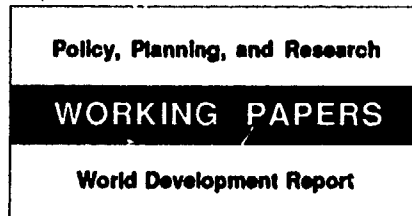


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The Size and Growth of Government Spending

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Over the last 20 to 30 years government spending as a share of GDP has grown worldwide. But in comparing developing and developed nations, the current levels, growth rates, composition, and determinants of government expenditures exhibit significant differences.

The growth of government in the developing economies is compared with the experience of the industrial countries. Relying on measures of government expenditure as proxies for government size the following is observed:

- In the developing nations, central government expenditures as a share of GNP range from 10.8 percent to 62.1 percent and exhibit greater variance than is found in the industrial countries.
- Developing economies, especially the low-income nations, devote, on average, smaller percentages of GDP to government spending than do OECD countries. But compared with the historical experience of the industrial nations, low and middle income nations already consume much higher fractions of GDP.
- For the last 20 to 30 years, expansion in the share of government spending as a percentage of GDP appears to have been the norm in both developing and developed countries.

- Transfer payments in developing nations are still at low levels when compared with advanced economies but appear to be growing quickly. Government consumption expenditures tend to be growing faster than GDP.

- Available data make it difficult to draw firm conclusions about what increases in government input costs versus increases in the level of public output contribute to the growth in public spending.

Numerous arguments can be raised to explain why the size of government relative to GDP has grown in most developing nations. Demographic factors, preferences for public provision of goods and services, and increasing unit costs of government production are all likely to have been influential. Development theorizing itself as well as the "demonstration effect" of advanced capitalist and socialist economies may also have played a role.

This is a background paper for the 1988 World Development Report. Copies are available free from the World Bank, 1818 H Street NW, Washington DC 20433. Please contact Rhoda Blade-Charest, room S13-060, extension 33754.

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Of the many distinguishing features of economies in the twentieth century, one pronounced trend has been for governments to spend ever larger proportions of national income. This result appears to hold across most countries regardless of the level of economic development. But what begins as a simple empirical observation about the growth of government, quickly gives rise to a wealth of controversies which range from technical debates over measurement and definition, to ideological disputes over the essential role of government in an economy.

In this paper an attempt is made to discuss two basic issues concerning the growth of government especially as it pertains to developing economies: (1) what have been the trends in the growth of government expenditures in developing relative to industrialized nations; and, (2) what are the potential explanations for the observed growth in spending by developing country governments. The paper is organized as follows.

Section I surveys the empirical evidence on the growth of government expenditures. First, a number of measurement issues are raised, including the definition of the public sector, the appearance of off-budget expenditures,

and the use of price deflators for government output. Section I then reviews available data on government expenditures for OECD and developing nations. Both a long term perspective, provided by several OECD economies, and contemporary experience, essentially since 1960, are presented.

In Section II, the determinants of the growth in government are considered. This literature covers demographic demands for expenditure growth, the changing relative prices of public vis-a-vis private goods, the income elasticity of public goods, and the arguments of the public choice school. Most of these explanations have been directed at understanding trends in industrialized nations, and little has been written on the relevance of these explanations for developing nations. This section briefly speculates on the determinants of government growth in developing countries against the backdrop provided by results on advanced economics.

I. Measuring the Growth in Government Expenditures

A. MEASUREMENT ISSUES

1. Defining the scope of the public sector.

Depending upon the specific question to be raised, government expenditures may or may not be a suitable proxy for the size of government. Any nominal valuation of government, be it an expenditure or revenue measure, implicitly assumes that government's role as a direct economic agent is what is to be assessed. Government's impact as a regulator of economic activity, through such macro or micro instruments as monetary policy or the tariff structure, clearly will not be captured by a nominal index which defines a government's size and influence exclusively in budgetary terms.¹

The size of government as a direct economic agent is, however, of enough interest and importance to recommend consideration of the extent of this role. While expenditure definitions of government, most frequently the ratio of government spending to GDP, are commonly used, alternatives to expenditure measures may be employed. These include revenue definitions of the size of government, such as, the ratio of government revenue to GDP or other measures of tax effort, or even budget deficit/surplus estimates, reflecting the difference between expenditures and revenues. The choice of measure depends, in part, on the question being raised. The impact of a government's fiscal expansion on matters of economic stabilization would appear to call for a budget deficit/surplus measure. But to get at such issues as how the division of output between public and private goods (or between public versus private provision of goods) affects economic growth requires the use of measures of total government spending.

For the remainder of this paper, an expenditure definition of government size is employed. Such a measure is in keeping with established conventions in the literature on growth in government and is relevant to the discussion of Section II below.²

2. The measurement of government expenditures.

Proceeding with an expenditure definition, the next step is to specify the units of government to be included. Beyond central government there exist state and local governments, statutory bodies and all the organizational forms commonly referred to as public enterprises. While in principle any

comprehensive definition of government should include all these entities, in practice, central government expenditures are often all that is recorded given the availability and reliability of expenditure data.

While measures of state and local expenditures are often simply unavailable, public enterprises pose problems that go beyond the problem of non-existent data. Since the U.N. System of National Accounts does not call for any unique treatment of public enterprises as organs of government³, public enterprise information rarely finds its way into sources concerned with quantifying government expenditures. The absence of data on public enterprises is particularly troubling, especially for developing nations, where the growth in state enterprises is believed to be a dominant form of government expansion in the past 10-20 years.⁴

While expenditure data on state and local governments and public enterprises may generally be absent from standard sources, other problems confront calculation of central government expenditures as a measure of total government spending. Often omitted are off-budget activities including tax expenditures, subsidies, government lending and government loan guarantees. Tax expenditures refer to the use of tax concessions for specific groups as a substitute for direct expenditures. The attractiveness of these fiscal instruments is their lack of transparency and overall controllability; however, at the same time they may be costly as they impart distortions to public resource mobilization and allocation. Furthermore, tax expenditures can confound both cross-country and intertemporal comparisons of the size and

growth of government especially when the use of tax expenditures changes. A telling example of this problem from an OECD setting follows:

Another case in point is government child support; in some countries (e.g. Canada and the United States) the number of children in a family determines the size of tax free income allowances, thus co-determining total tax revenue and its share in GDP. In other countries, (e.g. Germany and the Netherlands) the Government pays cash allowances to families with children, while a family's tax bill (and thus total tax revenue) is largely unaffected by the number of children. Thus, an item which enters the accounts as direct expenditure in the latter countries is treated as a tax expenditure in the former, reducing revenue rather than adding to expenditure. Even in the hypothetical case where the net effects on family disposable income and tax revenue are identical, the gross figures for government expenditure and revenue differ under the two approaches ... and are thus not directly comparable.⁵

While the extent of off-budget activity is not well quantified, the trend in OECD nations has been toward increasing use of these alternatives to direct expenditures. The same may be true for developing economies, although it is also possible that on balance fiscal reforms have led to direct payments replacing implicit subsidies.

