

***GLOBALIZATION AND GOVERNMENT SPENDING AROUND THE  
WORLD***

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The data used in this paper can be downloaded from <http://pantheon.yale.edu/~gmg8/>

## 1. Introduction

This paper explores the empirical merits of the two major contending perspectives on the effects of the international integration of markets for goods, services and capital on economic policy choices at the national level. The common metaphor of a globalization-induced race to the bottom suggests that governments are under heavy efficiency pressures to reduce their economic policy activism to promote competitiveness and to keep mobile capital within national borders. In marked contrast, others argue that globalization increases material inequality [Wood 1994] and economic insecurity [Rodrik 1997], and that this creates incentives for governments to compensate the losers from globalization [Garrett 1998a].

My analysis builds on the pathbreaking work of Dani Rodrik on the relationship between globalization and the size of government for more than 100 countries around the world. Rodrik's research generates one central conclusion and offers one important conjecture. His conclusion is that there is a positive association between trade exposure and the size of government [Rodrik 1998a].<sup>1</sup> Rodrik's [1997: 62-63] conjecture is that the positive relationship between trade and government spending is undermined by international capital mobility.<sup>2</sup>

Rodrik's thesis about the relationship between trade and the size of government is important because it challenges simplistic notions about the constraining effects of trade competition on perhaps the most fundamental indicator of government economic activism, public spending. His conjecture, on the other hand, is in keeping with prevalent views about the constraining effects of capital mobility. Indeed, Rodrik [1998b] has gone

on to argue that the costs of capital mobility – in terms of social dislocations and the inability of governments to respond to them – outweigh its purported efficiency benefits.

There are, however, reasons to be skeptical both about Rodrik's conclusion that trade exposure is positively associated with government spending and about his conjecture that this relationship is undermined by capital mobility. With respect to the latter, the only quantitative study of the capital mobility-spending relationship that extends outside the OECD comes to the opposite conclusion – that more capital mobility is associated with more spending [Quinn 1997].

With respect to the trade-spending relationship, one should question how much associations between levels of trade and levels of spending – the core of Rodrik's [1998a] analysis – tell us about the effects of globalization [Rogowski 1998, Leamer 1996].<sup>3</sup> Globalization is a term that is supposed to describe a relatively recent phenomenon, and one that is a process rather than a steady state – the increasing international integration over time of markets for capital, goods and services. Levels of trade for different countries, in contrast, are relatively stable over time and greatly affected by things such as country size and location that are for all intents and purposes invariant. The marginal effects of changes in trade may be very different from the correlates of levels of openness.

This levels-changes distinction, in turn, has important theoretical implications. David Cameron [1978] argued that the positive trade-spending relationship in the OECD is the product of a long historical dynamic in which small open economies were more likely to develop strong labor movements and left-wing parties, and that in turn these political conditions were conducive to expansion of the public economy. Cameron thesis

does not predict – nor does the evidence support the proposition – that increases in trade exposure in the short term more or less instantly translate into increases in government spending.<sup>4</sup> Yet this is what Rodrik’s thesis proposes. Countries that are larger traders tend to be exposed to more international market volatility, and that this creates incentives for governments to increase government spending to cushion these market dislocations.

This paper thus modifies Rodrik’s analysis in two principal ways. First, I explore the interactive effects of trade and capital mobility on government spending for the largest possible sample of countries around the world. This allows me directly to test whether capital mobility constrains public spending on its own, or mitigates the effects of trade – as Rodrik surmises. Second, I analyze these relationships not only with respect to levels of spending, trade and capital mobility, but also for over time changes in the relevant variables. In so doing, it is possible independently to test whether the short and long run dynamics of the globalization-government relationships are similar.

I report two basic sets of results. With respect to levels of spending and globalization, my analysis conforms the robustness, strength and empirical magnitude of the positive relationship between levels of trade and levels of government spending (for data averaged over the 1985-1995 period). But there is no evidence that the level of capital mobility had any appreciable effect on the level of government spending, either alone or in interaction with trade. These results do not support either Rodrik’s conjecture about the constraining effects of capital mobility or Quinn’s assertion of a positive effect of financial liberalization on spending.

My second set of findings concerns the relationships among changes in trade, capital mobility and government spending (measured as the difference between 1970-

1984 averages and those for 1985-1995). Countries in which trade grew more rapidly after 1985 tended to have public economies that grew less quickly. Moreover, this was exacerbated in countries where capital mobility increased quickly. Indeed, the combination of large increases in both trade and capital mobility was associated with reductions in the size of the public economy. Thus, the changes results question Rodrik's finding about the effects of trade, but they support his suspicions about the constraining effects of capital mobility – and hence go directly against Quinn's assertion of a positive relationship.

The remainder of this paper is divided into five sections. Section 2 briefly reprises the contending theoretical arguments about the domestic policy effects of globalization. Section 3 presents the data. Section 4 elaborates the empirical methods used to explore the globalization- government spending relationship. Section 5 presents the regression results. Section 6 concludes by discussing the implications of this paper for the larger debate about globalization and national autonomy.

## **2. The Political Economy of Globalization**

There are two basic positions in the globalization debate. I label the conventional wisdom in policy circles about globalization constraints on policy interventionism the “efficiency” hypothesis because it highlights competitiveness pressures and threats of exit by mobile asset holders. The “compensation” hypothesis, in contrast, emphasizes the domestic dislocations generated by globalization and the incentives for government interventions in the economy that these generate. In this section, I develop both hypotheses in more detail with respect to government spending.<sup>5</sup>

### ***The Efficiency Hypothesis***

The fundamental tenet of the efficiency hypothesis is that government spending beyond minimal market friendly measures such as defense, securing property rights and other fundamental public goods reduces the competitiveness of national producers in international goods and services markets. There is no market for publicly provided services. Income transfer programs and social services distort labor markets and bias intertemporal investment decisions. Moreover, government spending must be funded, often by borrowing in the short term, and ultimately by higher taxes. Taxes on income and wealth directly erode the bottom lines of asset holders, and this is exacerbated the more progressive tax systems are. Borrowing results in higher real interest rates, depressing investment. If this also leads to an appreciation in the real exchange rate, the competitiveness of national producers is decreased.

According to the efficiency hypothesis, therefore, there is a zero-sum quality to the relationship between trade and the size of government. It does not matter whether one considers trade liberalization as the inevitable product of exogenous technological innovations in transportation and communication or as the conscious choice of governments to reap the benefits of trade (scale economies, comparative advantage, and the like) or. Either way, there must be a negative relationship between exposure to trade and government spending.

This logic is thought to be even more powerful with respect to capital mobility, particularly financial capital. Traders operating 24 hours a day can instantly move massive amounts of money around the globe in ceaseless efforts increase returns on their

investments. For many, the potential for massive capital flight has rendered the financial markets the ultimate arbiter of government policy. The logic underpinning this view is straightforward. Governments are held to ransom by mobile capital, the price is high, and punishment for non-compliance is swift. If the policies and institutions of which the financial markets approve are not found in a country, money will hemorrhage unless and until they are. In turn, financial capital is usually thought to disapprove of all government policies that distort markets, and excessive government spending is among the most prominent villains.

In sum, the efficiency hypothesis contends that government spending should have been subjected to powerful lowest common denominator pressures as a result of the globalization of markets in recent years. From the Depression until the 1970s, it may have been possible for governments to expand the public economy at little cost – because this was a period of relative closure in the international economy. In the contemporary era of global markets, however, the trade off between efficiency and welfare is harsh and direct, and governments have no choice but to shrink the state.

### ***The Compensation Hypothesis***

The efficiency view's focus on the economic costs of big government neglects the fact that there are political incentives to expand the public economy in response to globalization that may offset the competitiveness pressures generated by market integration [Garrett 1998a, 1998b, Rodrik 1997, Ruggie 1982]. Market integration may well benefit all segments of society in the long run through the more efficient allocation of production and investment. But the short-term political effects of globalization are

likely to be very different. Expanding the scope of markets can be expected to have two effects that would increase citizen support for government spending – increasing inequality and increasing economic insecurity.

The effect of trade is likely to be more pronounced on inequality than insecurity in the OECD, with the reverse holding for much of the developing world. In accordance with Heckscher-Ohlin models, expanding trade will reduce demand for relatively scarce factors of production (labor in the “north”, capital in the “south”) while increasing demand for abundant factors. This should result in increasing inequality in the OECD but more equality in developing countries [Wood 1994]. In contrast, trade patterns are not particularly volatile in the OECD and are characterized by very high levels of intra-industry and intra-firm trade. As a result, trade growth is unlikely to increase economic insecurity much in the advanced industrial democracies. But given more specialized patterns of trade in the developing world, volatility – and hence income security – should be more widespread in these countries [Rodrik 1997].

There is less work on the domestic effects of capital mobility. One reasonable premise, however, is that rising capital mobility should increase substantially both economic insecurity and inequality in the OECD, and that these effects should be even more apparent in less developed countries. The primary beneficiaries of financial market integration are the owners of liquid assets and those in the finance sector – or more specifically, large financial houses in the wealthiest OECD countries. It is less clear that these benefits trickle down to other segments of society, or across national borders. Moreover, unexpected and massive volatility comes hand in hand with financial globalization – as the headline crises of the 1990s all attest. The insecurities associated



with this volatility are likely to be large, and more pronounced in countries with greater short term international liabilities (i.e. the LDCs).

