely more on such taxes.

Summary and Conclusion

This study has show that Small States tend to depend heavily on import tariffs to collect tax revenue. Indeed, between 2000 and 2002, Small States collected around 36 per cent of their tax revenue from international trade tax compared to the 1.1 per cent collected from the same source in OECD countries.

The study also shows that there is considerable difference in the structure of taxation among Small States, with those located in Asia and Africa, and in the Caribbean region being the most dependent on revenue from taxes on international trade.

Another interesting finding is the relationship between the level of development and taxation structures. It has been shown that those Small States that score high on the HDI tend to collect more of their tax revenue from taxes on income, profit and capital gain, while Small States having a low HDI tend to raise most of their tax revenue from taxes on international trade.

This relationship was revisited in the empirical analysis where the relation between international trade revenue, GDP per capita, the size of GDP, and the level of openness was analysed. The regression results supported the hypothesis that the ratio

of trade tax to total revenue is negatively related to GDP per capita, suggesting that as economies develop they tend to depend less on tax revenue on international trade tax for government revenue. Moreover, the analysis shows that the level of international trade tax collected is positively related to economic openness, suggesting that Small States tend to rely more on tariffs as a source of tax revenue than other countries.

These results suggest that trade liberalisation, and the resulting reduction in tariffs, is likely to have a major impact on Small States, although the magnitude of these effects is not easy to quantify, given the various factors involved. Much will depend on the circumstances within which trade liberalisation takes place and on the level of development of the economy. It is likely that trade liberalisation and the dismantling of tariffs will least affect tax revenue if the liberalisation process is accompanied by the necessary reforms in the taxation structures (for example by adopting VAT) and by the setting up and strengthening of the administrative capacity. It is likely also, that the less developed small economies, which are also the most dependent on international trade tax, will be the most negatively affected.

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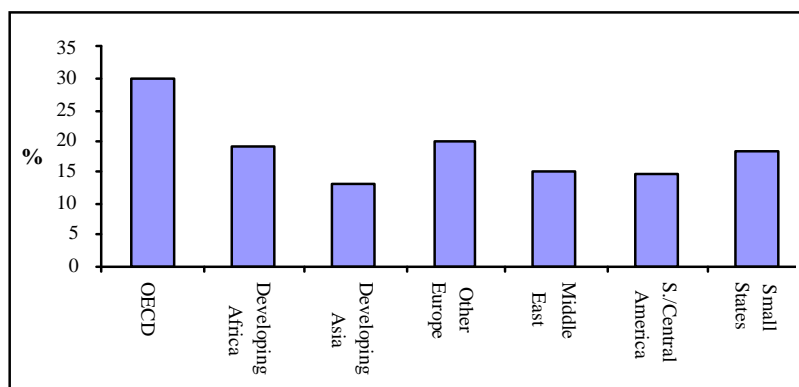
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Figure 1
Total Tax as Percentage of GDP



Source: Government Finance Statistics (2004)

Table 1
Tax Revenue by Type as Percentage of Total Tax Revenue

	Income	Payroll	Property	General	Excise	Trade	Others
OECD Countries	47.5	1.1	6.0	25.3	11.8	1.1	7.2
Developing Africa	29.2	0.3	1.1	19.9	9.9	33.4	6.1
Developing Asia	34.6	0.4	1.8	29.0	13.3	14.8	6.1
Eastern Europe	30.3	1.6	3.4	38.4	12.6	6.2	7.5
Middle East	32.7	2.4	2.8	12.6	5.8	25.1	18.6
South/Central America	28.1	0.7	4.5	40.2	11.5	11.3	3.8
Small States	27.3	0.5	2.4	17.7	5.6	36.3	10.0

Source: Government Finance Statistics (2004)

Table 3
Regional Location of Small States and Tax Revenue by Type
as % of Total Tax Revenue

	Income	Payroll	Property	General	Excise	Trade	Others
All Small States	27.3	0.5	2.4	17.7	5.6	36.3	10.0
Asia and Africa	25.6	1.6	2.7	15.9	2.2	42.1	9.8
Caribbean Region	26.5	0.0	2.8	15.9	5.2	40.1	9.4
Mediterranean	34.5	1.3	3.3	24.6	13.0	7.3	15.9
Pacific Region	28.7	0.0	0.5	21.5	8.4	30.6	9.6

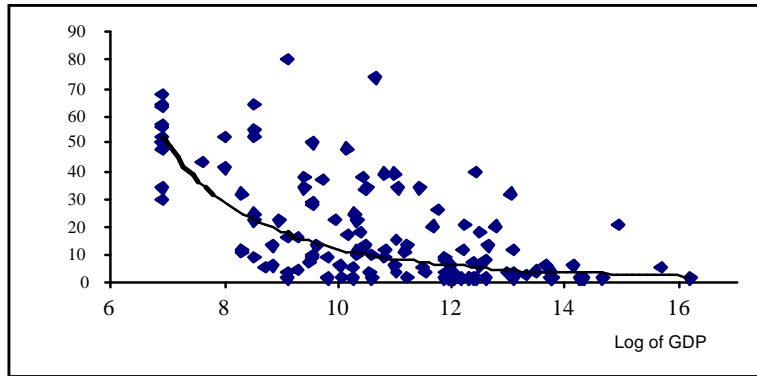
Source: Government Finance Statistics (2004) and IMF Country Reports

Table 2

	Income	Payroll	Property	General	Excise	Trade	Others
High HDI	30.0	1.7	4.7	16.2	4.9	29.6	12.9
Medium HDI	25.9	0.1	2.0	17.0	6.8	38.4	9.7
Low HDI	26.3	0.0	0.8	19.3	5.2	40.0	8.0

$T = 5.09 - 1.08 G + 1.78 \hat{O}$ $5.10 \quad - 13.16 \quad 6.15$ $R^2 = 0.58$	(1)
$\hat{O} = 2.13 - 0.14 S + 0.24 G$ $7.04 \quad - 7.60 \quad 6.48$ $R^2 = 0.36$	(2)

Figure 2
Trade Tax as a Percentage of Total Tax Revenue
in relation to Country Size (Measured in Log of GDP)



Source: Government Finance Statistics (2004)