3. Should one deflate?

In making intertemporal comparisons of government expenditures one runs into familiar index number problems. One method of avoiding the problem of deflating to constant dollars is to compare the ratio of government expenditures to GDP. An argument against this procedure is that the price of public goods may tend to rise more quickly relative to the prices of all other goods, i.e., private consumption and investment goods. This will be the case

if, following Baumol (1967), it is assumed that technological change is faster in the relatively less service-intensive private sector.⁶ Under such assumptions about relative price changes for public and private goods, government expenditure ratios based on current prices bias upwards the trend in the "quantity" of government output since relative price effects are not accounted for. An opposing position argues that nominal and not "real" shares of government expenditures actually are what is important as long as relative prices of public and private goods reflect consumer valuations.⁷ If this is the case, the share of output in value terms is the appropriate index of government's claim on income.

Whether nominal or real shares of government expenditures should be employed in analyzing the "size" of government clearly depends on the question being raised. Determination of the income elasticity of the demand for public goods would seem to require a real measure of government output. However, assessment of the resource requirements of government would favor a nominal index. Ultimately, getting a handle on the reasons behind the increasing (or decreasing) cost of government would benefit from a comparison of both measures. In any event, estimates of the growth in government expenditures reveal considerable differences depending on the choice of a constant versus current dollars measure.

4. The constraints of the data.

For OECD nations an array of government expenditure data are available and have been reported on. The opposite is the case for most developing nations.

Before surveying existing studies, a few dimensions of the available data are worth noting.

The two major sources of government expenditure data are national income accounts and government budgets, the former being more widely available and reported on in discussions of government size in developing countries. Standardized sources for national income accounts for developing nations tend to provide only government consumption (G_c), which differs from total government expenditures (G_e) by excluding government transfer payments (G_t) and government gross capital formation (G_i). By comparison, government budget data, widely available for OECD nations, tend to cover all components of G_e . Measures of G_e seem most appropriate for assessing the total resource cost of government activity. By comparison, G_c is a more limited index of the "resource burden" of government but may be a more precise measure of spending for public goods, per se.

One of the most standardized and comprehensive sources on G_c , in terms both of number of nations and years of coverage, has been provided by Summers and Heston(1984). This data set has been widely used by R. Ram, who has authored a number of recent empirical papers on the growth of government.⁸ The Summers and Heston series employs, so-called, 'international prices' in order to reflect truer purchasing power parity than is available by relying on official market exchange rates. These data are, therefore, deflated to a particular series of constant dollars. Given the differences between the Summers and Heston data and those employed by other researchers (i.e., most

often on G_e from the IMF's Government Finance Statistics Yearbook (GFSY), care must be taken in making any comparisons across studies.

B. OECD EXPERIENCE

The sizeable increase in the share of government expenditure out national income is a relatively recent phenomenon in OECD countries. Data for the United States illustrate this point (Table 1). While no one series runs from 1800 through the present, the general trend is clear. Federal government expenditures, measured in current dollars, account for a minimal share of national income until World War I. A significant dip characterizes the inter-war period, but thereafter the ratio of U.S. Government expenditures to GNP steadily marches on rising more than sevenfold between 1929 and 1984.

Peacock and Wiseman(1961) report a similar overall trend for the United Kingdom.¹⁰ In fact, the same historical trend applies to OECD nations as a group. Employing the narrower G_c definition of government spending, Kuznets (1966) (Table 2) shows that the share of G_c out of GNP in both Europe and the United States did not reach double digits until the 1940's, and often not until the 1950's.

Extending the OECD record into the contemporary period, Saunders and Klau(1985) employ comprehensive G_e data for 23 nations (Table 3), and report that government spending has, on average, increased from 26.3% to 47.0% of GNP in the years 1960 to 1982. (Tanzi(1986) provides similar information but for more years: 1960, 1971, 1975 and 1983. (Table 4)) Saunders and Klau(1985)

offer some further understanding of the sources of growth in government expenditures by dividing G_e into its constituent components: G_c , G_t and G_i . The elasticity of each spending category with respect to nominal GDP is reported and provides a summary measure of the growth in spending (Table 5). While in all cases both G_c and G_t exhibit greater than unitary elasticities, in most all cases transfers have been the fastest growing element in OECD expenditures. By comparison, in well over half of these nations, the elasticity of public investment has been less than or equal to one, reflecting a slowdown in the rate of government capital formation.

To better appreciate the sources of growth in government spending, at least for the U.S., Musgrave(1981) suggests some further disaggregation of total government expenditures. (Table 6 replicates and updates Musgrave's original table.) In addition to the growth in transfers, Musgrave highlights the variations in total expenditure growth both over time (i.e., high in the fifties and low in the seventies) and according to source (i.e. defense versus civilian; federal versus state and local), and concludes, "...it appears that the growth of Leviathan, especially in the recent past, is in the eyes of the beholder."¹¹ Focusing only on the endpoints, 1940 to 1986, total U.S. government expenditure shares rose by 16.9%. Transfers account for 10.5% of this increase. What remains is the 6.4% increase in government purchases ($G_e - G_t$), measured in current prices. By comparison, if the implicit price deflator of government purchases is applied, total "real" government purchases have grown by less than one percent with civilian purchases having actually declined by 3.0%. By implication, the increasing relative price of public

goods accounts for much of the total non-transfer payment increase in U.S. public expenditures.¹²

In summary, the OECD data suggest the following:

(1) Government spending varies considerably across OECD nations. In 1982 total government expenditure shares out of GDP ranged from 30.0%-67.3%.

(2) The substantial share of government expenditures out of national income is a relatively recent occurrence dating, in most countries, to the period following World War II;

(3) Transfer payments are a major source of recent increases in total government expenditures while government investment has represented a declining share. G_c elasticities, measured in current prices, also are above 1 in all OECD nations, and thus account for a share of the growth in total expenditures;

(4) While government expenditure elasticities with respect to GDP in value terms are greater than unity, relative price increases in the production of public goods may indicate, in real terms, government spending elasticities of a different magnitude. In the U.S. real expenditure elasticities appear close to or below unity for much of the post-war period.

C. DEVELOPING NATION EXPERIENCE

Information on the size and growth of government expenditures in developing economies is far less available than it is for OECD countries. The

long term perspective presented by Kuznets and others on Europe and the U.S. cannot be replicated for the nations of Africa, Asia and Latin America. Even the contemporary picture is difficult to piece together.

Since 1984, the World Bank's, World Development Report (WDR), lists both central G_e as a percentage of GNP (WDR, 1987, Table 23) and G_c as a share of GDP (WDR, 1987, Table 5). The first series, drawn from the GFSY, excludes state, provincial and local government expenditures. The notes to the various tables contained in these sources all urge caution in making cross-country comparisons based on the data. Nonetheless, some basic trends are suggested.