### ***Summary***

This section has sketched two hypotheses about the domestic effects of globalization that generate polar opposite predictions about patterns of government spending. We can distinguish three potential outcomes. First, efficiency considerations could dominate the incentives for compensation, resulting in negative associations between globalization and government spending. Second, compensation could dominate efficiency in policy choice, with positive globalization-spending relationships ensuing. Finally, the two forces could counterbalance each other, in which case empirical results would show no significant associations between globalization and the size of government. The remainder of this paper is devoted to determining which of these three scenarios best describes the phenomena we have observed in recent years.

## **3. Data**

### ***Trade***

Total trade (the sum of exports and imports as a % of GDP) is the simplest and most-widely analyzed aspect of market integration. Figure 1 shows that global trade increased from around one-third of world output in the early 1970s to almost 45% in 1995. The period from the early 1970s to the mid 1980s was greatly affected by dramatic swings in oil prices (up in 1973-1974 and 1978-1979 and down in 1985-1986). In the

subsequent ten years, however, trade grew more consistently and quite rapidly. It would thus seem reasonable to label the post-1985 period as one of clear trade globalization – consistent with the views of popular commentators and policy makers.

Figure 1 about here

These worldwide averages, however, conceal great cross-national variations in the importance of trade to different countries. Mean 1985-1995 trade dependence for the 165 countries for which the data are available was 79% of GDP, but the standard deviation was 46% (see Table 1). Small wealthy countries were the largest traders, with the cross-national distribution displaying a long right-hand tail. Exports and imports constituted more than 150% of GDP in Antigua, Bahrain, Guyana, Hong Kong, Luxembourg, Swaziland and Singapore. In contrast, the least trade dependent nations tended to be either very large, very poor or both. For example, trade constituted less than 25% of GDP in Argentina, Brazil, Cambodia, India, Japan, Myanmar, Sudan and the United States.

Table 1 about here

Similar cross-national variations were apparent with respect to changes in trade between the 1970-1984 and 1985-1995 periods. The average increase in trade for the 131 countries for which the data were available was 3.1% of GDP, whereas the standard deviation was 16.5% of GDP. Trade growth between the two periods was more than 25 % points of GDP in the Gambia, Hong Kong, Jamaica, Malaysia, Mauritius, Paraguay, and Thailand. At the other end of the spectrum, trade declined by more than 20 points of GDP in Barbados, Grenada, Saudi Arabia, Somalia and Suriname. There is no obvious way to characterize these two types of countries. Nations that were larger traders in the

post-1985 period also tended to be countries in which trade grew more quickly after 1970-1984, but the correlation was not very strong ( $r = 0.37$ ).

These descriptive data on trade have three important implications for analyses of the domestic effects of trade. First, although the passage of time is surely an important dimension of globalization, broad aggregations among countries should be used with caution because of large variations across nations in the international integration of their goods and services markets.

Second, multivariate techniques must be used to isolate the independent effects of globalization on policy. If other variables such as country size and wealth are highly correlated with both market integration and government spending (as is the case here), bivariate correlations between market integration and spending may be very misleading.

Finally, trade has not necessarily grown most quickly in countries that have historically been big traders. As a result, arguments about the appropriateness of levels versus change data are not merely theoretical; the analyst's choice of indicator may have a significant impact on results.

### ***Capital Mobility***

The raw numbers on international capital flows are staggering. But most economists believe these flows tell us little about the freedom of capital to move across borders. Large-scale capital movements into and out of a country could simply represent a highly unstable investment climate. In contrast, if all investments were efficiently allocated *ex ante*, there would be no international capital flows at all, even under conditions of full capital mobility.

In a seminal paper, Feldstein and Horioka [1980] argued that OECD capital markets were, in fact, not at all integrated during the 1970s – because domestic savings were highly correlated with domestic investment. This result was subsequently replicated for the 1980s [Feldstein and Bacchetta 1991]. The savings-investment approach to measuring capital mobility, however, has been widely criticized. Most generally, any factors that affect both savings and investment behavior (such as growth and unemployment) will tend to inflate the bivariate associations between the two. For example, if business cycles were coordinated across countries, savings-investment correlations would be non-zero even in a world of complete capital mobility. But even if one were to proceed with the savings-investment approach, it has two additional limitations that are particularly problematic for this paper.

First, the Feldstein-Horioka approach is much better suited to exploring capital mobility among a group of countries than to measuring the financial openness of different countries within the group [Obstfeld 1995].<sup>6</sup> Second, there are important differences in the dynamics of savings-investment relationships between developed and developing countries [Montiel 1995].<sup>7</sup> As a result, savings-investment correlations are thus not a good indicator for a study such as this that is interested in differences in cross-national differences in capital mobility for a set of countries at all levels of development.

Covered interest rate differentials have become a widely used alternative measure of capital mobility [Frankel 1993, Marston 1995]. These represent the difference between interest rates onshore in one country and those in an offshore benchmark (typically, the eurodollar market), controlling for forward exchange rates. The intuition behind this approach is that in a global capital market, there should be a single interest rate attached

to a given borrowing instrument. This notion cannot be captured by simple nominal or real interest rates because these incorporate market expectations about future exchange rate movements.

There are, however, both empirical and conceptual problems with using covered interest rates in a study of the global effects of capital mobility. Empirically, it is simply not possible to obtain reliable estimates outside the OECD because most forward exchange rate markets are thin and of very recent origin. But even if covered interest rate differentials could be calculated for a sample of developing countries, they would still not be an ideal indicator of capital mobility. The reason is that these differentials can exist either because a government imposes effective barriers capital movements (i.e. indicating capital account closure) or because of significant sovereign risk (i.e. because the markets believe there is some significant risk that a governments will default on its debt). Sovereign risk is generally low in the OECD, and hence it is safe to assume that remaining differentials are largely a function of barriers to movement. But this is clearly not so for many developing countries where sovereign risk is often very high.

Given the problems with savings-investment correlations and covered interest rates for a study like this one, the best way to measure capital mobility for a large sample of countries in both the developed and developing worlds is to monitor government policies towards the capital account. The IMF codifies government restrictions on international capital movements in its *Annual Report on Exchange Arrangements and Exchange Restrictions*. This indicator of capital mobility has been widely used in the OECD-based literature [Alesina, Grilli and Milesi-Ferretti 1994, Eichengreen, Rose and Wyplosz 1995, Garrett 1998b, Quinn 1997]. Since the data are available for a much

larger number of countries around the world, it is potentially a very useful tool in large-N comparative research.

There are two potential objections to using government restrictions on international capital movements as an indicator of capital mobility. On the one hand, for studies such as this one that implicitly conceive of capital mobility as more or less an exogenous constraint on economic policy choice, the fact that capital controls are also a policy instrument of government is troubling. But this is not a major concern if one follows the dominant position in the literature that government policy choices in this area are heavily constrained by market behavior, rather than vice-versa [Bryant 1987].

On the other hand, the presence or absence of government restrictions may not be very highly correlated with actual capital mobility. Some worry about the effectiveness of capital controls in the contemporary period, but the best evidence seems to suggest that government restrictions on the capital account do have a significant effect on the behavior of capital [Edwards 1998]. Others suggest that broader facets of national regulatory regimes (banking regulations, for example) that are not captured by the IMF's codification act as important barriers to capital movements [Dooley 1995]. Existing studies, however, suggest that the correlation is quite high between capital controls and other measures of capital mobility [Edwards 1998, Hallerberg and Clark 1997, Garrett 1998b].

In this paper, I rely on a government restrictions-based measure of capital mobility collected by Kim [1997]. The data set comprises annual dummy variables from 1973 to 1996 for 182 countries, indicating the presence or absence of government restrictions on capital account transactions based on the IMF's annual *Exchange*

*Arrangements and Exchange Restrictions.* Although one might be worried about the imprecision of these simple dummy variables, Kim's data are highly correlated with Quinn's [1997] more elaborate scales for the relatively small set of countries for which the latter are available.<sup>8</sup> Thus, we can proceed with some confidence that the data used in this paper capture important elements of cross-national and inter-temporal variations in capital mobility for a large set of countries up to the very recent past.

Figure 1 (right-hand scale) reports annual data for the portion of countries in each year with no government restrictions on international capital movements. These data tell a familiar story. Capital mobility increased markedly from the early 1970s (when less than 15% of countries had no capital controls) to the mid 1990s, when almost 30% of countries had not controls. Moreover, it is clear that the pace of financial globalization increased over the period, with the 1990s in particular witnessing a dramatic increase in the number of countries removing barriers to international capital movements.

As was the case for trade, these over time plots conceal considerable cross-national variations in capital mobility (see Table 1). Only 25 countries had no capital controls on IMF definitions for every year in the 1985-1995 period, and almost all of these were in the OECD and OPEC. Turning to changes in capital mobility between the pre- and post-1985 periods, capital controls were reduced in 38 countries, but they increased in 15 nations.<sup>9</sup> Not surprisingly, most of the countries with either large increases or large decreases in capital mobility were in the developing world, though as is well known residual capital controls were removed in some EU nations pursuant to the Single European Act. The correlation between levels of capital mobility in the post-1985 period and increases in capital mobility from the previous period was moderate ( $r=0.46$ ).

