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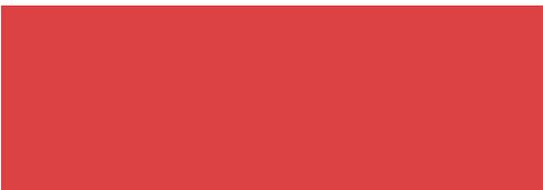
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**Why does the
Public Sector
Grow?
The Role of
Economic
Development,
Trade and
Democracy**

Carles Boix



CENTRE DE RECERCA
EN ECONOMIA INTERNACIONAL
GENERALITAT DE CATALUNYA
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Why Does the Public Sector Grow? The Role of Economic Development, Trade and Democracy

Carles Boix

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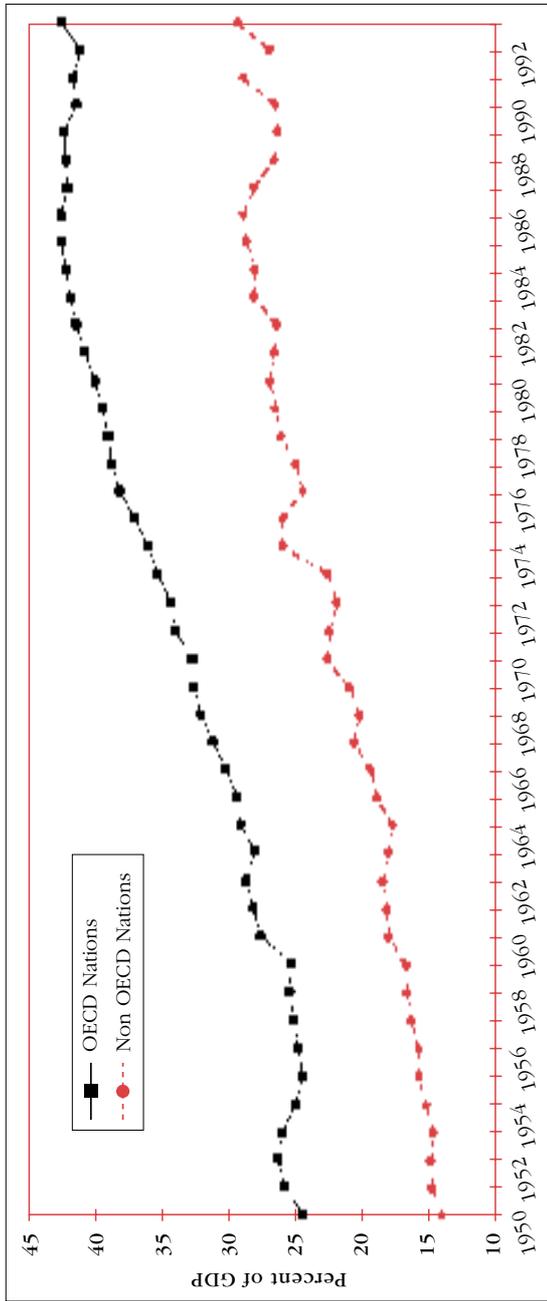
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Two stylized facts describe the evolution of the public sector across the world during the last century: first, its steady growth; second, the presence of persistent crossnational differences in its size. The public sector has grown substantially since the turn of the century. Excluding war times, government expenditure remained constant around 10 per cent of GDP during the 19th century in the advanced world. After 1914, however, the size of the public sector expanded substantially. As shown in Figure 1, in the early 1950s, total current public revenue averaged 24 per cent of GDP in the OECD. By the mid-1970s, it had risen to 36 per cent. By the early 1980s it had stabilized at around 44 per cent. Although the pace of change has been less dramatic, the public sector has also grown in the developing world. Among non-OECD countries, current public revenue averaged 14 per cent of GDP in 1950, reached 20 per cent of GDP by the late 1960s and then hovered around 27 per cent from the late 1970s onward¹.

Figure 1 The evolution of public revenue, 1950-93



Despite the steady growth of the public sector, differences across nations have remained substantial. In the mid-1980s, for example, public revenue ranged from less than 10 per cent of GDP in Sierra Leone and Paraguay to over 60 per cent in Botswana, Kuwait, Reunion and Sweden. Figure 2 shows the mean and dispersion of public revenue among OECD nations. In the early 1950s, public revenue went from 19 to 32 per cent of GDP. In 1985 it ranged from 31 to 60 per cent of GDP. As shown in Figure 3, crossnational variation has become even sharper in the developing world. In the mid-1980s, public revenue went from 6 percent in Sierra Leone to almost 83 percent of GDP in Reunion.

It is interesting to notice, however, that, in spite of this growing divergence across nations, there has been a remarkable stability in the relative ranking of nations regarding the size of their public sector. As is apparent in Figures 4 and 5, which show the relationship between average public revenue in 1950-59 and 1970-74 and between average public revenue in 1970-74 and 1985-89 respectively, those countries that had a considerable public sector in 1950 continue to have today a large public sector. Similarly, most of those countries with a small state forty years ago still rank the lowest in terms of public sector².