Of the 96 low and middle income economies listed in the 1987 WDR, 39 (74) provide government expenditure (consumption) data for both years considered: 1972 (1965) and 1985. In this sample, the developing economies, as a group, possess smaller government spending shares than do the industrialized market economies (Table 7). But it is also evident that the proportion of government spending in developing economies bears little resemblance to the historical experience of the now industrialized nations. Using a narrower definition of government spending, the share of G_c out of GDP in 1985 for developing nations, generally, is already in double digits (82% of cases). As noted above, this level was not reached by most advanced economies until the 1940's and 1950's (Table 2), when per capita income levels were already multiples of those of today's low and middle income nations. It, therefore, appears safe to conclude that if there is a "pattern of development" for government consumption, it is not particularly robust.¹³

Returning to Table 7 and looking across countries, a positive relationship between per capita income level and government consumption and expenditure shares, a generalized relationship often referred to as Wagner's "Law"¹⁴, is somewhat in evidence. In 1985, the value of median expenditure shares steadily increases across the four groupings of nations ranked from low-income to industrialized market economies. However, within any one group of countries, the range of both expenditure and consumption shares is broad enough so that a considerable overlap is present across all income groups.

A positive relationship between income level and government spending is also suggested by the movement in individual G_e (G_c) ratios over time. G_e (G_c) shares increase from 1972 (1965) to 1985 in 72% (69%) of the countries for which data are presented. However, sufficient numbers of cases are exceptions to this trend reflecting either: (a) serious misrepresentations in the data; (b) significant shifts in national political orientation; or, (c) counter-examples to Wagner's "Law". Caution again appears warranted in positing any unique relationship between government spending shares and per capita income level.

Beyond the WDR data, an examination of government expenditure trends in developing economies has been undertaken by Pluta(1981). Relying on fiscal data taken from the IMF's, International Financial Statistics (IFS), Pluta measures the growth in government expenditures for 20 non-African developing countries from, roughly, the early 1960's to the mid-1970's. IFS data rely on a country's own definition of government expenditures and are less comparable across countries than data obtained from the GFSY. Although Pluta does not

raise the issue, non-central government expenditures are probably omitted from IFS data just as they are in the WDR central government expenditure figures.

With these qualifications in mind, consider Pluta's results (Table 8). He finds a median value in the mid-1970's for G_e as a share of GDP of 17.4%. This is below half the median value of 43.2% reported by Tanzi(1986) (Table 4) for OECD economies in 1975. Furthermore, by the mid-1970's only two out of the twenty countries in Pluta's sample, Cyprus (27.8%) and Sri Lanka (30.0%), have G_e shares greater than the lowest value reported for any OECD country in 1975, Spain (24.7%). Even if state and local government expenditures were added to the developing country data, it is unlikely that the reported differences with OECD nations would change substantially.

Pluta also presents a decomposition of G_e suggesting some further differences between OECD and developing economies. Not surprisingly, transfer payments are a much smaller percentage of developing nation government outlays. In Pluta's sample the ratio, G_t/GDP , has a median value of 6.3% in the mid-1970's as compared to a mean value of 24.3% in OECD countries in 1982. The results suggest that the level and composition of government expenditures for developing economies differ substantially from those of industrialized economies.

When considering growth in government expenditures, a somewhat different result is obtained. Pluta estimates the elasticity of G_e , as well as of G_c and G_t , with respect to GDP in both current and constant prices for each nation (Table 9). The elasticities based on current prices can be compared

with those obtained by Saunders and Klau(1985) for OECD countries (Table 5), although differences exist between the two studies.¹⁵ The developing nation median elasticity for G_e is 1.25 and is remarkably close to the OECD median elasticity of 1.20. Median values for G_c are even closer while for G_t they are further apart.¹⁶ (Pluta offers no discussion of G_i .)

Relatively similar experience in the growth of government expenditures across countries is suggested by these statistics. However, the range in the individual elasticity estimates for the group of developing economies is large, 0.83 - 2.54. In contrast, the OECD values range from only 1.07 - 1.37. There, therefore, may be far less in common about the recent growth in government spending across these two groups of countries than might have at first appeared.

Another study, Ram(1987), shares this view noting:

The main conclusion is that there is much diversity in the character of the covariance between income and government expenditure in different countries. Therefore, it is difficult to make a universally valid statement and one can get a result of almost any kind ...¹⁷

Ram's conclusion is drawn from what must be the most extensive study of government consumption growth yet undertaken. He employs the data, described above on G_c in constant international prices generated by Summers and Heston(1984). Ram has 20-30 years of annual observations available per nation and estimates for each of 115 nations two related elasticities: (I) G_c with respect to GDP; and (II) (G_c/GDP) with respect to GDP per capita. (The latter

is often viewed as a better test of Wagner's "Law".¹⁸⁾ Table 10 reproduces Ram's results.

According to these data, Wagner's "Law" is rejected in about 40% of the cases, i.e., elasticity (I) or (II) being less than 1 or 0, respectively. Ram emphasizes the large variance in elasticity estimates and explains this outcome, as evidence of the lack of any "universality or inevitability" in the trend toward government expansion within nations.

But such a conclusion may be a bit hasty. For one, Ram's data do not include transfer payments, which seem to be growing faster than any other component of total G_e and would, therefore, increase the elasticity estimates in most cases.¹⁹ Second, some bias may be imposed by the particular constant price series employed. This latter point is an issue beyond that of whether real or nominal values of government spending are what should be measured in assessing the growth in government expenditures.

The potential measurement problem appears as follows. Ram's results provide elasticities based on constant prices for OECD countries for 1960 to 1980 which can be compared with the current price series from Saunders and Klau(1985) covering 1960 to 1982. Ram's OECD elasticities for G_c yield 8 out of 21 values below 1.00, in fact, 4 estimates between .51-.75. In comparison, Saunders and Klau's 23 elasticities for G_c based on current prices yield no value less than 1.07. If, as has been argued, the input prices facing government increase faster than other prices, constant price elasticities of G_c will be lower than the value based on current prices. However, the degree

to which Ram's results appear to fall below those of Saunders and Klau raise questions about the content of the implicit price deflator built into the Summers and Heston data.

The same problem, of course, could confront the developing nations in the sample. In fact, the problem may be worse as is suggested by Pluta's study which permits comparison of current and constant price elasticities for 20 developing nations (Table 9). These elasticities diverge considerably for individual countries -- in this case, constant price values both exceeding and falling below current price estimates. These results reflect the generally recognized unreliability of deflators for government spending which often are based on input prices and, hence, disregard changes in factor productivity.

In summary, although the data base is not particularly strong, the evidence on developing economies suggests the following:

- (1) Government spending varies considerably across low and middle-income nations. In 1985, central government expenditures as a share of GNP ranged from 10.8% to 62.1%, and government consumption as a share of GDP ranged from 6 to 45%. These variations in reported government spending exceed those observed in developed economies;
- (2) Compared to OECD countries, developing economies, on average, tend to devote smaller percentages of GDP to government spending. This seems especially true for low-income nations;

(3) However, compared to the historical experience in the now industrialized nations, low and middle-income nation governments are already consuming much higher fractions of GDP;

(4) The rate of growth of government spending in low and middle-income economies shows a good deal of variance, however, in at least value terms, the elasticity of G_e with respect to GDP appears, as in the OECD setting, to be greater than one in the majority of cases. Continued expansion in government spending shares, therefore, appears to be the norm, although in a number of cases government's share of national income appears to have fallen. This last result stands in sharp contrast to OECD experience where, despite the political rhetoric of the 1980's, not one nation has lowered its share of G_e to GDP;

(5) Looking at sources of growth in government spending, transfer payments, which are still at low levels relative to industrialized economies, appear to be growing quickly. G_c elasticities, in nominal terms, tend to be above unity but show considerable variance both above and below 1;

(6) Contrasting constant and current price elasticities, the available data make it difficult to draw any conclusions about relative price changes for public goods, and what contribution increasing input costs are making to the growth in public expenditures in developing nations.