Finally, one should note that capital mobility and trade were not at all strongly correlated across countries, notwithstanding the fact that, in aggregate, both have increased in more or less similar ways in the past two decades. The correlation between post-1985 trade and post-1985 capital mobility was only 0.25. Using the (pre- and post-1985) change variables, the correlation was only 0.06. Thus, in addition to re-emphasizing the importance of analyzing trends both over time and across countries, the capital mobility data also show the expansion of goods and services trade and international financial activity have not gone hand in hand. Studying one is unlikely to yield results that would also hold for the other.

### ***Government Spending***

Figure 3 plots annual cross-national averages since 1970 for the two broadest available measures of the size of the public sector – total central government spending and consumption expenditures for general government, both as a % of GDP.<sup>10</sup> The total spending measure has the benefit of comprising all types of government activity, but it substantially under represents the size of the public economy in countries where fiscal policy is decentralized. In general, decentralization is more pronounced in richer countries than in poorer ones. The consumption-spending variable, in contrast, takes into account all levels of government. But this only measures the purchase of goods and services by government. It therefore does not include income transfer programs such as pensions and sickness and unemployment benefits, public investment, interest payments on the public debt, and other types of government activity. This is more of a limitation in the OECD than elsewhere because generous income transfer programs, in particular, are much more prevalent in the wealthier nations. Nonetheless, the correlation between post-



1985 levels of central government spending and general government consumption was quite high (0.67), whereas that for pre and post 1985 changes in the two spending measures was a more moderate .37.

The prudent course of action is to analyze the relationships between globalization and both measures of spending, but to recognize that the results for the OECD countries might not be as informative as those of studies devoted solely to these countries. There are, however, numerous studies on the domestic policy effects of globalization in the OECD with which the result of this paper can be compared [Garrett 1998a, 1998b, Swank 1998a, 1998b].

Figure 3 about here

Average government spending on both measures increased substantially and in lock step from 1970 to the mid 1980s. Total central government spending rose from 20% to 30% of GDP, whereas general government consumption increased from around 14% to 18% of GDP. Both indicators then stabilized and declined marginally until the public economy began to grow again with the onset of a deep international recession. The only divergence in spending trends on the two indicators was apparent in the 1992-1995 period, when total spending rose but government consumption declined by an average of around 1 point of GDP.

These data might seem to provide some superficial support for the efficiency thesis – spending growth slowed down at precisely the point (the mid 1980s) when market integration took off. But of course many factors other than market integration might be responsible for the spending slow down in the past decade. Moreover, as was

the case for trade and capital mobility, these worldwide averages likely conceal considerably variations in patterns of spending among countries.

The mean 1985-1995 level of central government spending for the 132 countries for which there are World Bank data was 30% of GDP and the standard deviation was 12%. Central government spending comprised more than 50% of GDP in 8 countries but was less than 15 % in 14 other countries. Mean 1985-1995 government consumption constituted 17% of GDP and the standard deviation was 7% for the 173 countries for which the data are available, Government consumption constituted more than 30% of GDP in 13 countries and under 10% in 20 countries.

Comparing changes in government spending from the 1970-1984 to 1985-1995 periods shows even greater cross-national variations. The mean increase in total central government spending was 2.1% of GDP, but the standard deviation was 7.0%. Spending increased by over 10 points of GDP in 10 countries, but declined by more than 5% in 12 others. The mean and standard deviation for changes in general government consumption were 0.5% and 5.2% of GDP respectively. Government consumption increased by more than 10 points of GDP in 5 countries but decreased by more than 5 points in 10 others.

In sum, two things stand out in the descriptive data on government spending. On the one hand, there is some evidence of a slowdown in the expansion of the public economy in the post-1985 period. The question is whether, as the efficiency perspective asserts, globalization caused this slowdown? On the other hand, cross-national variations in spending levels and spending trajectories are sufficiently large to render suspect any generalizations based on worldwide trends over time. Thus, the best way to test the relative merits of the compensation is to ask whether countries in which spending is

lower or spending growth has slowed down more also had more internationally integrated markets, or markets that have internationalized more quickly?

## **4. Methodology**

### ***Existing Research***

Rodrik [1998a] is the most sophisticated study of the relationship between globalization and the size of government for the largest set of countries for which the relevant data are available (100 or more). He asks a simple question: is the trade-spending relationship negative, as the efficiency hypothesis would suggest, or positive, as would be consistent with the compensation view? His baseline equations to answer this question (in his tables 1-3) regress the log of the level of government spending on the log of the level of trade, a battery of control variables (including GDP per capita, the dependency ratio, urbanization, land area and population, all expressed in logs), and a set of region dummy variables. Rodrik reports a robust and positive association between the logged level of trade and the logged level of spending.

There are, however, two limitations to this analysis. First, Rodrik's regressions do not assess the effects of capital mobility. Second, he does not analyze the effects of changes in trade on changes in government spending. Both issues require some elaboration.

The absence of capital mobility from Rodrik [1998a] is an important lacuna because for most people the removal of barriers to international capital movements is the sine qua non of the contemporary process of globalization. In related work, Rodrik [1997:

62-3] conjectures that capital mobility should be associated with lower levels of spending, and mitigate the trade-spending relationship. He finds support for this hypothesis, but based only on analysis of the OECD countries, rather than the worldwide sample. Given the manifold differences between these wealthy stable democracies and the bulk of developing countries, one should be hesitant to extrapolate from these findings to the rest of the world

Quinn [1997] is the only study of the spending-capital mobility relationship that extends beyond the OECD. In stark contrast with Rodrik's conjecture and his OECD evidence, Quinn finds that increases in his financial liberalization index were associated with higher levels of government spending (his table 4). That is, Quinn's analysis of the effects of capital mobility support the compensation hypothesis, consistent with Rodrik's trade results, but contra to his conjecture about capital mobility.

There are, however, important weaknesses in Quinn's analysis. The geographic coverage of Quinn's 38-country sample is limited. It includes only 18 nations outside the OECD, and these are heavily concentrated in the wealthiest non-OECD countries in East Asia and Latin America. The specification of Quinn's spending regressions is also less elaborate than Rodrik's. Quinn, unlike Rodrik, does control for lagged levels of spending (see below), but his control variables are limited. Perhaps most importantly, Quinn does not control for the level of trade, or other variables Rodrik found significantly to affect spending. It is thus an open question as to whether Quinn's implicit disconfirmation of Rodrik's conjecture about the negative effects of capital mobility on government spending holds around the whole world.

The second limitation in Rodrik's analysis is the fact that his results are restricted to analyzing the effects of levels of trade, rather than changes in trade. Rodrik takes into account one potential problem with this – the strong (negative) correlation between a country's size and its trade exposure – by controlling for both population and land area. However, he does not address the related issue of whether the right measure of globalization is the level of market integration or changes in market integration.

Noted trade economist and econometrician Edward Leamer [1996] has addressed this question with respect to the debate over the effects of trade on wage inequality in the US, and Ronald Rogowski [1998] has applied his critique to the globalization and spending research. The core of Leamer's position is that one should analyze the effects of changes in market integration because it is these, rather than levels of integration, that affect prices:

The first step in the argument is to get clear the circumstances in which price reductions for labor-intensive tradables will drive down wages in high-wage markets. The Heckscher-Ohlin model is a particularly rich conceptual setting for thinking about the issue. This is a model that ought to remind us that **prices are set on the margin**. It doesn't matter that trade in manufactures is a small proportion of GDP. It doesn't matter that employment in apparel is only one percent of the workforce. What matters is whether or not the marginal unskilled worker in the apparel sector, sewing the same garments as a Chinese worker whose wages are 1/20<sup>th</sup> of the US level. Then lower prices for apparel as a consequence of increased Chinese apparel supply causes lower wages for all unskilled workers in the same regional labor pool as the US garment worker [Leamer 1996: 4] (emphasis in original).

Applying this critique to the globalization-spending relationship is straightforward. Countries that are big traders might have large public economies for a variety of reasons. Cameron [1978] argues that the small open economies of continental Europe were more likely to foster the development of strong trade unions and left-wing

parties than other OECD countries in the first half of the 20<sup>th</sup> century, and that these political conditions in turn promoted higher levels of government spending in the post WWII period. This is clearly a different argument from one asserting that increasing trade in recent years has led to more government spending in the same period, as the compensation hypothesis would suggest. Indeed, Garrett and Mitchell [1999] argue that in the OECD the opposite is true – increases in trade are associated with cuts in government spending. This is consistent with Leamer’s position. Increases in trade have increased competitiveness pressures, which has led governments – at the margins – to cut back their spending.

The simple point of this subsection is that there are good reasons to re-evaluate the arguments and evidence presented by Rodrik and Quinn. In particular, two methodological innovations are required. First, the effects of trade and capital mobility on government spending should be analyzed jointly. Second, the relationships between globalization and spending should be analyzed in terms of changes as well as levels.

### ***Estimation***

One would ideally wish to test the compensation and efficiency hypotheses by analyzing data that pool national time series. But data limitations significantly reduce the desirability of this strategy. If analysis were restricted to rectangular panels, the maximum sample would be 40-50 countries (the OECD plus a set of NICs) beginning in the early 1980s. The problem with such regressions would not be methodological (robust estimates could be obtained) but substantive. But we would like to know about the domestic policy effects of globalization throughout the world, not only in the wealthier countries. Moreover, beginning in the 1980s would obviate the possibility of having a “pre-globalization” benchmark.