4 **Figure 2** Public revenue in OECD Nations. Mean and dispersion, 1950-93

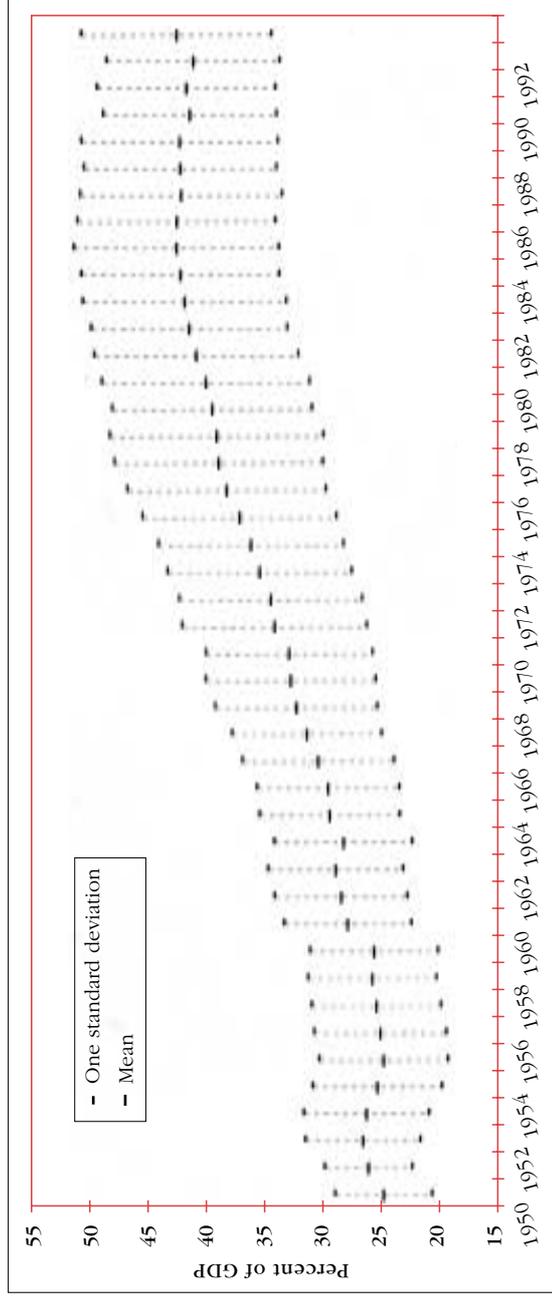
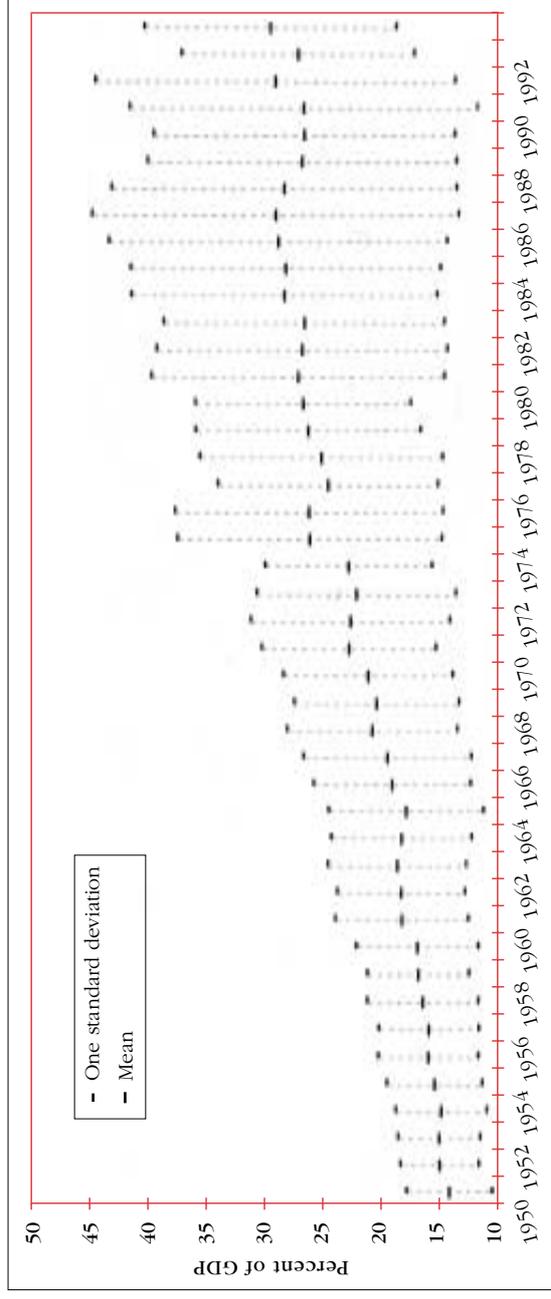


Figure 3 Public revenue in Non-OECD Nations. Mean and dispersion, 1950-93



1. The debate over the sources of growth of the public sector

The growth of the public sector has spawned a wealth of theoretical models to account for its causes³. Consider, very briefly, the following four families of explanations.

1. 1. The impact of modernization

According to a first set of models, generally favored by early sociological studies and by many economists, the broad process of economic modernization has had at least two effects on the structure of society and on the role the state plays in the economy. On the one hand, a modern economy imposes new functional requirements upon the state, such as setting up a regulatory framework, paying for infrastructures and generating skilled workers. To fully reap the benefits of technological shocks and growing capital flows, that are associated with the process of development, policy-makers are increasingly pushed to employ the state to generate minimum levels of public goods.

On the other hand, the process of modernization transforms the underlying structure of income flows as well as the channels through which welfare is provided. Although economic and property arrangements vary substantially in traditional societies, most individuals hold agricultural jobs. In agricultural economies, both the source of income (the exploitation of land) and the volatility of rents (basically linked to weather conditions) are broadly common to most individuals. Even though they are not universal, communal arrangements to share risk – such as common lands or church-distributed benefits – and the use of extended families for the provision of food, shelter and care may be fairly extended.

In modern societies, technological breakthroughs and the expansion of manufacturing and service-oriented jobs transform the old economic structure with the following consequences. In the first place, the distribution of economic risk changes, concentrating in specific segments of the population. More precisely, unemployment spells and work-related accidents, which emerge as the downside of manufacturing-led productivity increases, become important among industrial workers and, particularly, among those most unskilled. In other words, the process of industrialization and the formation of a broad class of wage-earners results in stronger pressures for intra-generational transfers. In the second place, a general improvement in material conditions in general and in health technologies in particular prolong life expectancy and eventually lead to a shift in the demographic structure. As the profile of the population matures and the proportion of old cohorts expands, pressure for inter-generational transfers, in the form of pensions and health care programs, goes up⁴.