II. Explaining the Growth in Government Expenditures

Explanations by economists for why governments grow have a long tradition, dating at least as far back as the late-nineteenth century writings of Adolph Wagner. More recently, the evolution of positive theories of government, often under the banner of the "Public Choice School", has made the subject a rich area for intellectual and political debate. Surveys of this literature include Mueller (1987), who offers an especially up-to-date treatment.²⁰

What the surveys reveal is that the literature on government expansion has had an almost exclusive focus on developed economies. Accounting for the growth of government in developing countries, therefore, involves less a review of previous studies than it does suggesting how concepts employed in industrialized settings can be applied to developing nations. These concepts or basic approaches to understanding government growth can be labelled:

(a) "cost-accounting"; (b) demand-side arguments and (c) supply-side factors. One additional set of explanations, also operating on the demand-side, (d) "development theorizing", is also considered below.

A. "Cost-Accounting"

The "cost-accounting" approach is employed by Saunders and Klau (1985) in their analysis of spending growth in OECD economies. These authors admit that they are not directly contributing to the debate over a positive theory of government, but rather, are simply trying to decompose the growth in OECD fiscal expenditures in a meaningful way.²¹ Specifically, they look at government programs including, education, health and social security, and

separate the effects of demographic influences, coverage changes, and increases in real benefits. Growth in pension expenditures, for example, is found due to an expanding system of entitlements resulting from both demographics and the broadening of coverage. In health and education, the level of benefits has grown more than the number of beneficiaries.

Comparable analysis of government budgets over a broad range of expenditure categories and/or countries does not appear to have been undertaken for the developing world. Nonetheless, this type of approach has much to recommend it. It would be useful to know by how much rapid population growth and subsequent demographic transitions account for growth in government consumption. A better understanding of how social services expenditures have grown in developing nations might contribute to discussions of the role to be played by means testing and cost recovery in government programs.

Expanded versions of the "cost-accounting" approach could further decompose the growth in government spending between increases in real benefits and number of beneficiaries, versus changes in the unit costs of providing these benefits. Such a decomposition could reveal the relative growth in real versus nominal expenditures. Lastly, a broad enough cost-accounting framework might be able to capture the impact of state enterprises on all public expenditures. One might observe that while advanced economy public sector obligations have increased due to expanding systems of entitlements and benefit levels, in developing economies increasing state ownership of the means of production may play a dominant role.

B. Demand-Side Arguments

The "cost-accounting" approach admittedly leaves the basic question begging, that is, why does the society want, permit or accept a growing share of output to be controlled by the public sector? The literature on this subject aims for a positive theory of government. On the demand-side the arguments include Wagner's law, preference explanations, and the models referred to as public choice theories.

Wagner's law fits neatly into a traditional analysis of demand. Wagner's argument, which is more appealing for merit goods than for transfers, is over the value of the income elasticity for public goods. Wagner gives many reasons why he believes this elasticity will be positive²², most revolving around the increasing demand for public goods resulting from the requirements of industrialization itself. Furthermore, if one accepts the hypothesis that the price of public goods relative to all other goods is likely to rise over time, the income elasticity will have to be larger than the price elasticity if Wagner's argument, alone, is to account for government spending growing as a share of national output. Ram's 1987 results on real government expenditure elasticities suggest minimal support for this last proposition. However, given questions about the reliability of any government price deflator, a more conservative conclusion is simply that Wagner's hypothesis, at best, accounts for only some of the growth in government spending in both developed and developing nations.

Another demand-side argument concerns tastes. Can growth in government spending be explained by a society's increasing preference for public over

private spending? If tastes are a determining factor, this may reflect either increasing preferences for public over private goods, or more likely, an increasing preference for public over private production.

The notion of increasing preferences for public over private goods is rejected by Mueller. His argument is that increasing urbanization--debatably a proxy taste parameter for public goods²³ -- is not empirically associated with higher levels of government spending across countries. With regard to preferences for public over private production, a host of arguments can be raised. Musgrave (1982) offers the following list:

The rationale for public employment differs with the context in which public employment arises. It may be called for (1) as a mere byproduct of public production undertaken as an alternative of regulating natural monopolies or of correcting for externalities; (2) because the very quality of the desired output requires public production; (3) because workers prefer public to private employment; (4) as an instrument of job creation; or (5) as a way of dealing with structural maladjustments in the labor market. Public production, of course, may also occur where none of these justifications applies. Public production may simply reflect institutionally embedded practices or, not infrequently, the interest of politicians.²⁴

Musgrave's list clearly goes beyond any simple notion of taste differences as a determinant of government growth. In the developing world, many of his arguments could account for expansion in public expenditures including those which emphasize the political economy which influences government production and employment decisions.

The theme of political economy is central to another set of demand-side factors which seek to explain government growth. The so-called public choice

school embodies a number of models, including median voter and public employee voting behavior, as well as theories of bureaucracy. Common to these arguments, and distinct from more traditional demand-side approaches, is a focus on who is demanding more government and how this demand results in excessive government expenditures.

Application of the public choice framework to the developing country context raises a number of problems. For one, many of the basic arguments are ably contested in the advanced economy setting. Second, models based on the calculus of public choice would seem to require systems of reasonably fair and democratic elections, circumstances not well matched in authoritarian states. While all nations, regardless of political structure, must resolve conflicts between vested interests, the explanatory powers of the public choice apparatus seems weakened if democratic institutions are absent. Models of bureaucracy where the wishes of the state are placed above those of the citizens may be more promising. In such models, "Citizens and political institutions constitute at most (loose) constraints against which political leaders and bureaucrats pursue their own personal interests."²⁵ For the developing world, this approach has a familiar ring to it.

C. Supply-side Factors

On the supply-side there are at least two distinct arguments. One is the unbalanced growth idea, most often attributed to Baumol (1967) and noted earlier. According to Baumol, productivity growth is slower in services than in non-services, primarily due to differential rates of technological change. However, wage payments are equalized across sectors. Since government

production tends to be service-intensive, the model predicts the increasing cost of government output if real levels of publicly provided goods and services are to be maintained. (Obviously this argument need not apply to the transfers part of government expenditures.) While Baumol's theoretical premise has not been subjected to much empirical verification²⁶, more attention should be paid to the unit costs of government production as a determinant of the growth in government spending. However, even if the unit costs of government relative to private production are found to increase over time, factors other than Baumol's differential technology dynamic, for example, greater inefficiency in public versus private production due to "softer" budget constraints, may be at work.