Employing a cross-sectional design alleviates both problems. The country coverage can be extended from a minimum of 87 to a maximum of 116 countries. The major weakness of this strategy, of course, is that it is harder to capture over-time effects. Nonetheless, a dynamic element can be introduced by using change measures for both the globalization and economic policy variables.

Let us begin with a simple baseline OLS regression model of the interactive effects of trade and capital mobility on government spending:

$$SPEND = a + b_1TR + b_2CM + b_3TR.CM + b_kCONTROLS + k_nREGIONS + \mathbf{m}(1)$$

In this equation, SPEND is the level of spending (either the total for central government or general government consumption), TR is the level of exposure to trade, CM is the level of capital mobility, and TR.CM is their multiplicative product. The battery of CONTROLS comprises per capita GDP, interest payments on public debt (in the central government spending equations), population, land area, the dependency ratio of people under 15 and over 64 to those of working age, and urbanization. REGION stands for four regional dummy variables from Barro and Lee [1994] – East Asia, Latin America, OECD and Sub-Saharan Africa. All the variables except the region dummies are expressed as logs.<sup>11</sup> This allows for coefficients to be interpreted as elasticities (“an 1 percent change in X is associated with a z percent change in Y”). Furthermore, the log transformations effectively deal with the heteroskedasticity problems that would otherwise plague the analysis, given the long right hand tails in many of the variables.

Thus, the basic structure of equation (1) is similar to Rodrik’s baseline model, with two important differences. First, the model estimates the effects of capital mobility – both directly and interactively with trade. Equation (1) can thus directly assess whether Rodrik’s conjecture about the constraining effect of capital mobility is borne out in the

global data. If Rodrik is correct, one would expect either that  $b_2 < 0$  or that  $b_3 < 0$ , or both. Second, Rodrik uses a variety of different periods in his analysis whereas I concentrate on the 1985-1995 period. One can be confident that this period is long enough to reduce the risk that business cycle effects contaminate the averages. Moreover, my analysis moves the data forward from 1992 (in Rodrik's case) to 1995. Three years may not seem a lot, but this was a period of rapid capital market integration around the world.

In order to assess the effects of the process of globalization – that is, changes in trade and capital mobility – rather than the impact of levels of market integration– equation (1) was modified thus:

$$\Delta SPEND = a + b_i SPEND_{t-1} + b_1 \Delta TR + b_2 \Delta CM + b_3 \Delta TR \cdot \Delta CM + b_k \Delta CONTROLS + k_n REGIONS + m \quad (2)$$

In equation (2) first differences of all the relevant variables were taken.<sup>12</sup> The first differences were operationalized as  $\ln(\text{average } 1985-1995) - \ln(\text{average } 1970-1984)$ . The lagged (i.e. average 1970-1984) was included as a regressor to take into account the strong likelihood that government spending tends to converge over time. If spending increased more slowly after 1985 in countries with higher levels of prior spending,  $b_i$  would be significantly negative. This is the type of convergence setup that is standard in cross-national growth research, and it is reasonable to assume that similar forces also affect government spending. There is clearly a limit to the size of the public economy (100% of GDP in equilibrium), and it is likely that the “optimal” level of government spending (i.e. the level towards which spending converges) is considerably lower than this. Adding the lagged spending level to the right hand side of equation (2) allows us to estimate the strength of any such pressures for convergence.



Nonetheless, the most important elements of equation (2) concern the parameter estimates for the three-term globalization interaction. As in equation (1), positive estimates for  $b_1$ ,  $b_2$  and  $b_3$  would be consistent with the compensation hypothesis whereas negative coefficients would support the efficiency view.

Finally, I also estimated equations that test whether the process of spending convergence was conditional on changes in globalization:

$$\Delta SPEND = a + b_i SPEND_{t-1} + b_1 SPEND_{t-1} \cdot \Delta TR + b_2 SPEND_{t-1} \cdot \Delta CM + b_3 SPEND_{t-1} \cdot \Delta TR \cdot \Delta CM + b_k \Delta CONTROLS + k_n REGIONS + m \quad (3)$$

In equation (3), positive (negative) estimates for  $b_1$ ,  $b_2$  and  $b_3$  would suggest that the tendency for historically big spenders to have slower rates of spending growth would be stronger in countries with greater increases in trade and capital mobility. Such a pattern of “conditional convergence” is implicitly what many purveyors of the globalization conventional wisdom likely have in mind when they talk about races to the bottom in economic policy.

## 5. Results

### ***Levels of Globalization and Spending***

Table 2 presents the results of levels regressions based on equation (1). Columns 1-3 use total central government spending as the dependent variable, general government consumption is the dependent variable in columns 4 and 5. Column 1 simply adds the capital mobility variable to a specification that is very similar to Rodrik’s [1998a]. Following Wagner’s law, wealthier countries tended to have higher levels of spending

(though this effect was not significant in column 1). Countries with larger populations tended to have smaller public economies, but again this effect was insignificant. In contrast, larger land area was positively and weakly significantly associated with greater central government spending. Coupled with the negative parameter estimate for urbanization, this suggests that the more dispersed a country's population, the more costly it is to provide the same level of public goods, and hence the higher is spending. Somewhat surprisingly, the dependency ratio (children and the aged to the working age population) was not significantly positively associated with consumption spending.

Table 2 about here
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All of the parameter estimates for the region dummy variables were negative in column 1, and they were significantly negative in the cases of East Asia and Sub-Saharan Africa. One should be careful to note here that these coefficients compare spending in each region with the excluded category – that is all countries not put into one of the four regional labels. This is a large and diverse set, including Eastern Europe and the former Soviet Union, the Middle East and North Africa, South Asia, the Pacific. The safest approach is thus simply to conclude that there are important regional differences in patterns of government spending that need to be controlled.

For present purposes, the parameter estimates for trade and capital mobility are the most statistics in column 1. Consistent with Rodrik's central result, higher levels of trade were associated with higher levels of central government spending. In contrast with his conjecture, however, although the capital mobility coefficient was negative, it was not statistically significant at even the .1 level.

Column 2 tests whether there is more evidence of a negative capital mobility effect that was mediated through trade – i.e. by adding a multiplicative trade.capital mobility term. This seems not to be the case. The trade coefficient was large and positive and of very similar magnitude to column 1. The capital mobility parameter was still negative and insignificant, though it was more than 10 times larger than in the first column. Finally, the interactive term was positive, but insignificant. This three-term interaction specification was highly jointly significant ( $p=.007$ ) and thus warrants further exploration (see below).

Column 3 added interest payments on the public debt to test whether controlling for this portion of its spending affected the parameters of interest. The simple answer is that it did not. The interest payment coefficient was positive, as one would expect, but it was insignificant. Its inclusion did reduce the size of the trade parameter estimate somewhat, but it was still large and highly significant.

Turning to the estimates of general government consumption in columns 4 and 5, most of the control variables were significant and in the expected directions.<sup>13</sup> But this did not affect the positive relationship between levels of trade and government spending. The only potentially interesting difference between the central government total spending and general government consumption equations is that the capital mobility term was positive in columns 4 and 5, whereas the trade.capital mobility interaction term was negative (i.e. the opposite of the total central spending results). Moreover, the three-term interaction specification was jointly significant at the .078 level.

In order more precisely to test Rodrik's conjecture about the effects of capital mobility on government spending – and further to explore the differences between the

trade-capital mobility interaction specifications – I generated counterfactual estimates of both total central government spending and general government consumption based on columns 2 and 5. In these counterfactuals (reported in Figure 3), all the other variables in the equations were set at their means, and then “high” and “low” values of trade and capital mobility were taken to ascertain the substantive effects of different combinations of these variables. The “high” (“low”) values represent one standard deviation above (below) the mean (logged) values of the globalization variables.<sup>14</sup>

Figure 3 about here

Two features of the figure need to be highlighted. First, variations in levels of trade exposure were far more consequential for government spending than differences in capital mobility. The move from the low to high levels of trade was associated with approximately a 16-percentage point increase in the GDP share of total central government spending, whereas the corresponding figure for general government consumption was roughly 5 points. Second, the effects of capital mobility were both very small relative to those of trade (less than one point of GDP), and inconsistent. At low levels of trade, moving from low to high capital mobility would have decreased total central government spending marginally but been associated with a little more general government consumption. This pattern was reversed at high levels of trade, but again the magnitude of these capital mobility effects was small.

In sum, the results in Table 2 and Figure 3 strongly supportive Rodrik’s finding that countries with higher levels of trade also have larger public economies. The results do not, however, support his conjecture that this positive relationship is undermined by

capital mobility. Let us now consider the relationships between changes in globalization and changes in government spending.

### ***Changes in Globalization and Spending***

Table 3 reports regression results replicating the three-term interaction specification from Table 2, but using data on changes in the independent and dependent variables between 1970-1984 and 1985-1995. Furthermore, to take into account the likelihood that spending patterns would tend to converge, the lagged log level of spending was introduced as a regressor.<sup>15</sup> Countries with larger public economies in the 1970-1984 were likely to have grown less quickly in the post-1985 period.

Table 3 about here
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Two of the control variables were significant in the change in total central government spending equation. Per Wagner's law, faster growth in GDP per capita was associated with faster growth in spending. As might have been expected, total spending grew faster in countries where interest payments on the public debt also increased more quickly.  $\Delta$ GDP per capita, however, was not significant in the general government consumption equation. Perhaps not surprisingly, the more structural (i.e. less variant over time) controls such as population and urbanization were insignificant in the change regressions. Notwithstanding this, however, significant regional differences in spending growth were apparent.