1. 2. Redistribution and the role of democracy

If economic modernization models explain the growth of the public sector as a result of the new functional needs of industrializing societies, a second set of theories link the expansion of the state to its redistributive consequences – and thus explained it as an outcome of particular political coalitions attempting to redistribute income between social groups. Among the many forms this approach takes, Meltzer and Richards (1981) argue, in a rather influential piece, that, in a democracy, as long as the mean income of a given political community exceeds the income of the median voter, politicians will implement redistributive policies in favor of the lower half of

the income distribution. In other words, whenever the distribution of income is skewed toward the rich, politicians will tax the latter and transfer the revenue to the poorest to obtain a majority of the votes⁵. This would explain why public expenditure started to increase with the generalization of universal suffrage after WWI. If this theory were right, we should also expect, *ceteris paribus*, lower levels of expenditure in non-democratic regimes. The Meltzer and Richards' approach should be equally valid to explain intergenerational (rather than intragenerational redistribution): as old-aged cohorts grow in size in the population, public expenditure on pensions should rise⁶.

1. 3. Economic internationalization and a shrinking public sector

The decision to tax capital and labor to finance a growing public sector cannot be isolated from the reaction of these factors to growing fiscal pressure. Accordingly, for an important strand of the literature, the mobility of factors (or, in more journalistic terms, the progressive 'globalization' of the economy) constrains the ability of governments to tax and spend. The logic of the argument, which is mostly applied to capital (mostly because of its reportedly higher mobility vis-à-vis labor), is straightforward. Since economic growth depends on investment and investment in turn depends on profits, states and politicians are ultimately constrained by the rational calculations of the holders of capital, who are always in search of the highest rate of return for their assets. To avoid capital from moving to the most profitable countries, and thus facing decreasing investment rates and economic stagnation, all states are pushed to maximize the rate of return of private investors. To lure them, states will outbid each other through low taxes and by offering significant

incentives⁷. In short, in a highly internationalized economy, reformism and redistributive policies are severely curtailed by the mobility of factors.

An interesting variant of this thesis relates federalism and the level of public expenditure. According to this approach, in a federal system, that is, an economically integrated yet politically fragmented area, the state's monopoly power is broken by both factor mobility and competition between levels of governments. The capacity of economic agents, and, in particular, capital to move to lightly-taxed political subunits leads to a lower tax share across the whole country (Brennan and Buchanan 1980, Przeworski and Wallerstein 1988, Weingast 1995).

1. 4. Economic internationalization and an expanding public sector

The impact of the process of internationalization is, however, uncertain. Low taxes do not automatically attract private investors. Although many Third World countries have low taxes, capital inflows from the industrialized, high-tax nations have been modest. This is because, in order to maximize profits, capital holders invest in those countries (or economic sectors) that offer the highest net rate of return, that is, the widest wedge between the gross rate of return to capital and taxes (Lucas 1990). By lowering taxes and holding wages down, it might be possible to boost profits and therefore encourage private investment. But the rate of return of capital is equally dependent on the productivity of the input factors that enter the production process. Since what mainly determines gross profitability is the productivity of the input factors, taxes can be high insofar as productivity remains high enough to deliver the highest net profits (compared to other places) to capital. Capital will always prefer

a country where taxes are high, as long as productivity is very high, to a country where both taxation and productivity are low.

As a matter of fact, and in sharp contrast to the prediction that higher levels of internationalization lead to lower levels of public spending, a highly influential model of public expenditure in political economy has positively related the level of government intervention to the degree of openness in the economy. Higher levels of trade integration have been shown to increase the size of the public sector in advanced democracies (in political science, Cameron 1978, Katzenstein 1985; in economics, Rodrik 1998). Government spending grows in open economies as a mechanism to compensate for the adjustment costs of trade openness. Small and open countries, which are affected intensely by world business cycles from which they cannot easily insulate themselves through standard (expansionary) macroeconomic policies, choose to maintain high levels of public consumption and transfers to protect workers in their losing economic sectors. High levels of spending are therefore understood nearly as a functional requirement for the maintenance of internal stability and peace. Moreover, high levels of government intervention are seen as a way of overcoming market failures in the provision of skills and infrastructures: they ease the transition of the unemployed to the more dynamic areas of production in countries that need to compete in world markets to survive.

2. Empirical weaknesses in previous research

The contemporary research on the causes of public spending suffers from two fundamental

weaknesses: the first one, empirical; the other one, strictly theoretical.

To date most empirical studies are inconclusive (Alt and Chrystal 1983, chapter 8; Lybeck 1988; Mueller 1988, chapter 17; Holsey and Borchering 1997). Most scholars use limited samples, such as one-country time-series analysis or a cross-section of countries, and focus on single policy measures, such as social security transfers or public consumption⁸. General theoretical claims are hence difficult to derive. Some recent studies have developed pooled time-series cross-sectional samples for (most) OECD nations (Pampel and Williamson 1988; Hicks and Swank 1992; Huber, Ragin and Stephens 1993). Although these broader quantitative studies go a long way in determining the forces behind the growth of the public sector, several explanatory factors, such as left-wing rule, corporatism, openness and the proportion of old population, are so well correlated that it is impossible to ascertain, first, which variable actually matters and, second, through what specific mechanisms it does. Their focus on OECD nations makes them limited in their applicability. Broadly speaking, this sample of advanced democracies can only very weakly test for the effects of economic growth and corresponding social change, the impact of democratic (vs. authoritarian) regimes and the influence of an unequal distribution of resources (leading to differing pressures for redistribution).