The other set of supply-side arguments can be dubbed, "Says Law of Government Spending", that is, public expenditures are driven by the availability of revenues. Peacock and Wiseman (1961), in essence, make this point in their ratchet model (also referred to as the "displacement effect hypothesis") of long-term government expenditure growth in the United Kingdom. Taxpayer acceptance of tolerable levels of tax burden change over time, not in a continuous manner, but in discrete steps usually following events like wars or major economic downturns. In the development setting, the "Please Effect", is somewhat analagous.²⁷ Once again, public expenditures, especially for consumption, are driven by available resources rather than vice versa. If there exists a policy bias toward increasing the rate of domestic savings through greater public saving, growing tax revenues may translate into more spending, perhaps, on public investment, but, according to Please (1967), as likely on government consumption. What these explanations share in common is

a focus on the "willingness-to-pay" for government. As such, they probably require some demand-side argument to account for why such willingness is, in fact, taken advantage of.

D. Development Theorizing

Any explanation for the growth in government in developing countries must come to terms with at least two empirical facts. One is that the developing nations have higher shares of government out of GDP than did the now advanced economies when they were at comparable levels of per capita income. The other is that there exists a general trend toward an increase in these shares over time.

The first observation is easier to account for than the second. The technology of statehood is different today than it was in the eighteenth and nineteenth centuries. The requirements of membership in the world of nations requires, for example, far more ambassadors today. The same could be said about public health specialists, airline flight controllers, customs agents, etc.

Turning to the second point, since we do not have a generally accepted positive theory of government growth for the advanced economies, we should not have high expectations for finding one for the developing nations. But one factor unique to the developing nations may be the role of the last 25-30 years of development theorizing and subsequent policy advice and directions. Since the late 1940s and early 1950s development models have often emphasized the extent of market failure in developing countries. The language of

theories which have long since gone out of fashion evoke an image of the need for more government. The Critical Minimum Effort, the Big Push, Balanced Growth, Redistribution With Growth, and A Basic Needs Strategy all suggest more and not less government.²⁸ Similarly, the seminal works of Denison and Schultz on sources of economic growth, and their emphasis on the importance of human capital²⁹, implicitly advocate more spending on education and health care, traditional domains for government expenditures. While the last decade of development theorizing has witnessed a marked reversal in orientation, with the market place not government prominently featured as the engine of growth, earlier theories and their legacy may have had an influence on the expansion of the public sectors of many developing countries.

If added to this kettle of abstract thinking are (1) the role of both multilateral and bilateral aid and their requirements for public not private sector counterparts; and, (2) the "demonstration effect" of successful capitalist and socialist countries, both with large and growing state sectors, then it should come as no surprise that government growth in developing nations received support if not inspiration from the developed countries. Practice and advice may, therefore, have operated on the demand-side to further encourage Third World leaders to expand the public sector's share of national output.

NOTES

* The author would like to thank Johannes Linn, Emmanuel Jimenez, and Bela Balassa for their comments.

1. The World Development Report, 1987 essentially places its emphasis on the role of government as a regulator of economic activity, not as a direct economic agent.

2. Studies which measure the size of government in terms of taxes include Marsden (1983) and Skinner (1987).

3. National income accounting treatment of public enterprises is discussed in Pathirane and Blades(1982).

4. Evidence on the growth in state enterprises can be found in Short (1984). Although heavily qualified, Short provides estimates of the average percentage share of public enterprise output out of GDP at factor costs for industrial countries (9.6%) and developing countries (8.6%). The variance around these averages, not surprisingly, is large.

5. Saunders and Klau(1985), p. 28.

6. For a critique of Baumol's hypothesis, see Mueller (1987), pp. 120-21, and the papers cited therein.

7. Pluta(1981), Ram(1987) and Beck(1979,1982) advocate and employ constant prices in their estimates of the share of government expenditures out of GDP. Musgrave(1981), pp. 84-87, argues in favor of the use of current price estimates.

8. See Ram (1986a, 1986b, 1987).

9. A longer and more global perspective is given in Webber and Wildavsky(1986). They devote several hundred pages to tax and expenditure issues from the ancient through the medieval world.

10. Peltzman(1980) updates the Peacock and Wiseman(1961) series.

11 Musgrave(1981), p. 83.

12. Beck(1979) makes a similar point for 13 OECD nations, including the U.S., for the period 1950 to 1977. He concludes, "... much, if not most, of the increase in government consumption expenditure has resulted from higher costs, rather than expansion of volume." (p.314)

13. This point is confirmed statistically by the work of Chenery and Syrquin(1975). They regress the share of G_c out of GDP as a function of per capita income, population, net resource inflow and a number of time trends. The data are a pooled time series of developed and developing nations. The government consumption equation is one of twelve relationships considered part of the "resource allocation process." Other such relationships include the share of GDP accounted for by primary production, exports, etc. Of the twelve separate resource allocation regressions, the G_c equation has the lowest R^2 , by far, equaling only .083. (See their Table 5.)
14. The proposition that in a growing economy the scale of government activity tends to expand relative to the national economy is attributed to Adolph Wagner(1890). It is most often interpreted to refer to government consumption and not government transfer payment expenditures. The relationship has been subject to considerable empirical and theoretical debate in the literature. Ram(1987) contains useful references.
15. The problems with comparing the two studies are: (1) they differ in terms of what is included as government expenditure, with the OECD study employing a more comprehensive definition; and, (2) the time periods differ, roughly 1960 to 1975 for developing economies, and 1960 to 1982 for OECD nations.
16. The high elasticities of G_t in Pluta's sample reflect the low levels of transfer payments in developing economies. The median value of the share of G_t out of GDP in the sample is only 2.6% in 1960.
17. Ram (1987), p. 196.
18. On this point, see, again, Ram (1987), especially note 1, for a listing of the relevant theoretical literature.
19. In all fairness to Ram, he does acknowledge this limitation of his data and argues for the robustness of his results, especially in terms of his main purpose which is an empirical test of Wagner's "Law" which is usually viewed as exclusive of transfers. (see Ram(1987), pp. 202-3.)
20. Musgrave (1981) offers an often cited critique of the public choice view of government expansion.
21. Saunders and Klau (1985), Section III.
22. Recall, the alternative contemporary formulations of Wagner's law are the elasticity of G_c with respect to GDP versus the elasticity of G_c /GDP with respect to GDP per capita. Since the latter formulation is generally seen as capturing Wagner's original hypothesis, the presence of a positive elasticity is the appropriate empirical test.
23. Mueller(1987) argues as follows. "The very definitions of public goods and externalities connote geographic proximity. [For example, t]he smoke from a factory harms more individuals in a densely populated community than when the population is thinly dispersed around the factory."(p.119) Urbanization or population density, thus, can be construed as a "taste parameter" for

public goods which is hypothesized to be positively associated with the level of government expenditures.