Table 3 also demonstrates a strong convergence tendency in government spending. The parameter estimates for lagged levels of expenditures were large, negative and highly significant in both the total central government spending and general

government consumption equations. The higher the level of government spending before 1985, the smaller the growth in spending after 1985. But one point must be emphasized here. These coefficients demonstrate that there was some “natural” pressure on big spenders to slow down the pace of public sector expansion. This says nothing, however, about the impact of increased market integration on changes in spending.

The first thing to note about the parameter estimates on the globalization variables is that changes in trade were negatively associated (significantly in the case of general government consumption) with changes in the size of the public economy. This is the opposite of the very robust levels results. But it is wholly consistent with the efficiency view that increasing trade competition – rather than whether a country has historically been a big trader – has put downward pressure on government spending. This finding is very similar to that Garrett and Mitchell [1999] report for the OECD.

Neither changes in capital mobility nor the  $\Delta$ trade.  $\Delta$ capital mobility term was significant in either equation in Table 3. At first blush, this would suggest that changes in capital mobility had no more impact on changes in spending patterns than did levels of financial market integration. The three-way globalization interaction specification, however, was jointly significant in the case of changes in general government consumption. As a result, I estimated a set of counterfactuals based on high and low changes in trade and capital mobility using the same methodology as in Figure 3. Note that the scores in these cells in Figure 4 represent estimated proportionate changes in spending (that is  $\ln(1985-1995) - \ln(1970-1984)$ ) – rather than percentage points of GDP – for high and low levels of changes in globalization. The low scores for both trade and

capital mobility represent declines in globalization, whereas the high scores indicate increases.<sup>16</sup>

Figure 4 about here

Unlike the levels counterfactuals, the changes in logs data are supportive of Rodrik's conjecture that the combination of high capital mobility and high trade has adverse effects on the public economy. In cases of high increases in both measure of market integration, government spending is estimated to have decreased by 9.9% between the pre and post 1985 periods, whereas the counterfactual estimate in the low-low cell was for spending to have increased by 7.3%.

The off-diagonals are also interesting in this figure. The high trade-low capital mobility growth cell generated very little change in government consumption (+0.8%), whereas the low trade-high capital mobility cell was estimated to have been associated with a 16.8% increase. This suggests that heightened capital mobility, on its own, created incentives for governments to expand the public economy, but that these were overwhelmed by efficiency considerations in the context of fast trade growth. In contrast, faster growth in trade always put a brake on government spending, but this was considerably more pronounced in the context of more rapid financial liberalization.

In sum, Table 3 and Figure 4 present a very different picture of the relationship between the process of globalization (i.e. changes in market integration) and changes in government spending than was apparent in the levels regressions. The changes result directly contradict Rodrik's claim about the positive relationship between trade and the size of government. But they do support his conjecture about the constraining effects of capital mobility (whereas this was not true for the levels results). Taken together, these

results are much more consistent with the efficiency approach to globalization, rather than the compensation one – in contrast with the thrust of the levels results.

### ***Conditional Convergence in Spending***

The final set of estimated regression equations is reported in Table 4. The only difference between these equations and those in Table 3 is that the lagged level of spending was interacted with the three-term globalization specification, rather than entering the terms independently. This allows us to test whether constraint on post-1985 changes in spending imposed by 1970-1984 levels of spending was exacerbated (the efficiency view) or mitigated (the compensation perspective) by faster increases in market integration. One can interpret these coefficients as estimates of “conditional convergence”: to what extent was the tendency for spending to increase less quickly after 1985 in countries with bigger public economies in the 1970-1984 period exacerbated or mitigated by changes in market integration?

Table 4 about here
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The parameter estimates in Table 4 are consistent with the efficiency view – conditional convergence was more pronounced in countries who economies globalized faster between the pre and post 1985 periods. The coefficients for the lagged spending,  $\Delta\text{trade}$  and lagged spending,  $\Delta\text{trade}$ ,  $\Delta\text{capital mobility}$  were negative in both equations – above and beyond the negative coefficient on the lagged spending terms themselves. Both sets of interaction specifications were jointly significant at traditional levels, so I chose to interpret these interactions in terms of the same type of counterfactual estimates I have used previously.



The only difference between the computation of the counterfactuals in Figure 4 and those for conditional convergence Figure 5 is that in the latter, the trade-capital mobility interactions were multiplied by the lagged level of spending (i.e. based on the regressions in Table 4) Thus, the cells represent the estimated impact on changes in government spending of high and low values of changes in globalization, where each of these effects was estimated at the mean lagged level of government spending.

Figure 5 about here
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The basic thrust of these estimates is similar to those reported in Table 4.

Estimated spending growth between the pre and post 1985 periods was fastest in cases combining slow trade growth with rapid financial liberalization, but slowest in the high-high cells – where the globalization process was most pronounced. Faster growth in capital mobility was associated with the largest spending growth in cases of slow trade growth, whereas rapid trade expansion in the context of small increases in capital mobility did not promote much public sector expansion. Although these trends were consistent across the total central government spending and general government consumption regressions, they were much more pronounced in the latter case. Perhaps most notably, the high trade growth-high capital mobility increase cell is estimated to have reduced general government consumption by 12.2 percent.

## **Conclusion**

Up to the present, there has been a marked disjuncture between the (almost universally held) views of politicians and policy commentators about the effects of globalization on national economic policy and the results of rigorous academic work. The

conventional view is that globalization-constraints are omnipresent. The scholarly research has suggested that, in fact, the globalization promotes government activism. This disjuncture has been very helpful analytically. It has highlighted the fact that, in addition to the competitiveness/efficiency constraints most everyone understands, globalization has political effects that may increase the incentives for governments to redistribute wealth and risk in favor of short-term market losers.

The literature on the relationship between globalization and government spending is the most developed. In recent important work on samples that include both the OECD and developing countries, Rodrik [1998a] finds that exposure to trade is associated with more government spending and Quinn [1997] finds that capital mobility is also associated with bigger government.

This paper has demonstrated that Rodrik and Quinn's results do not hold up if one moves from analyzing relationships between levels of globalization and levels of spending to over-time changes in these variables. Indeed, regression analysis using the changes data shows that the combination of rapid increases in trade and capital mobility has indeed put pronounced downward pressures on government spending around the world.

The findings in this paper thus provide much more support for the conventional wisdom about the domestic effects of globalization than previous academic studies. Given that globalization is, by definition, an over time process, and given that there are strong economic arguments that its domestic effects should be apparent only at the margins, there is good reason to think that the results in this paper are more informative about the contemporary period than those in Rodrik and Quinn. If this is so, a new

research agenda is suggested. Does globalization generate the large social and economic dislocations that Rodrik and others point to? If so, why are these politically less salient than economic constraints on the state? Are some countries – for example, wealthier nations that are stable democracies – more responsive to societal demands for protection and better equipped to resist globalization pressures for public sector contraction than others?

## References

- Alesina, Alberto, Vittorio Grilli and Gian Maria Milesi-Ferretti. 1994 "The Political Economy of Capital Controls." CEPR Discussion Paper No. 793.
- Barro, Robert and Jong-Wha Lee. 1994. Dataset for a Panel of 138 Countries. Harvard University.
- Bryant, Ralph. 1987. International Financial Integration. Washington, D.C: Brookings.
- Dooley, Michael P. 1995. A Survey Of The Academic Literature On Controls Over International Capital Transactions. NBER Working Paper 5352.
- Edwards, Sebastian. 1998. "Capital Flows, Real Exchange Rates, and Capital Controls: Some Latin American Experiences". NBER Working Paper 6800.
- Eichengreen, Barry, Andrew Rose, and Charles Wyplosz. 1995. "Exchange Market *Economic Policy* 21: 249–312.
- Feldstein, Martin and P. Bacchetta. 1991. National Savings and International Investment. In Douglas Bernheim and John Shoven (eds.), *National Savings and Economic Performance*. Chicago: University of Chicago Press.
- Feldstein, Martin and Charles Horioka. 1980. Domestic Savings and International Capital Flows. *The Economic Journal* 90: 314 – 329.
- Frankel, Jeffrey. 1993. *On Exchange Rates*. Cambridge: MIT Press.
- Garrett, Geoffrey. 1998a. Global Markets and National Politics: Collision Course or Virtuous Circle? *International Organization* 52: 787-824.
- Garrett, Geoffrey. 1998b. *Partisan Politics in the Global Economy*. New York: Cambridge University Press.
- Garrett, Geoffrey and Deborah Mitchell. 1999. "Globalization and the Welfare State". Mimeo. Yale University.
- Hallerberg, Mark and William Roberts Clark. 1997. How Should Political Scientists Measure Capital Mobility? Paper presented at the Annual Meetings of the American Political Science Association.
- Kim, Woonchan. 1997. Does Capital Account Liberalization Discipline Budget Deficit?. MS. Harvard University.
- Leamer, Edward E. 1996. "In Search of Stolper-Samuelson Effects on US Wages". NBER Working Paper 5427.
- Marston, Richard. 1995. *International Financial Integration*. New York: Cambridge University Press.
- Montiel, Peter J. Capital Mobility in Developing Countries. *World Bank Economic Review* 8: 311-350.
- Obstfeld, Maurice. 1995. International Capital Mobility in the 1990s. In Peter Kenen (ed.), *Understanding Interdependence*. Princeton: Princeton University Press.
- Quinn, Dennis. 1997. The Correlates of Changes in International Financial Regulation. *American Political Science Review* 91: 531-552.
- Rodrik, Dani. 1997. *Has Globalization Gone Too Far?* Washington, DC: Institute for International Economics.
- Rodrik, Dani. 1998a. Why Do More Open Economies Have Bigger Government? *Journal of Political Economy* 106: 997-1032.

