IMPACT OF GOVERNMENT ON GROWTH AND TRADE

Anne O. Krueger

David Orsmond

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ABSTRACT

In this paper we attempt to test the development economist's
perceptions of the negative contributions of governmental
activities, as well as the positive contributions of other
activities, to growth. This paper provides evidence on the
importance of government behavior for economic growth and, in so
doing, attempts to start building a bridge between the
development economics literature and the new growth theory. The
focal point is the recognition that governments do more than
spend and tax in manners that maximize social welfare functions:
they influence incentives and regulate in ways that affect
private behavior, and their spending, even on infrastructure, is
not always optimal.

Anne O. Krueger   David Orsmond
Department of Economics   Department of Economics
227 Social Science Building   Duke University
Duke University   Durham, NC 27706
Durham, NC 27706

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Anne O. Krueger and David Orsmond*

In the 1950s and 1960s, efforts to develop a theory of economic growth proceeded along two main, and largely independent, lines. On one hand, there was a line of research concerned with a theory of economic growth pertaining chiefly to those characteristics believed to be particular to developing countries. On the other hand, neoclassical growth theory was developed, stimulated by the seminal work of Solow.

Initially, the focus of those concerned with the economic growth of the developing countries was primarily upon ways of achieving more rapid capital accumulation in the context of a dual-economy, labor-surplus, model in which a variety of "structural rigidities" and market imperfections were thought to have been responsible for the economic backwardness of developing countries. Attention therefore centered on reasons for backwardness, and the role of government in overcoming market failures.

Neoclassical growth theory, by contrast, was developed on the assumptions that markets function well and that the production function (with at least labor and capital as inputs) had constant returns to scale. Growth in the long run could therefore originate only through technical progress.

Over time, the attention of those seeking a theory of development shifted from a primary concern with capital accumulation in dual economy models to a broader effort to understand the interaction of factor accumulation and govern-

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*Duke University.

ment policies in the development process. This research was stimulated in large part by the experience of developing countries. A key stylized fact was that growth rates were widely divergent among developing countries, and that economic policies -- especially with respect to the foreign sector -- were one crucial factor that differed between rapidly and slowly growing countries. In the lore of trade and development economists, the fact that Korea's average annual rate of growth of real GNP rose from under 5 percent in the 1950s to over 10 percent in subsequent decades was associated in part with the shift in the trade and payments regime. By the 1980s, other countries had also experienced large apparent changes in rates of growth and of exports and the empirical regularity appeared confirmed.[1]

By contrast, interest in neoclassical growth models appeared to fade by the late 1960s. The assumption of constant returns to scale evidently implied that economic growth would eventually halt unless new technologies emerged: for any given production function, labor force growth rate, and savings behavior, these models predicted an approach to a steady state per capita income level.

In the mid-1980s, however, Lucas (1988) and Romer (1986) began considering models in which the presence of plausible externalities or increasing returns to scale could explain the continuation of more-or-less constant growth rates over long time periods. The results were impressive and have led to a revival of interest in growth models, based essentially upon neoclassical premises, but with externalities or increasing returns capable of generating an escape from the "steady state" conclusions of earlier work.[2]

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[1]See, for example, Balassa (1989).

[2]For recent extensions, see, for example, Murphy, Shleifer and Vishny (1989), and Romer (1990).

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To date, however, the new economic growth models generally assume efficient resource allocation in all economies; sources of differences in growth rates emanate from differences in earlier paths of accumulation and output, but not in the degree to which governmental policies differ or in the efficiency with which resources are consequently allocated. There is a danger that the new economic growth literature and the development economics literature will once again fail to connect.

Recently, Barro (1989a and 1989b) began closing the gap by examining the role of governments in new economic growth models, taking into account human capital formation and savings behavior. In his models, government investment expenditures contribute positively to output. Infrastructure is assumed to be effectively provided free of charge to potential users. Barro assumes that more infrastructure augments the productivity of resources in private production. He separates government spending into this "productive spending," from spending on consumption, with the former expected to be positively correlated with growth and the latter negatively. His tests using Summers and Heston's (1988) data from 72 countries bear this out.