24. Musgrave (1982), p. 17-18.

25. Mueller (1987), p. 142.

26. Mueller (1987) cites Pommerchne and Schneider (1982) as at least offering an indirect test of Baumol's hypothesis. Their results on government spending by Swiss municipalities supports Baumol's conclusions.

27. This effect is attributed to Stanley Please on the basis of arguments contained in Please (1967).

28. Arndt (1987), although not suggesting this particular perspective, offers a comprehensive review of development theorizing over time.

29. The often cited works of these authors include Denison (1962) and Schultz (1961).

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TABLE 1

*Government Expenditure in Relation to National Income
and Gross National Product in the United States, 1799-1985*

Year	Total Federal Expendi- tures (In millions of current dollars) (1)	Total Federal Expendi- tures (As percent- age of national income) (2)	Total Federal Expendi- tures (As percent- age of GNP) (3)	Total Federal Expendi- tures (As percent- age of GNP) (4)	Federal, State, and Local Expendi- tures (In millions of current dollars) (5)	Federal, State, and Local Expenditures (As percent- age of GNP) (6)
1799	10	1.4				
1809	10	1.1				
1819	21	2.4				
1829	15	1.6				
1839	27	1.6				
1849	42	1.7				
1859	66	1.5				
1869	316	4.6	5.0			
1879	267	3.7	3.2			
1889	309	2.9	2.6			
1899	563		3.4			
1909	694		2.3			
1919	12,402		16.7			
1929	3,100		3.0	3.0	10,300	10.0
1939	8,800		11.7	9.7	17,600	19.4
1949	38,800		16.2	15.0	59,300	23.0
1959	92,100			18.9	131,000	26.8
1969	183,600			19.4	286,800	30.4
1979	503,500			20.8	750,800	31.1
1984	851,800			23.3	1,258,100	34.4
1985*	959,100					

Sources: Figures for columns 2 and 3 are from Kendrick (1955, pp. 10-12; for column 3, Kendrick reports data from Kuznetz). Figures for columns 4, 5, and 6 are from United States, *Economic Report of the Presidents* (1985 and 1986, Tables B-1, B-72, and B-74).

* Preliminary figure.

Source: Mueller (1987), Table 1

Table 2: Government Consumption as a Share of GNP (%)

<u>United Kingdom</u>		<u>Germany</u>	
1860-79	4.8	1851-70	4.0
1880-99	5.8	1871-90	5.9
1900-14	7.4	1891-1913	7.1
1921-29	8.9	1928	7.2
1950-58	16.9	1950-59	14.4
<u>Italy</u>		<u>Denmark</u>	
1861-80	4.2	1950-59	12.5
1881-1900	4.8		
1901-10	4.2		
1921-30	5.6		
1950-59	12.0		
<u>Norway</u>		<u>Sweden</u>	
1865-74	3.8	1861-80	4.4
1875-94	4.8	1881-1900	5.4
1895-1914	6.6	1901-20	5.8
1915-24	8.5	1921-40	8.6
1925-34	8.7	1941-59	14.3
1950-59	12.5	1950-59	16.8
<u>United States</u>		<u>Canada</u>	
1869-88	3.6	1870 and 1890	5.6
1889-1908	4.4	1890, 1900, 1910	7.4
1909-28	4.9	1920, 1929	10.5
1929-38	9.4	1926-30	7.5
1946-55	15.4	1950-59	14.1
1950-59	17.9		
<u>Australia</u>		<u>Japan</u>	
1950-60	9.9	1950-59	10.3
<u>U.S.S.R.</u>			
	1928		3.4
	1937		11.1
	1950		17.2
	1955		15.2
	1960		20.3

Source: Kuznets (1966), Table 5.3.

Table 3

*General Government Expenditure and Revenue in Relation
to Gross Domestic Product at Current Prices in OECD Countries*
(In percent)

Country	1960		1982	
	Expenditure	Revenue	Expenditure	Revenue
Australia	22.1	25.4	36.3	34.2
Austria	32.1	31.0	50.3	46.7
Belgium	30.3	27.5	56.6	45.5
Canada	28.9	26.0	56.5	45.4
Denmark	24.8	27.3	60.7	50.7
Finland	26.7	30.0	41.3	39.7
France	34.6	34.9	50.7	46.9
Germany, Fed. Rep. of	32.5	35.1	49.4	45.3
Greece	17.4 ^a	21.1	37.04 ^a	31.3
Iceland (1960-80)	28.2	36.4	34.4	36.0
Ireland (1960-81)	28.0	24.8	57.1	42.3
Italy	30.1	28.8	53.7	41.5
Japan	18.3	20.7	34.2	30.2
Luxembourg (1960-80)	30.5	32.5	54.3	51.5
Netherlands	33.7	33.9	63.7	55.8
Norway	29.9	33.1	48.8	52.8
Portugal (1960-81)	17.0	17.6	42.7	33.2
Spain (1964-81)	18.8	18.8	34.1	30.6
Sweden	31.1	32.2	67.3	59.7
Switzerland	17.2 ^a	23.3	30.0 ^a	33.2
Turkey (1962)	18.0	19.1
United Kingdom	32.6	30.3	47.4	43.7
United States	27.6	27.3	37.6	32.0
Mean (unweighted)	26.3	27.7	47.0	41.9
Coefficient of variation	0.24	0.21	0.22	0.21

^aCurrent disbursements only.

Source: Mueller (1987), Table 2;
Taken from Saunders and Klau (1985),
Table 2.

Table 4

Total General Government Expenditure, 1960-83

(Percent of GDP)

	1960	1971	1975	1983
United States	27.5	32.3	35.6	38.1
Japan	18.3	20.8	27.3	34.8
Germany, Fed. Rep. of	32.4	40.1	48.9	48.6
France	34.6	38.3	43.5	51.5
United Kingdom	32.4	38.1	46.4	47.2
Italy	30.1	36.6	43.2	57.4
Canada	28.9	36.6	40.8	46.8
Average of the above	<u>29.2</u>	<u>34.7</u>	<u>40.8</u>	<u>46.3</u>
Australia	22.1	26.2	32.3	36.4 ^{1/}
Austria	32.1	39.7	46.1	50.4 ^{1/}
Belgium	30.3	38.0	44.5	56.3
Denmark	24.8	43.0	48.2	61.1
Finland	26.6	32.1	36.3	40.3
Greece	17.4	22.8	26.7	38.3
Iceland	28.2	32.6	38.7	34.4 ^{1/}
Ireland	28.0	40.5	46.6	54.7
Luxembourg	30.5	36.3	48.9	60.8
Netherlands	33.7	48.0	56.6	62.8
Norway	29.9	43.0	46.6	48.9
Portugal	17.0	21.3	30.3	42.5 ^{1/}
Spain	18.8	23.6	24.7	36.6 ^{1/}
Sweden	31.1	45.8	49.3	66.8 ^{1/}
Switzerland	17.2	21.9	28.7	30.8
Average of the above	<u>25.8</u>	<u>34.3</u>	<u>40.3</u>	<u>48.1</u>
Overall average	<u>26.9</u>	<u>34.4</u>	<u>40.5</u>	<u>47.5</u>

Source: OECD and EC.