To remedy these problems, I have gathered a broad sample of developed and developing nations. This sample includes all the countries for which comparable data on public revenue (current receipts) of the general government are available from 1950 to 1990. The data are taken from the United Nations National Accounts (UN,

several years) and from the Governmental Financial Statistics Yearbook (IMF, 1971-90)⁹. The sample includes about 80 countries (22 are OECD members), with some fluctuations depending on the time period, and over 2,300 observations. The statistical analysis, discussed in sections 4 and 5 below, relies on a panel data of both cross-sectional and yearly information.

The dependent variable is current receipts of the general government, rather than public expenditure, to maximize the sample under analysis. The United Nations National Accounts offer less comprehensive data on current public disbursements. Although two data bases offer larger samples for parts of public expenditure, they are not well suited for the purposes of this article. The Penn World Tables report the share of government consumption of over a hundred countries – but government consumption represents a fraction of all government spending. The World Bank's *World Data 1995* reports levels of overall government spending for over 80 countries. Still, the World Bank's *World Data* (as well as the IMF data) reports spending only at the central government level – which leads to extremely biased values for countries such as Argentina, India or the USA¹⁰.

3. Unanswered theoretical issues

The inconclusiveness of the research on the growth of the public sector is not merely due, however, to the limitations of the existing empirical work. It stems as well from an inadequate theoretical specification of the models.

Purely political models, like those described in subsection 1.2, concentrate too much on the effect that an unequal distribution of resources

has on the tax rate to the extent of disregarding how economic development alters the underlying structure of preferences in the electorate. As a result, they cannot explain why per capita income is so well correlated with the size of the public sector.

In turn, modernization models, which rely heavily on the idea that politicians mechanically respond to the (changing) tastes of the median voter, discount the political and institutional arena in which policy is made. That is, they assume politicians to be benevolent planners that, interested in maximizing the national income, automatically use the state to provide for those public goods (such as infrastructures, education and regulatory agencies) that will in turn let the country reap the benefits of modernization. Yet it cannot be taken for granted that policymakers will always behave as benign planners and pursue the collective welfare over short-term personal gains. Implementing the optimal policies will only happen under the presence of those political or legal institutions that effectively restrain rent-seeking behavior among politicians. Democratic institutions, by easing the task of monitoring policy-makers, should, on average, lead to a fuller provision of public goods¹¹. Similarly, the extent to which politicians will develop pension programs and a public health system will be eventually dependent on the existence of institutional channels that make politicians responsive to citizens' demands. In short, economic development is a necessary but not sufficient condition for the public sector to grow: the institutional and political mechanisms through which politicians make decisions shape the extent to which the process of modernization affects the size of the state.

A similar problem has affected the literature on the internationalization of the economy and

the size of the state. Why some economies are more open than others is left unanswered and the presence of a sizable public sector is merely thought of as a functional requirement of having a free trade policy regime. Yet, as discussed in more detail in section 5, the selection of both trade (and fiscal) policy can only be understood and modeled as a result determined by political struggles between different sets of agents (politicians and voters) over both the trade regime and the level of taxes.

4. Results (I). The interaction of economic development and political regime

To overcome the pitfalls of the existing theoretical approaches, we need a joint model that integrates both the impact of economic variables and the underlying structure of political choice. Let me consider, in rather broad terms, in this section how development and politics interact to shape the size of the public sector¹². I discussed the role of trade separately in section 5.

With economic development, pressures to enlarge the public sector increase for two reasons. First, the processes of urbanization and industrialization generate incentives for the state provision of certain collective goods such as regulatory agencies, infrastructures and skill formation. Second, both the emergence of an industrial economy and an increasingly ageing population shift the underlying income distribution in a way that results in stronger demands for public expenditure. The process of economic development constitutes, however, a necessary but not sufficient condition for the emergence of a large public sector. Policy-makers, who make policy through a political

mechanism, set the tax rate (to finance the provision of services and transfers) to match the preferences of the median voter. The identity of the latter varies conditional on the electoral franchise in place (as well as on the extent to which voters are mobilized). This variation shapes, in turn, the size of the public sector. Under a democratic regime, where politicians respond to the demands of all voters, the public sector grows parallel to the structural changes affected by the process of economic development. Instead, in authoritarian systems, where all or a substantial part of the electorate is excluded from the decision-making process, precisely to avoid the redistributive consequences of democracy, the size of the public sector remains small.

Table 1 shows the results of estimating, through econometric techniques detailed in the Annex, the impact of economic development (measured as real per capita income in prices of 1985), trade openness (measured as the log value of the ratio of the sum of imports and exports to GDP) and political regime (democratic or authoritarian), separately and jointly¹³.

In line with the predictions of the modernization theory, and for the period under analysis (1950-90), column 1 shows that economic development positively affects the size of government. Holding trade openness constant (at the sample mean of 62 per cent of GDP), in underdeveloped nations (a per capita income of \$1,000), public revenue fluctuates around 17 per cent of GDP. Above a per capita income of \$3,500, public revenue climbs to over 30 per cent. In a country with a per capita income of \$15,000, current public revenues should be expected to reach 47 per cent of GDP. The presence of democratic institutions has a positive,

Table 1

The interaction of political regime and economic development

Independent variables	Public revenue as per cent of GDP, 1950-1990		
	(1)	(2)	(3)
Constant	-76.73* (2.29)	-60.44* (3.13)	-69.11* (2.59)
Per Capita Income (Log) ^a	11.33* (0.31)	8.88* (0.44)	10.98* (0.31)
Trade Openness (log of sum of exports and imports over GDP) ^b	3.48* (0.41)	3.93* (0.41)	2.23* (0.45)
Democratic Institutions ^c	0.95* (0.35)	-23.62* (3.25)	-11.45* (2.05)
Democratic Institutions x Log of Real Per Capita Income		3.21* (0.42)	
Democratic Institutions x Trade Openness			3.24* (0.53)
Number of observations	2322	2322	2322

^a Per Capita Income. Log of per capita GDP in \$ in 1985 constant prices. Source: World Penn Tables.