- Rodrik, Dani 1998b. Who Needs Capital Account Convertibility? *Essays In International Finance* No. 207. International Finance Section, Economics Department, Princeton University.
- Rogowski, Ronald. 1998. Globalization and convergence: getting the theory and the evidence right. MS. UCLA.
- Ruggie, John Gerard. 1982. International Regimes, Transactions and Change: Embedded Liberalism in the Postwar Economic Order. *International Organization* 36: 379-416.
- Swank, Duane. 1998a. "Funding the Welfare State". *Political Studies* 46: 672-692.
- Swank, Duane. 1998b. "Global Capital, Democracy and the Welfare State". Political Economy of European Integration Working Paper 1.66.
- Wood, Adrian. 1994. *North-South Trade, Employment and Inequality*. New York: Oxford University Press.

**Table 1. Globalization and Government Spending**

	Trade		Capital mobility		Total central government spending		General government consumption	
	1985-1995	change <sup>a</sup>	1985-1995	change	1985-1995	change	1985-1995	change
Afghanistan	.	.	0	-0.17	.	.	.	.
Albania	67	.	0	0	34	.	13	5
Algeria	43	-18	0	0	.	.	17	3
Angola	71	.	0	0	.	.	37	.
Antigua and Barbuda	210	.	1	0.75	.	.	20	.
Argentina	16	2	0.25	0.25	13	6	4	-7
Armenia	99	.	0	0	.	.	16	.
Aruba	.	.	0	0	.	.	.	.
Australia	37	5	1	1	26	4	18	1
Austria	76	8	0.42	0.42	40	5	19	2
Azerbaijan	.	.	0	0	.	.	24	.
Bahamas, The	.	.	0	0	19	-1	12	-1
Bahrain	198	.	1	0	35	1	24	8
Bangladesh	27	6	0	0	12	2	4	2
Barbados	101	-29	0	0	33	3	19	4
Belarus	113	.	0	0	38	.	22	.
Belgium	141	21	1	0	51	4	15	-1
Belize	121	-2	0.17	-0.08	30	5	16	-4
Benin	62	1	0	0	.	.	12	2
Bhutan	81	.	0	0	38	2	21	-3
Bolivia	40	-5	0.83	0.08	19	.	12	0
Bosnia and Herzegovina	.	.	0	.	.	.	.	.
Botswana	123	15	0	0	39	5	24	6
Brazil	16	-2	0	0	30	13	15	5
Brunei	.	.	0.08	0.08	.	.	.	.
Bulgaria	93	.	0	0	47	.	13	7
Burkina Faso	39	2	0	0	14	3	15	3
Burundi	38	7	0	0	.	.	11	0
Cambodia	17	.	0	0	.	.	8	-15
Cameroon	41	-12	0	0	20	2	11	1
Canada	56	8	1	0	24	2	23	1
Cape Verde	86	-20	0	0	.	.	24	.
Central African Republic	47	-15	0	0	.	.	16	-1
Chad	62	5	0	0	31	15	12	-3
Chile	59	18	0	0	23	-10	11	-4
China	30	19	0	0	9	.	13	2
Colombia	33	4	0	0	14	1	11	1
Comoros	55	-10	0	0	41	-5	21	-8
Congo	104	0	0	0	.	.	19	2
Costa Rica	75	4	0.08	-0.25	26	5	16	1
Côte d'Ivoire	65	-8	0	0	.	.	16	0
Croatia	116	.	0	0	41	.	26	.
Cyprus	103	-8	0	0	32	2	17	2

**Table 1. Globalization and Government Spending**

Czech Republic	109	.	0	0	42	.	21	.
Denmark	65	1	0.67	0.67	40	3	26	1
Djibouti	121	.	1	0.5	36	.	40	.
Dominica	118	0	0	0	.	.	21	-4
Dominican Republic	60	14	0	0	15	-1	6	-3
Ecuador	55	7	0.67	-0.33	15	2	10	-3
Egypt, Arab Rep.	59	3	0	0	41	-8	13	-9
El Salvador	49	-14	0	0	13	-1	11	-2
Equatorial Guinea	103	10	0	0	.	.	28	3
Eritrea	.	.	0	0	.	.	40	.
Estonia	.	.	0.17	0.17	27	.	18	.
Ethiopia	26	.	0	0	24	1	14	-1
Fiji	107	11	0	0	27	2	18	2
Finland	55	-3	0.42	0.42	35	7	22	4
France	44	4	0.25	0.25	44	6	19	2
Gabon	88	-17	0	0	29	-9	17	2
Gambia, The	120	27	0.42	0.42	21	-4	12	-25
Georgia	87	.	0	0	.	.	10	-2
Germany	47	.	1	0	33	.	20	.
Ghana	45	19	0	0	15	0	11	0
Greece	55	13	0	0	52	15	14	3
Grenada	106	-23	0	0	30	.	20	0
Guatemala	39	-2	0.58	0	10	-1	7	0
Guinea	55	.	0	0	22	.	10	.
Guinea-Bissau	57	13	0	0	51	-3	10	-13
Guyana	151	20	0	0	.	.	19	-4
Haiti	35	-6	0	0	.	.	8	-1
Honduras	65	-2	0.25	-0.42	.	.	13	1
Hong Kong	257	80	1	0	.	.	8	1
Hungary	70	-9	0	0	55	1	11	1
Iceland	68	-5	0	0	32	5	19	4
India	19	6	0	0	17	4	11	2
Indonesia	48	4	1	0	19	-1	9	0
Iran, Islamic Rep.	32	-13	0	-0.33	21	-16	13	-7
Iraq	.	.	0	0	.	.	.	.
Ireland	117	21	0.33	0.33	45	4	16	-1
Israel	72	-8	0	0	48	-19	31	-7
Italy	42	0	0.42	0.33	49	12	17	2
Jamaica	117	34	0	0	40	3	14	-4
Japan	19	-6	0.92	0.5	18	3	9	0
Jordan	122	5	0	0	34	0	25	-5
Kazakstan	.	.	0	0	.	.	11	.
Kenya	57	-4	0	0	27	4	17	-1
Kiribati	131	22	0.83	0.83	.	.	50	15
Korea, Rep.	64	2	0	0	16	0	10	0
Kuwait	99	-3	1	0	70	35	36	22

**Table 1. Globalization and Government Spending**

Kyrgyz Republic	73	.	0	0	.	.	21	.
Lao PDR	31	.	0	0	.	.	9	3
Latvia	104	.	0.17	0.17	29	.	13	5
Lebanon	93	.	1	0	29	.	17	.
Lesotho	143	19	0	0	56	25	21	1
Liberia	.	.	0	-1	25	-1	19	5
Libya	.	.	0	0	.	.	.	.
Lithuania	120	.	0.25	0.25	31	.	18	.
Luxembourg	190	19	0	0	41	3	13	1
Macao	136	.	.	.	.	.	7	3
Macedonia, FYR	83	.	0	0	.	.	18	.
Madagascar	40	5	0	0	17	2	8	-3
Malawi	58	-4	0	0	30	4	18	2
Malaysia	145	52	1	0.08	28	1	14	-2
Maldives	109	17	1	0.5	48	10	26	9
Mali	55	11	0	0	30	9	13	3
Malta	176	12	0	0	41	-1	19	0
Marshall Islands	.	.	0.33	0.33	.	.	.	.
Mauritania	110	5	0	0	37	-6	13	-10
Mauritius	125	27	0	0	23	-2	12	-1
Mexico	32	12	0	-0.83	22	5	9	0
Micronesia, Fed. Sts.	.	.	0.33	0.33	.	.	.	.
Moldova	.	.	0.08	0.08	.	.	19	.
Mongolia	87	14	0	0	23	.	27	-1
Morocco	56	7	0	0	29	-2	16	-1
Mozambique	75	21	0	0	.	.	14	-4
Myanmar	7	-9	0	0	14	-2	.	.
Namibia	118	.	0	0	39	.	30	6
Nepal	39	15	0	0	17	4	9	1
Netherlands	102	4	1	0.17	54	3	15	-1
Netherlands Antilles	.	.	0	-0.17	26	1	.	.
New Zealand	57	0	1	1	40	5	16	1
Nicaragua	62	0	0	-0.5	42	14	26	11
Niger	40	-8	0.08	0.08	.	.	14	4
Nigeria	55	19	0	0	19	4	14	1
Norway	72	-8	0.08	0.08	40	6	21	2
Oman	85	-19	1	0	45	-6	32	5
Pakistan	36	5	0	0	23	6	14	3
Panama	75	.	1	0	28	-5	18	0
Papua New Guinea	94	7	0	0	32	-2	21	-6
Paraguay	68	34	0	-0.17	10	-1	7	0
Peru	27	-9	0.25	-0.25	16	-1	8	-3
Philippines	61	15	0	0	17	4	10	0
Poland	43	1	0	0	42	-2	15	6
Portugal	67	11	0.25	0.25	41	7	16	3
Puerto Rico	134	9	.	.	.	.	14	-2