^{1/} Refers to either 1981 or 1982.

Source: Tanzi (1986), Table 2.

**Table 5: General Government Expenditure Elasticities
With Respect to GDP**

	<u>Period</u>	<u>Total</u>	<u>Consumption</u>	<u>Transfers</u>	<u>Investment</u>
Australia	1960-1982	1.19	1.24	1.18	1.00
Austria	1964-1982	1.18	1.21	1.24	0.95
Belgium	1960-1982	1.31	1.22	1.38	1.19
Canada	1960-1982	1.19	1.16	1.30	0.90
Denmark	1971-1982	1.29	1.22	1.49	1.78
Finland	1960-1982	1.14	1.17	1.18	0.91
France	1960-1982	1.12	1.08	1.19	0.87
Germany	1960-1982	1.25	1.25	1.32	0.97
Greece	1960-1982	1.21	1.15	1.29	*
Iceland	1960-1980	1.07	1.07	1.06	1.08
Ireland	1970-1981	1.19	1.20	1.21	1.05
Italy	1960-1982	1.19	1.09	1.28	1.10
Japan	1965-1982	1.32	1.16	1.54	1.14
Luxembourg	1970-1980	1.55	1.46	1.60	1.51
Netherlands	1960-1979	1.28	1.13	1.47	0.89
New Zealand	1960-1982	*	1.19	*	*
Norway	1962-1982	1.22	1.15	1.31	1.00
Portugal	1960-1976	1.26	1.10	1.52	1.28
Spain	1964-1981	1.20	1.16	1.31	0.94
Sweden	1960-1982	1.35	1.30	1.53	0.96
Switzerland	1960-1982	1.37	1.21	1.53	*
Turkey	1962-1972	1.11	1.09	1.32	1.00
United Kingdom	1960-1982	1.15	1.12	1.21	0.95
United States	1960-1982	1.13	1.02	1.41	0.58
Mean		1.23	1.17	1.34	1.00
Median		1.20	1.16	1.31	1.00

* Not available.

Source: Saunders and Klau (1985), Table 3.

Table 6: Trends in the United States Government Budget

	1940	1950	1960	1970	1980	1986
I. Public Expenditures as Percent of GNP, Current Prices						
1. Total Expenditures	18.4	21.3	26.9	31.8	32.6	35.3
2. National Defense	2.2	4.9	8.8	7.5	5.2	6.6
3. Civilian	16.2	16.4	18.1	24.3	27.4	28.7
4. Total Expenditures	18.4	21.3	26.9	31.8	32.6	35.3
5. Federal	10.0	14.2	18.3	20.8	22.5	24.5
6. State and Local	8.4	7.1	8.6	11.0	10.1	10.8
7. Total Expenditures	18.4	21.3	26.9	31.8	32.6	35.3
8. Purchases	14.2	13.4	19.8	22.3	19.4	20.6
9. Transfers	4.2	7.9	7.1	9.5	13.2	14.7
10. Total Purchases	14.2	13.4	19.8	22.3	19.4	20.6
11. National Defense	2.2	4.9	8.8	7.5	5.2	6.6
12. Civilian	12.0	8.5	11.0	14.8	14.2	14.0
II. Public Expenditures as Percent of GNP, 1982 Prices						
13. Total Purchases	19.4	19.1	24.6	24.6	19.5	20.3
14. National Defense	3.0	7.2	11.0	8.5	5.3	6.9
15. Civilian	16.4	11.9	13.6	16.1	14.2	13.4

Line 2: Includes National Defense purchases only.

Line 3: Line 1 minus Line 2.

Line 6: Federal grants included at federal level.

Line 9: Includes interest.

Line 14: National Defense expenditures are deflated by index for federal purchases.

Line 15: Line 13 minus Line 14.

Source: Musgrave (1981), Table 1 (updated).

Table 7: Government Spending Out of National Income (%)

	<u>Central G_e/GNP</u>		<u>G_c/GDP</u>	
	<u>1972</u>	<u>1985</u>	<u>1965</u>	<u>1985</u>
A. Low-Income				
1. Median	19.7	19.7	11	12
2. Range	8.5-34.0	12.5-32.6	6-23	6-20
3. % with growing or constant government share				
4. (# Observations)		75 (12)		56 (25)
B. Lower Middle Income				
1. Median	16.7	22.7	12	14
2. Range	9.6-43.2	10.8-48.2	5-34	7.45
3. % with growing or constant government share				
4. (# Observations)		76 (17)		74 (31)
C. Upper Middle Income				
1. Median	19.6	24.8	12	13
2. Range	12.7-62.1	6.9-62.1 ^a	7-20	7-21
3. % with growing or constant government share				
4. (# Observations)		70 (10)		78 (18)
D. Industrialized Market				
1. Median	28.5	38.2	14	19
2. Range	12.7-40.8	17.8-57.1	7-18	10-27
3. % with growing or constant government share				
4. (# Observations)		100 (18)		100 (19)

^a Israel, a middle-income country, reports a share above this range, 97.6%. However, this value was omitted because it seems particularly unrepresentative.

Source: World Bank (1987), Tables 5 and 23.

Table 8

**Government Expenditure as a Percent of GDP, Growing Public Sectors
(Ranked According to Most Rapid Real Growth)**

Country	In Constant (1960) Prices						In Current Prices		
	Beginning of Period			End of Period			End of Period		
	G	G _r	G _i	G	G _r	G _i	G	G _r	G _i
Pakistan	7.0	6.5	0.5	13.8	9.9	3.9	14.6	10.8	3.9
Honduras	8.7	8.0	0.7	12.7	11.2	1.5	14.1	12.6	1.5
Chile	16.0	9.7	6.4	23.8	13.5	10.3	19.9	12.2	7.7
Cyprus	17.7	15.9	1.8	26.7	14.1	12.5	27.8	16.3	11.5
Turkey	13.2	10.5	2.7	19.8	11.2	8.6	22.3	13.9	8.4
Bolivia	10.4	8.7	1.8	14.2	12.6	1.6	14.2	12.6	1.6
Panama	15.8	11.2	4.7	21.7	12.9	8.8	23.5	15.1	8.4
Peru	13.8	8.5	5.4	17.8	9.7	8.1	20.3	13.0	7.3
Philippines	12.8	8.1	4.7	16.5	8.7	7.8	17.5	9.8	7.7
Thailand	13.0	10.0	3.1	16.3	11.1	5.2	15.7	10.4	5.3
Singapore	16.7	7.3	9.4	20.5	9.9	10.6	20.0	9.6	10.4
Colombia	7.6	6.1	1.5	8.4	6.4	2.0	9.2	7.3	1.9
Guatemala	9.6	7.0	2.6	10.2	6.2	4.0	10.8	6.7	4.2
MEDIAN (13 growing public sectors)	13.0	8.5	2.7	16.5	11.1	7.8	17.5	12.2	7.3
MEDIAN (all 20 countries)	13.1	9.9	2.6	16.4	10.5	7.0	17.4	10.8	6.3