^b Trade Openness. Log of the sum of exports and imports over GDP. Source: World Penn Tables.

^c Democratic Institutions. Democracy=1; Non-democracy=0. Source: Alvarez, Cheibub, Limongi and Przeworski (1996).

Estimation: Generalized Least Squares estimation of Random-Effects Model.

Standard errors in parenthesis.

* p<0.01

but small, effect on the size of revenue – it is 0.95 per cent of GDP higher if the country is democratic.

To test for the interaction of socioeconomic modernization and political institutions, I add the interactive term ‘Democratic Institutions x (Log of) Real per Capita Income’ in column 2 of Table 1. To interpret the results of column 2, which confirm the theoretical predictions, I simulate in

Figure 6 The evolution of public revenue as an interaction of development and political regime

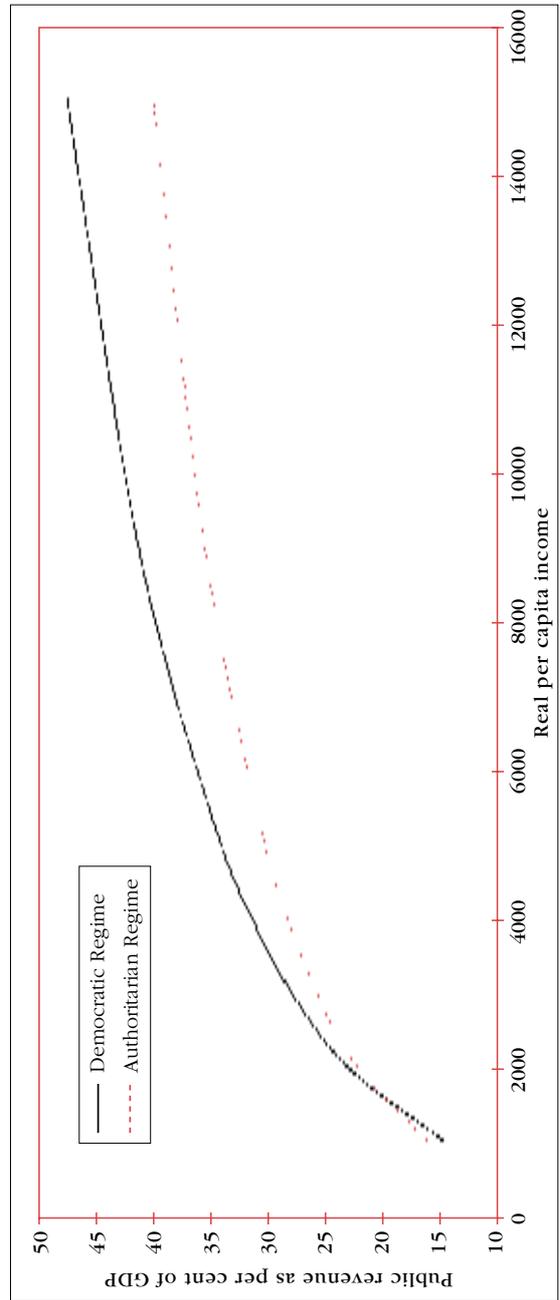


Figure 6 the evolution of current public revenue as a proportion of GDP as real per capita income rises under both a democratic polity and an authoritarian regime (trade openness has been set equal to the sample mean of 62 per cent of GDP). The structure of the simulation in Figure 6 suggests the following stylized facts. In the first place, the level of development has an unconditional impact on the size of the public sector. Due to the incentives of providing certain public goods, the public sector always grows with per capita income. Regardless of the political regime in place, the size of public revenues increases by around 15 percentage points from very low to medium levels of development, and then another 10 percentage points from medium to high levels of development.

In the second place, the nature of the political regime does not affect, on its own, the size of the government. For that to be true, the public sector should always be larger under a democratic system at all income levels. The results show, instead, that democratic regimes in truly underdeveloped economies have no incentives to spend more than authoritarian regimes. At extremely low levels of development, public current revenue is, in fact, somewhat higher in nondemocratic regimes. At a per capita income of \$500 (in 1985 prices), public revenue is 4 per cent lower in democracies than in authoritarian regimes. This may be due to two factors. First, the demands for transfers associated with development have not affected democratic states. Second, it is likely that authoritarian states are likely to impose higher taxes to finance their repressive apparatus.

Finally, as socioeconomic modernization takes off, democratic institutions lead to larger

governments. The latter generates a set of demands and needs that democratic politicians need to respond to. Once real per capita income goes over \$1,000, the public sector expands at a faster rate under democratic regimes. With a per capita income of \$4,000, public revenue is 3 percentage points higher in a democratic country. For a per capita income of \$10,000, public revenue would hypothetically be 6 percentage points higher in a democracy (about a sixth more in relative terms)¹⁴. The historical experience of Spain tracks quite nicely these results. In 1974, Spain had a per capita income of \$7,291 (in 1985 prices) and current public revenues totaled 22.8 per cent of GDP. Ten years later, although per capita income had hardly gone up (to \$7,330), current public revenues had risen to 32.7% of GDP. The transition to democracy had transformed the role of the public sector. More generally, whereas in OECD countries, with both high per capita incomes and stable democratic regimes, current public revenue averaged 42 per cent of GDP in the late 1980s, in Singapore, or in Korea for medium levels of development, the lack of a democratic system led to a much smaller public sector that would be expected in purely economic terms.

5. Results (II). The interaction of trade and democracy

The results in Table 1 (column 1) point toward a straight relationship between trade and the size of the public sector, thus confirming previous work by Cameron (1978), Katzenstein (1985) and Rodrik (1998). For these authors, as openness increases, the state, mainly acting as a benevolent dictator or a welfare maximizer, adopts a salient role to minimize the risks of higher economic integration and to compensate declining

economic sectors. Politics is, however, prominently absent in this approach. Disregarding the most recent research on the political sources of different tariff regimes (Keohane and Milner 1996), trade is taken as an exogenously determined variable. Neglecting the literature on the redistributive consequences of public spending (Esping-Andersen 1990; Holsey and Borchering 1997), the growth of the public sector is then regarded as a merely functional response to the requirements of trade.