**Table 1. Globalization and Government Spending**

Qatar	.	.	1	0	.	.	.	.
Romania	46	.	0	0	37	-5	11	6
Russian Federation	54	.	0	0	25	.	18	.
Rwanda	31	-2	0	0	21	7	12	-2
São Tomé and Príncipe	98	-7	0	0	.	.	33	16
Saudi Arabia	79	-20	1	0	.	.	33	12
Senegal	60	-17	0	0	.	.	15	-1
Seychelles	124	-20	1	0.42	54	.	32	3
Sierra Leone	44	-10	0	0	13	-10	10	-2
Singapore	344	25	1	0.5	24	5	10	0
Slovak Republic	97	.	0	0	.	.	22	.
Slovenia	132	.	0	0	.	.	20	.
Solomon Islands	124	-19	0	-0.17	33	-2	28	5
Somalia	38	-30	0	0	.	.	.	.
South Africa	48	-7	0	0	33	8	19	5
Spain	40	7	0.17	0.17	35	11	16	4
Sri Lanka	69	4	0	0	30	0	10	0
St. Kitts and Nevis	142	-2	0	0	31	.	27	5
St. Lucia	144	1	0	0	26	-5	16	-3
St. Vincent and the Grenadines	145	-8	0	0	32	2	21	-2
Sudan	20	-12	0	0	.	.	13	-1
Suriname	50	-70	0	0	49	13	30	6
Swaziland	160	20	0	0	26	0	20	1
Sweden	63	6	0.25	0.25	44	9	27	1
Switzerland	71	3	0.33	0.33	25	7	14	2
Syrian Arab Republic	46	-1	0	0	25	-16	16	-5
Tajikistan	.	.	0	0	.	.	20	.
Tanzania	54	25	0	0	23	-6	18	.
Thailand	71	26	0	0	16	-1	10	-1
Togo	82	-16	0.08	0.08	35	0	14	-5
Tonga	88	-5	.	.	43	4	18	2
Trinidad and Tobago	69	-15	0.17	0.17	37	2	16	1
Tunisia	84	16	0	0	35	3	17	1
Turkey	35	17	0	0	20	1	10	0
Turkmenistan	.	.	0	0	.	.	22	.
Uganda	28	-1	0	0	12	0	9	-1
Ukraine	.	.	0	0	.	.	18	.
United Arab Emirates	109	4	1	0	14	4	19	6
United Kingdom	52	-1	1	0.58	39	2	21	0
United States	21	4	1	0	24	2	17	0
Uruguay	43	8	0.75	0.25	28	3	13	-1
Uzbekistan	104	.	0	0	.	.	13	.
Vanuatu	110	.	1	0.75	36	8	33	4
Venezuela	50	4	0	-1	20	0	9	-2
Vietnam	53	.	0	0	.	.	8	.

**Table 1. Globalization and Government Spending**

West Bank and Gaza	.	.	.	.	.	.	.	.
Western Samoa	95	.	0	0	.	.	19	2
Yemen, Rep.	76	.	0.5	-0.5	39	.	20	.
Zaire	53	22	0	0	.	.	11	1
Zambia	68	-12	0	0	26	-8	19	-5
Zimbabwe	64	9	0	0	37	4	20	5
Observations	165	131	182	181	132	111	173	144
Average	79	3	0.16	0.04	30	2.1	17	0.5
Standard deviation	46	17	0.33	0.25	12	7.0	7	5.2

*Table 2. The Size of Government, 1985-1995*

Dependent variable	Total central government spending			General government consumption	
	(1)	(2)	(3)	(4)	(5)
Independent variables					
Trade	0.456***	0.432***	0.346***	0.268**	0.304**
Capital mobility	-0.031	-0.389	-0.376	0.030	0.669
Trade*cm		0.086	0.090		-0.151
Interest payments			0.035		
GDP per capita	0.074	0.074	0.098*	0.180***	0.181***
Population	-0.026	-0.030	-0.023	-0.084**	-0.077*
Area	0.056*	0.058*	0.026	0.088***	0.084***
Dependency Ratio	-0.139	-0.148	0.148	0.491*	0.503*
Urbanization	-0.070	-0.070	-0.099	-0.107	-0.107*
East Asia	-0.574***	-0.577***	-0.532***	-0.347***	-0.335***
Latin America	-0.260*	-0.261*	-0.225	-0.260**	-0.262**
OECD	-0.023	-0.019	0.033	-0.110	-0.124
Sub-Saharan Africa	-0.177*	-0.176*	-0.209**	-0.090	-0.089
Intercept	1.370	1.520	1.871	1.798*	1.559
Joint significance of trade-cm interaction		0.007	0.010		0.078
Obs.	96	96	90	113	113
R <sup>2</sup>	0.511	0.512	0.486	0.478	0.481

OLS regressions with heteroskedasticity-consistent standard errors (estimated with the Stata 5 command regress, r). All variables except region dummies are expressed in natural logs and are averages for the period 1985-1995. All data from WDI [1997] except the region dummies [Barro and Lee 1994].

\*\*\* p<.01, \*\* .01<p<.05, \* p<.10

**Table 3. Convergence and Divergence in the Size of Government After 1985**

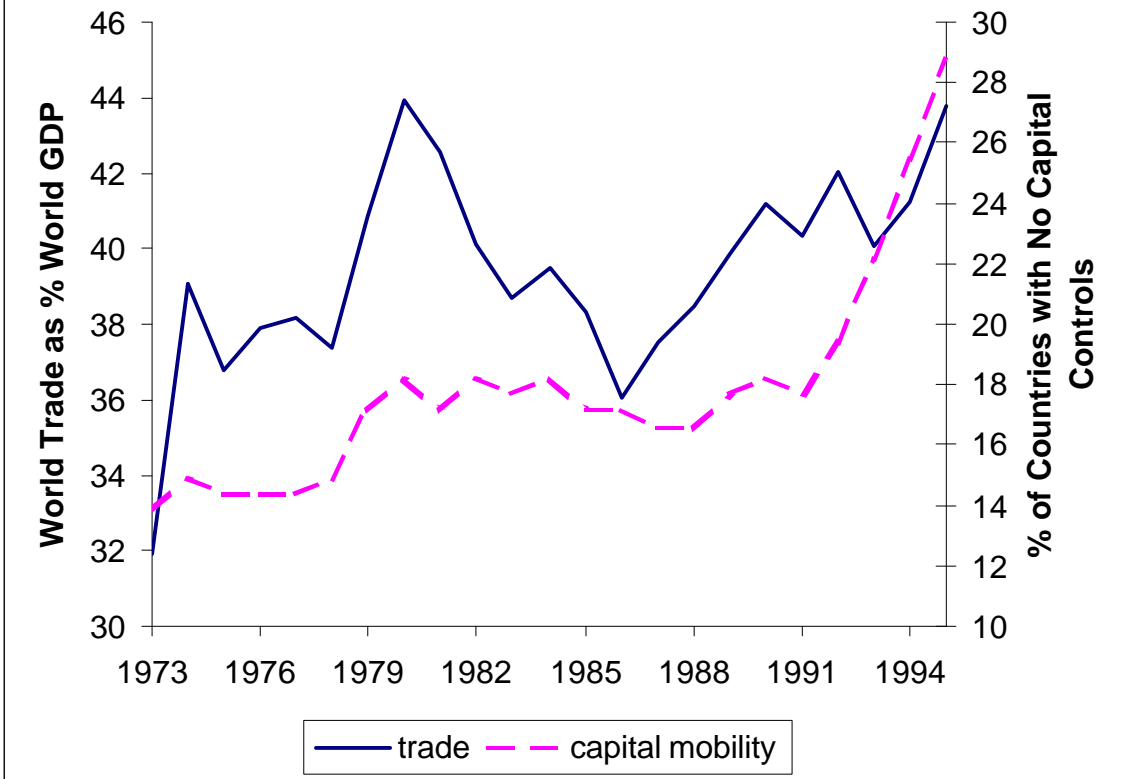
Dependent variable	$\Delta$ Total central government spending	$\Delta$ General government consumption
Independent variables		
Lagged level of spending	-0.198***	-0.323***
$\Delta$ Trade	-0.077	-0.272**
$\Delta$ Capital mobility	0.038	0.014
$\Delta$ Trade* $\Delta$ cap. mob.	-0.064	-1.066
$\Delta$ Interest payments	0.066**	
$\Delta$ GDP per capita	0.162*	-0.063
$\Delta$ Population	-0.129	0.126
$\Delta$ Dependency ratio	0.142	0.102
$\Delta$ Urbanization	0.049	0.172
East Asia	-0.071	-0.105
Latin America	0.072	-0.261**
OECD	0.124*	0.118
Sub-Saharan Africa	0.032	-0.235***
Intercept	0.606*	0.983***
Joint sig. of trade-cm interaction	0.876	0.0689
Obs.	87	116
Adj. R <sup>2</sup>	0.352	0.253

Dependent variables are  $\ln(1985-1995 \text{ average})$  minus  $\ln(1970-1984 \text{ average})$ . Lagged level of spending is  $\ln(1970-1984 \text{ averages})$ . All others  $\Delta$ s are  $\ln(1985-1995 \text{ average, or latest available year})$  minus  $\ln(1970-1984 \text{ average, or first available year})$ .