**Government Expenditure as a Percent of GDP, Declining Public Sectors
(Ranked According to Most Rapid Real Decline)**

Country	In Constant (1960) Prices						In Current Prices		
	Beginning of Period			End of Period			End of Period		
	G	G _r	G _i	G	G _r	G _i	G	G _r	G _i
Brazil	10.4	10.1	0.3	7.6	6.9	0.6	10.8	10.3	0.5
Taiwan	21.2	19.8	1.4	15.7	9.7	6.1	20.8	15.6	5.2
Paraguay	10.6	8.1	2.6	9.5	6.9	2.6	8.5	6.0	2.5
Argentina	10.2	8.2	2.0	9.3	6.3	3.0	14.0	10.0	4.0
Dominican Republic	18.3	11.6	6.7	17.3	6.6	10.7	17.3	6.4	10.8
Sri Lanka	27.5	14.4	13.1	26.5	11.4	15.1	30.0	11.6	18.5
South Korea	17.5	15.0	2.5	17.0	9.1	7.9	19.2	10.8	8.4
MEDIAN (7 de- clining pub- lic sectors)	17.5	11.6	2.5	15.7	6.9	6.1	17.3	10.3	5.2
MEDIAN (all 20 countries)	13.1	9.9	2.6	16.4	10.5	7.0	17.4	10.8	6.3

Source: Piuta (1981), Table 3 and 4.

Table 9

Income Elasticity of Government Expenditure, Late 1950s to Mid 1970s^a
(Ranked According to Most Rapid Real Growth)

Country	Constant Prices ^b			Current Prices ^b		
	G	G _c	G _t	G	G _c	G _t
Pakistan	4.09	2.50	26.49	2.54	1.91	11.34
Honduras	2.41	2.22	4.62	2.00	1.92	2.99
Chile	2.40	2.16	2.78	1.26	1.25	1.28
Cyprus	2.24	0.73	15.45	2.05	1.15	9.47
Turkey	1.99	1.12	5.45	1.86	1.40	3.68
Bolivia	1.75	1.95	0.77	1.43	1.53	0.93
Panama	1.62	1.26	2.48	1.66	1.48	2.09
Peru	1.49	1.25	1.86	1.50	1.55	1.40
Philippines	1.49	1.12	2.13	1.45	1.28	1.73
Thailand	1.35	1.16	1.99	1.25	1.06	1.85
Singapore	1.33	1.52	1.18	1.21	1.32	1.13
Colombia	1.19	1.08	1.62	1.25	1.25	1.26
Guatemala	1.11	0.79	1.97	1.17	0.92	1.85
South Korea	0.96	0.49	3.86	1.19	0.78	3.68
Sri Lanka	0.94	0.61	1.29	1.13	0.74	1.57
Dominican Republic	0.90	0.17	2.15	1.00	0.48	1.81
Argentina	0.87	0.59	1.99	1.18	0.99	2.36
Paraguay	0.80	0.74	0.98	0.76	0.70	0.96
Taiwan	0.64	0.28	5.58	0.96	0.74	3.99
Brazil	0.57	0.51	2.51	0.87	0.83	6.55
MEDIAN (all 20 countries)	1.34	1.10	2.14	1.25	1.20	1.85
MEDIAN (13 growing public sectors)	1.62	1.25	2.13	1.45	1.32	1.85
MEDIAN (7 declining public sectors)	0.87	0.51	2.15	1.00	0.74	2.36

NOTES:

^a In nearly all cases, elasticity coefficients in this table, expenditure to GDP ratios in Tables 3 and 4, and indexes of government expenditure in Table 5 were calculated from three-year averages of fiscal and income data. While the actual years used vary somewhat between countries because of data availability, an effort was made to select three years from the late 1950s and the latest three years for which data were available. The actual years used for each country are listed in Table 5.

^bG = total government expenditure

G_c = government consumption expenditure

G_t = government transfers

Source: Pluta (1981), Table 1.

Table 10

INCOME AND GOVERNMENT EXPENDITURES: SUMMARY OF ELASTICITIES FROM TIME-SERIES DATA FOR 115 COUNTRIES^a

Range	Full Sample		Less Developed Countries (LDCs)		Developed Countries (DCs)		Central/South American LDCs		African LDCs		Asian LDCs	
	1950-80	1960-80	1950-80	1960-80	1950-80	1960-80	1950-80	1960-80	1950-80	1960-80	1950-80	1960-80
A. Elasticity of General Government Share (G/Y) with Respect to GDP Per Capita (PCY): Number of Countries in Various Ranges												
Below -0.50	3	12	2	12	1	0	2	3	0	8	0	0
-0.26 to -0.50	11	17	5	13	6	4	2	4	1	6	1	3
0.00 to -0.25	13	16	9	12	4	4	6	4	1	5	1	1
0.01 to 0.25	11	22	6	17	5	5	4	5	0	7	2	4
0.26 to 0.50	14	21	9	14	5	7	3	1	2	6	2	4
0.51 to 0.75	5	15	5	14	0	1	2	3	2	8	1	2
above 0.75	6	12	6	12	0	0	2	4	3	3	1	5
Total	63	115	42	94	21	21	21	24	9	43	8	19
Negative and statistically significant ^b	14	23	6	17	8	6	3	4	0	8	2	3
Negative but statistically insignificant	13	22	10	20	3	2	7	7	2	11	0	1
Positive and statistically significant ^b	24	43	16	33	8	10	5	7	6	13	3	10
Positive but statistically insignificant	12	27	10	24	2	3	6	6	1	11	3	5
Mean Value	0.14	0.13	0.23	0.14	-0.04	0.08	0.13	0.08	0.54	0.04	0.25	0.49
B. Elasticity of General Government Expenditure (G) with Respect to Aggregate GDP (Y): Number of Countries in Various Ranges												
Below 0.00	0	2	0	2	0	0	0	0	0	1	0	1
0.00 to 0.25	0	4	0	4	0	0	0	1	0	2	0	0
0.26 to 0.50	0	2	0	2	0	0	0	0	0	2	0	0
0.51 to 0.75	9	9	4	5	5	4	2	2	0	2	1	1
0.76 to 1.00	14	24	8	20	6	4	6	5	0	9	1	4
Above 1.00	40	74	30	61	10	13	13	16	9	27	6	13
Total	63	115	42	94	21	21	21	24	9	43	8	19
Significantly greater than unity ^b	32	54	24	43	8	11	10	10	8	20	4	11
Mean Value	1.12	1.14	1.19	1.16	0.97	1.06	1.14	1.18	1.50	1.16	1.07	1.23

^a The elasticities are estimated by regressing the natural logarithm of (G/Y) on that of PCY , and of G on that of Y . Estimation is done by a feasible generalized least-squares procedure based on the postulate of a first-order autoregressive stochastic disturbance term. The package used is Statistical Analysis System (SAS), and the procedure used is AUTOREG. Detailed estimates for individual countries are available from the author.

^b The significance of all estimates is considered, for the purpose of this table, at the 5% level.

Source: Ram (1987), Table 1.

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