A more satisfactory understanding of the relationship between the international economy and domestic politics requires, by contrast, taking into account the set of economic and political trade-offs that simultaneously underlie the choice of trade and fiscal policies. Once this is done, countries can be found to pursue three (stylized) alternative strategies¹⁵:

1. To insulate domestic actors from internationally-induced changes in relative prices, national policymakers may choose to close the domestic economy. Once domestic actors are relatively isolated from the world business cycle, there are no incentives to resort to higher levels of public expenditure to compensate voters for (temporary or permanent) employment losses¹⁶. In short, *ceteris paribus*, economic insulation depresses the level of public expenditure.

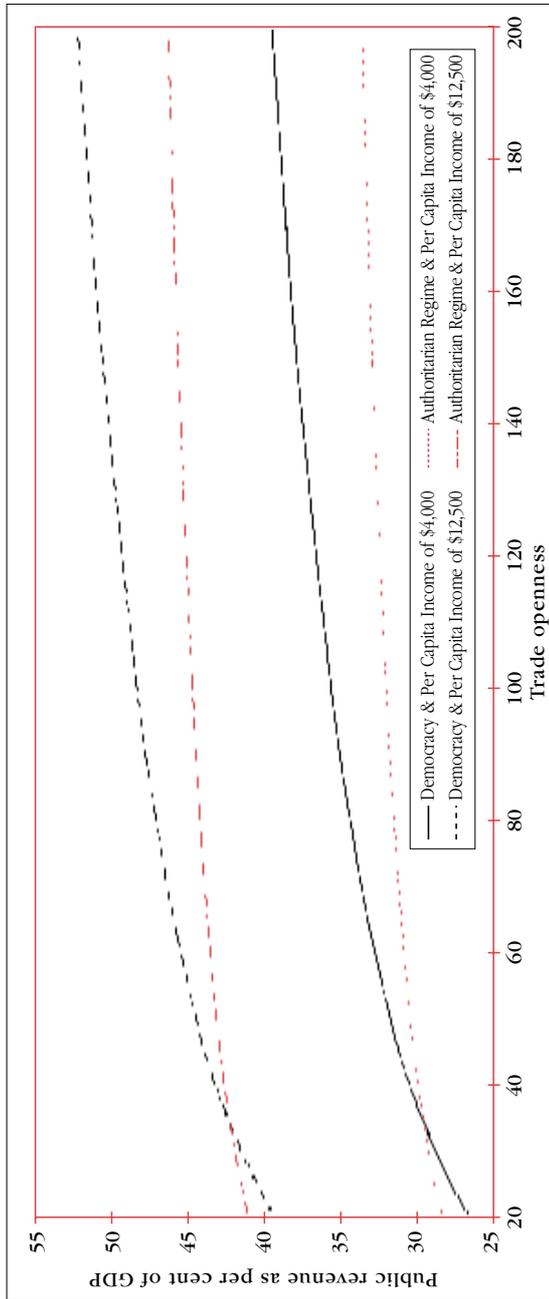
2. Once free trade policies are embraced, and given that Keynesian demand management is hardly available to open economies (Alt 1985), policymakers can only ensure high levels of social welfare (and therefore the support required to govern) by expanding the public sector to shore up declining economic sectors.

3. Since the combination of openness and compensation requires higher taxes, policymakers may consider favoring a third political strategy. Excluding in a systematic manner, that is, through authoritarian rule, those sectors that may lose from increasing economic integration, they will avoid increasing public spending.

To test for the impact that political institutions, i.e. democracy, may have on the size of the public sector for different levels of trade, I add, to the basic model of column 1, the interactive term 'Democratic Institutions x Trade Openness'. The results of the regression are presented in column 3 in Table 1. Per capita income and trade openness continue to boost public revenue. The presence of democratic institutions slightly reduces public expenditure. But this result has to be set against the sign of the interactive term. As trade grows, the public sector grows in democratic regimes.

Figure 7 simulates the results of column 3. The simulation includes the evolution of current public revenue when trade openness goes up for two different levels of development – a country with a per capita income of \$4,000 and a country with a per capita income of \$12,500. When the sum of exports and imports amount to 20 per cent of GDP, public revenue totals around 27-28 per cent of GDP. As the economy opens, the size of the government increases, yet at different rates. In democratic regimes it grows about 9 percentage points of GDP when exports and imports represent 100 per cent of GDP. In authoritarian regimes, instead, it only goes up by about 3.5 percentage points. In short, a closed economy pushes public revenue downward. But, it is the combination of political regime and openness that really speeds up the formation of large governments.

Figure 7 The evolution of public revenue as an interaction of trade and political regime



6. Discussion and concluding remarks

The exploration of the forces that have shaped the economic role of the state across developed and developing nations shows that two main forces, modernization and trade openness, determine the size of the public sector.

Pre-modern societies have small governments, regardless of their political regime. Democratic India, the authoritarian regimes of sub-Saharan Africa or Central America or even the limited democracies of 19th-century Europe fit into this pattern.

The process of economic modernization leads to larger public sectors through two sequential steps. In the first stage, as mainly agriculture-based economies become urban and manufacturing societies, two structural changes open the way for a growing state sector. On the one hand, the processes of urbanization and industrialization generate new demands: a skilled force is required to take advantage of new productivity gains; infrastructures are a must for the proper development of the country. On the other hand, the distribution of risks and the mechanisms to cope with them change. In agrarian societies, risks are generally common to most individuals. The provision of care takes place through (extended) families. Technological shocks lead to the differentiation of the population according to skills and risks, such as industrial accidents and joblessness, in particular segments of the population. With the decline of extended families, the traditional means to support workers during the periods of unemployment and economic downturns, that is, informal help from relatives, disappear. Collective insurance schemes must then be developed to ease the impact of unemployment. Finally,

technological improvements, in the areas of food-production and health care, increase life expectancy and lead to the emergence of health institutions and pension systems.