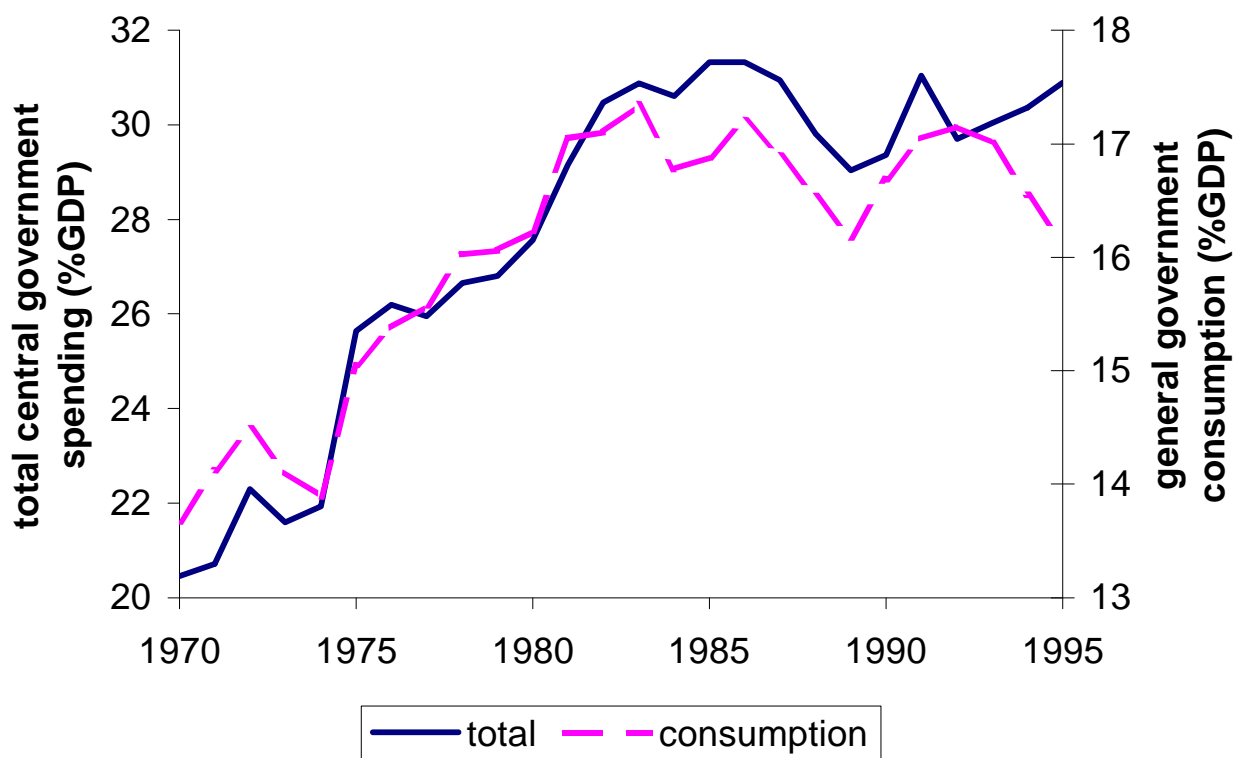
*Table 4. Conditional Convergence and Divergence in the Size of Government After 1985*

Dependent variable	$\Delta$ Total central government spending	$\Delta$ General government consumption
Independent variables		
Lagged level of spending	-0.195***	-0.306***
Lagged spending* $\Delta$ Trade	-0.022	-0.108***
Lagged spending* $\Delta$ Cap. mobility	0.010	0.012
Lagged spending* $\Delta$ Trade* $\Delta$ cap. mob.	-0.045	-0.533
$\Delta$ Interest payments	0.065**	
$\Delta$ GDP per capita	0.163*	-0.060
$\Delta$ Population	-0.130	0.142
$\Delta$ Dependency ratio	0.138	0.089
$\Delta$ Urbanization	0.050	0.175
East Asia	-0.071	-0.102
Latin America	0.069	-0.259***
OECD	0.124*	0.120
Sub-Saharan Africa	0.033	-0.231***
Intercept	0.594*	0.925***
Joint sig. of lagged spending-trade-cm interaction	0.048	0.000
Obs.	87	116
Adj. R <sup>2</sup>	0.351	0.339

**Figure 1. Trade and Capital Mobility**



### Figure 2. Government Spending



**Figure 3. Levels of Trade and Capital Mobility and Government Spending, 1985-1995**

		Capital Mobility	
		Low	High
Trade	Low	23.7 (total) 13.8 (cons.)	22.9 (total) 14.4 (cons.)
	High	39.4 (total) 19.7 (cons.)	39.7 (total) 19.3 (cons.)

Counterfactual estimates of total central government spending and general government consumption (%GDP) derived from the regression estimates in columns (2) and (5) of Table 1. All variables were set at their means except trade and capital mobility. High (low) scores refer to one standard deviation above (below) the mean.



**Figure 4. Changes Trade and Capital Mobility and Changes in General Government Consumption**

		Capital Mobility	
		Low	High
Trade	Low	+7.3%	+16.8%
	High	+0.8%	-9.9%

Counterfactual estimates of percentage changes in general government consumption derived from the regression estimates in the right hand column of Table 2. All variables were set at their means except trade and capital mobility. High (low) scores refer to one standard deviation above (below) the mean.

**Figure 5. Changes in Trade and Capital Mobility and Conditional Convergence in Government Spending**

		Capital Mobility	
		Low	High
Trade	Low	+6.0% (total) +6.1% (cons.)	+8.3% (total) +19.5% (cons.)
	High	+3.2% (total) +1.5% (cons.)	+2.7% (total) -12.2% (cons.)

Counterfactual estimates of percentage changes in total central government spending and general government consumption (%GDP) derived from the regression estimates in Table 3. All variables were set at their means except trade and capital mobility. High (low) scores refer to one standard deviation above (below) the mean.

## Notes

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<sup>1</sup> Rodrik [1998a] also presents a causal argument about why trade is associated with more government spending that highlights volatility in the terms of trade and the citizen insecurity this generates. In this paper, however, my interest is only in the trade-government size correlation itself.

<sup>2</sup> Rodrik [1997: 62] presents a preliminary test of this conjecture, but only with respect to the OECD countries rather than the global sample of nations.

<sup>3</sup> Rodrik does analyze the effects of levels of trade on changes in government spending, but not the relationship between changes in trade and changes in government spending.

<sup>4</sup> In a recent study of the OECD, Garrett and Mitchell [1999] show that once country-fixed effects are taken into account (that is, whatever historical processes that shaped a country's level of trade and government spending), year-to-year increases in trade were associated with less, not more, government spending. Rodrik [1997: 62] reports a similar result, but he concludes that this is because patterns of trade are not very volatile in the OECD – and hence that there are few incentives for governments to expand the public economy in response to increased trade.

<sup>5</sup> See Garrett [1998a] for a more thorough presentation.

<sup>6</sup> In particular, the dynamics of national savings and investment time series make it very difficult to generate simple coefficients that mirror the Feldstein-Horioka cross-national correlations.

<sup>7</sup> Whereas in OECD studies researchers worry about why savings-investment correlations are so high, the issue in the developing countries is why they are so low. One reason for this is purely a matter of accounting: the quality of national accounts data is poorer for developing countries. All else equal, this measurement error will tend to depress savings-investment correlations. More importantly, however, foreign aid (particularly in the form of loans) is a significant driver of investment in many developing countries. This reduces the correlation between domestic savings and investment.

<sup>8</sup> The correlation between Kim's dummy and Quinn's most complete 14-point scale, for example, was 0.74 for data on 64 countries for 1980-1987.

<sup>9</sup> Note that the first year of observations for capital mobility is 1973, rather than 1970 for all the other variables.

<sup>10</sup> Rodrik [1998a] relies heavily on a government consumption measure in his analysis. But his is taken from the Penn World Tables whereas I use the World Bank's data [WDI 1997]. The advantage of the former is that it takes into account relative price differences across countries, but for my purposes it has a significant limitation in that the last year for which the data were available was 1992. The WDI measure was also available for 20 more countries. Using the PWT measure, however, did not alter in any important way the results reported in this paper.

<sup>11</sup> Since the capital mobility variable is bounded by 0 and 1 and the log of 0 is undefined, the natural logarithms of capital mobility used in the paper are actually  $\ln(\text{capital mobility} + 1)$ . The scale of the logged variable is thus 0 to .69.

<sup>12</sup> Thus, the invariant land area parameter was dropped.

<sup>13</sup> I did not include interest payments in these equations because those data are only for central government.

<sup>14</sup> In the case of trade, the logged values were 3.61 (or 37% of GDP), for the low case and 4.79 (120% of GDP) in the high case. The corresponding values for capital mobility were 0 (0% of the period 1985-1995 with no capital controls) and 0.4 (49% of years). Note that in the capital mobility case, the distribution was sufficiently skewed (with so many countries with restrictions on the capital account in all years) that the mean minus one standard deviation actually generated a negative score that could not occur for a variable with a lower bound of 0. I have thus used the lowest possible score for the "low" case.

<sup>15</sup> Also note that land area was excluded since this is invariant over time. This slightly increased the number of observations in the regressions.

<sup>16</sup> For changes in trade, these were -0.21 (a decline in trade of 19% between the two periods) and 0.31 (a 36% increase). For changes in capital mobility, the low and high scores were -0.15 (a 14% decrease in the portion of years with no restrictions on the capital account) and 0.62 (an 86% increase).