In a second stage, the forces of modernization continue to affect the more mature economies. Once the welfare state has been set up and the demographic transition to a more old population profile has taken place, public expenditure keeps rising, now driven by the increasing costs of health and pensions' programs.

Still, modernization is only a pre-condition for larger public sectors. Market failures may haunt the provision of education, roads and sewers. Similarly, regulatory bodies and a well-managed public administration boost private investment substantially. This should lead states to step in and increase tax collection. However, most of the growth of the public sector is related to the creation of redistributive programs (mostly through transfers and, to some extent, through public consumption). Redistributive programs emerge conditional on the political regime in place and the level of political mobilization. In authoritarian regimes, generally imposed to block redistribution, taxes remain low. Conversely, in democratic regimes, taxes, reflecting the interests of voters, become high as modernization shifts the underlying distribution of interests toward the development of both intragenerational and, especially, intergenerational transfers.

Again, trade affects the size of the public sector. But it does conditional on the political regime in place. Those countries that either embrace protectionist policies to shore up the welfare of key domestic sectors or benefit from a quasi-closed economy due to their size and diversity, do not engage in substantial public

spending. According to the empirical results of table 1, in closed economies, such as Argentina, India, Iran, Japan, Mexico or the USA, public revenue as a proportion of GDP is much lower than it should be given their respective level of development.

To maintain trade openness in democratic settings, policymakers have to develop publicly-funded compensatory schemes to muster the support of the losers of higher economic integration. In response to the economic shock of the 1930s, political elites used welfare and investment spending to structure a pro-free trade coalition in small European states¹⁷. That solution contrasted with the decision to set up protectionist policies as a way of steadying relative prices at home without having to raise taxes and redistributive income through the public sector in Latin America (and in New Zealand and Australia to some extent too) by that same period of time.

Finally, since the combination of openness and compensation requires higher taxes, policymakers may consider excluding in a systematic manner, that is, through authoritarian rule, those sectors that may lose from increasing economic integration, to avoid increasing public spending. In open authoritarian regimes, such as the East Asian economies, the public sector is between a 10-15 percent smaller than in a democratic system with similar levels of economic integration.

The issues and results raised in this paper are relevant to contemporary debates on the political and economic consequences of trade (and financial) integration on, at least, two counts: the sustainability of the welfare state, and the changes that the international economy may

effect on the number and system of states. Consider the first question. Broadly speaking, the current literature on the effects of economic openness can be divided in two camps. On the one hand, the most extended (and popular) approach sees the process of economic globalization as simply imposing increasing constraints on the ability of states to govern the economy. On the other hand, a set of scholars points to the striking correlation between openness and the size of the public sector to call into question the former's conclusions: the fact that the most open economies consistently espouse larger governments shows, in an unequivocal manner, that more trade does not require lower taxes – and that the opposite may be actually more accurate. It is likely that, once all the relevant variables are taken into consideration, both approaches can be reconciled. On the one hand, it is true that openness does not automatically constrain the spending capacity of states – although, again, why public sectors grow in trading nations is mainly a function of political decisions (and secondarily of economic or structural needs). But, on the other hand, that public compensation may run into limits seems to be forgotten by the actual literature on trade and government growth. How sustainable a large public sector is over time depends on the competitive advantage of the exporting sectors that pay for it. If this competitive advantage erodes, the incentive to sustain a large government declines – and countries start shifting toward either a protectionist system (the South American path of the 1930s and 1940s) or an authoritarian free trade regime.

The way in which fiscal policy and trade regimes are related suggests also that the work

that serves as the basis of this *opuscle* just presented may be useful to shed light upon the causes that explain the evolution of the state system and any historical variation in the number of nations. The underlying assumption in the model that underpins the empirical findings I have described consists of a policymaker interested in maximizing the welfare function of the median voter in order to win elections (or, more generally, stay in power). The policymaker's first choice consists in either establishing a relatively closed economy (where smoothing the business cycle is possible) or opening the economy (where demand management is fraught with risks). But the many ways through which autarky may come about have been left unexplored. By assumption, autarky has been equated to raising domestic tariffs. Nonetheless, a closed economy can be also achieved by the integration of previously separated countries. In the framework of this model, the process of European unification can be basically understood as an alternative (and cheaper) response to globalization than expanding the welfare state in each European nation one step further.

Appendix

To determine the variables that influence size of government, I have estimated the following model on a cross-section of nations:

$$\text{Public Revenues} = \alpha + \alpha_1(\text{Economy}) + \alpha_2(\text{Trade}) + \alpha_3(\text{Political Institutions}) + \epsilon_t$$

1. 'Economy' includes the set of variables that measure the effects of economic development (and the general effects of modernization) on the size of government:

(a) The log value of real per capita income (in constant dollars, Chain Index, expressed in international prices, base 1985), taken from the Penn World Tables;

(b) the average percentage of urban population in 1970-90, taken from the World Bank;

(c) the average share of the agricultural sector over GDP in 1970-90, taken from the World Bank;

(d) the average proportion of the labor force in the manufacturing sector in 1970-90, reported by the World Bank;

(e) the 'dependency ratio', that is the number of years life expectancy goes beyond 60, in 1970-90; life expectancy is taken from the World Bank.

2. 'Trade' includes:

(a) a measure of the impact of openness on governments, calculated as the log value of the ratio of trade (sum of imports and exports) to GDP, and is taken from the Penn World Tables.

(b) the ratio of fuel exports over total exports, for 1970-90, taken from World Bank tables;

(c) the proportion of nonfuel primary exports over total exports, for 1970-90, taken from World Bank tables.

3. 'Political Institutions' includes the following set of political and institutional variables:

(a) a yearly variable that indicates whether each country was a competitive democracy;

(b) a variable that indicates whether each country was a 'bureaucracy' each year;

(c) a variable that indicates whether each country was an 'autocracy' each year;

(d) a variable that indicates whether each country was independent each year.

To measure the presence of a democratic, bureaucratic or autocratic regime, we follow the index developed by Alvarez, Cheibub, Limongi and Przeworski (1996) and the classification reported in appendix 1 of their paper. Democratic regimes are defined as those regimes "in which some governmental offices are filled as a consequence of contested elections." (p.4) Bureaucracies are those dictatorships that have legislatures. Autocracies are those dictatorships that do not and that therefore can be thought of as not having any sort of institutionalized rule for operating the government.

To compute the regression I have employed a 'variance-component' generalized least squares (GLS) technique to correct for the ways in which assumptions underlying ordinary least squares (OLS) estimations are violated by cross-national panel data (cf. Hsiao 1986, Hicks 1994).

Footnotes

- (1) Figures 1 to 5 are based on data taken from the United Nations National Accounts (UN, several years) and the Governmental Financial Statistics Yearbook (IMF, 1971-90).
- (2) Figure 5 also shows that, at least among OECD nations, the 1960s brought a considerable growth of the public sector, particularly among several Scandinavian countries, the Netherlands and Belgium. After the mid-1970s, the public sector went back to expand at an extremely uniform pace across all nations. In the mid-1980s, public revenue as a proportion of GDP experienced a slight contraction in both developed and developing countries.
- (3) For more extensive reviews see Lybeck (1988), Holsey and Borchering (1997).
- (4) For sociological accounts of the process of economic modernization, see Wilensky (1975) and Flora and Alber (1981). Among economists, resorting to explanations based on processes of technological and structural change has taken two main forms. On the one hand, the so-called Wagner's law states that public expenditure rises with social progress because the types of goods and services provided by the public sector have a high income elasticity of demand. On the other hand, Baumol's cost disease predicts that the combination of similar real wages increases at both the public and the private sector and a lower productivity growth rate in the public sector (which is a service sector and hence a relatively labor-intensive industry) compared to the manufacturing sector leads to an increase of the costs of government services in real terms over time.
- (5) The extent to which politicians would tax the rich, however, is constrained by the extent to which excessive taxes on the top half discourage work among high earners and therefore depress the total amount of income available for redistribution.
- (6) In addition to median-voter models, other redistributive models explain the size of government as a result of particular political coalitions among groups or, in the context of modern democracies, parties (with different ideologies) in government. If, given certain conditions, politicians do not converge towards the median voter, that is, if parties or political groups diverge, public expenditure can be expected to be determined by the party or group in power (Hibbs 1987), regardless of the position of the median voter. For sociological models that related public spending and welfare states to the strength of a particular class or to cross-class alliances, see Esping-Andersen (1990).
- (7) For an analysis on the dependence of the state on capital, see Hirschman (1981) and Przeworski and Wallerstein (1988). The degree of capital mobility varies in fact depending on the type of capital and is inversely related to the latter's specificity. The less specific capital is (that is, the more alternative uses it can be put to), the more mobile it is, and the more power or influence capital has over the state. See Alt (1987) and Frieden (1991: 19-22).
- (8) For initial studies on a limited number of cases, see Titmuss (1958) and Peacock and Wiseman (1961). For initial cross-

sectional studies, see Cutright (1965) and Wilensky (1975) on advanced and developing nations, Jackman (1975) on American states, and Korpi (1989) and Cameron (1978) on OECD nations alone.

(9) Both data sources overlap substantially and their data are strongly correlated ($r=.9556$). To build the sample I have primarily used the data from UN National Accounts. Data from the Governmental Financial Statistics has been only taken for countries not reported by the UN.

(10) Rodrik (1998) and Cheibub (1998) have recently built broader samples that encompass developed and developing nations. Rodrik (1998), however, employs public consumption as a percentage of GDP. This is too limited a tool to measure the size of the welfare state and provides highly biased results (given how important public consumption is among developing countries). Cheibub (1998) employs data on central government, which also measures very imperfectly total public expenditure (especially for large, closed economies, that tend to be decentralized), and focuses only on the tax capacity associated to different political regimes.

(11) For a discussion of this point in the context of economic growth, see Olson (1993). Przeworski and Limongi (1997) offer, however, a less favorable vision of the monitoring capacity of democracy.

(12) For an extended discussion, see Boix (1999).

(13) For the results of estimating the impact of the average percentage of urban population, the average share of the agricultural sector over GDP, the average proportion of the labor force in the manufacturing sector, and the 'dependency ratio', that is the number of years life expectancy goes beyond 60, in 1970-90, on the size of the public sector, see Boix (1999).

(14) In the sample under analysis, there are very few authoritarian cases (some oil exporters) with a per capita income over \$8,000. The lack of dictatorships at high levels of developments is a well established fact in the literature. See Lipset (1959), Limongi and Przeworski (1997).

(15) For a formal treatment of this question, see Adserà and Boix (1998).

(16) In fact, aggregate demand management may become an effective strategy to minimize the occurrence of recessions. That is, imposing a closed economy actually allows policymakers to engage in countercyclical policies to smooth the business cycle. Romer (1993) and Campillo and Miron (1997) show that closed economies and inflation are strongly and positively correlated. By contrast, demand management in open economies can only take place under particularly stringent conditions (Alt 1985; Lange and Garrett 1985), and it is only sustainable in a temporary manner.

(17) For some evidence that the origins of the Scandinavian welfare state at the turn of the century may lie on the demand of agricultural-based exporting sectors to minimize production-related risks, see Baldwin (1990).

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