In Barro's model, consumption expenditures simply detract from available investible resources. In this paper, we go further, attempting to test the development economist's perceptions of the negative contributions of governmental activities, as well as the positive contributions of other activities, to growth. This paper provides further evidence on the importance of government behavior for economic growth and, in so doing, attempts to start building a bridge between the development economics literature and the new growth theory. The focal point is the recognition that governments do more than spend and tax in manners that maximize social welfare functions: they influence incentives and regulate in ways

that affect private behavior, and their spending, even on infrastructure, is not always optimal. A first section outlines some of the stylized facts that have emerged from development economics regarding governmental behavior and its impact on growth. A second section then describes our approach to testing for both positive and negative effects of government activities and describes our data. A third section presents the results. A final section provides some tentative conclusions and suggests further lines of research.

We have been guided in part by Jones' contributions to the evolution of both development theory and to understanding of two-sector models of trade and growth in important ways. He demonstrated how factor market distortions - the result of government interventions that raise the urban wage or lower the cost of capital - could affect the allocation of resources and negatively affect trade (Jones 1971). His contributions to understanding the Heckscher-Ohlin-Samuelson model (Jones 1956, 1965, 1977 and 1979) have provided an analytical underpinning for empirical analysis of the contribution of differences in factor proportions and trade to economic growth.[3] As will be seen below, trade policies - as reflected in our estimates as well as in earlier works in the development literature - do affect growth rates, and an important reason is the opportunities that trade provides for a developing country to use its abundant factors of production effectively.

1. Government Policies in Developing Countries

In practice, many developing countries have adopted economic policies that are highly inimical to economic growth. These include: monetary and fiscal policies that result in quadriple digit rates of inflation; expenditure patterns

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[3]See, for example, Krueger (1977).

on both consumption and investment that result in a great deal of waste[4]; the construction of parastatal enterprises to undertake manufacturing activities, usually at very high costs; the monopolization of economic activities such as agricultural distribution by the public sector with gross inefficiencies in the delivery of inputs and the collection of outputs; price controls over economic activities; regulation of private investments through licensing; maintenance of overvalued exchange rates and import licensing regimes with strong disincentives for exports and consequent "foreign exchange shortage"; and regulation of the financial system in ways such that real interest rates paid by those receiving funds are strongly negative while many other producers are precluded from borrowing channels.

However, governments also undertake activities that are potentially growth promoting: the construction of essential infrastructure services such as roads, ports, electicity, and telephones; the provision of education and public health facilities; maintenance of law and order; the development of irrigation; and agricultural research and extension services.

In practice, however, not all investment on infrastructure is productive. In part, political-bureaucratic motivations may lead to expenditures and/or employment in infrastructure facilities that are nonoptimal. This can occur because concern is more with maximizing employment than with attaining a social overhead facility at low cost; it can also occur because regional and other political situations result in the location, size, or even sector of the

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[4]One of the horror stories emerging from the debt crises of the 1980s was that, in the Philippines, a nuclear power plant had been built at a cost of $4 billion that had never been operated. It takes considerable persuasion to convince nonprofessionals that the Philippines were lucky relative to countries where public-sector activities have been the recipients of the majority of investment, and where they do not cover their operating costs.

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investment to be uneconomic. In developing countries, stories of investments (unmaintained) in four-lane highways without significant traffic, sports stadia, ultramodern airports, new capital cities, and in expanding university capacity while leaving many illiterate are too common to ignore.

In addition, government controls, and the incentives they create, affect the output per unit of input, and its growth, in the private sector. That highly overvalued exchange rates, extreme levels of protection, credit rationing, labor market regulations, and other measures are important in many developing countries cannot be doubted. Most development practitioners believe, and available evidence suggests, that these practices are important in affecting growth. Again, the question is how to estimate their relative importance.

One question that has arisen repeatedly in the literature on the growth of developing countries has been _why_ practices which reduce economic efficiency should also lower the growth rate over time. In the context of a neoclassical framework, after all, economic inefficiencies generated by controls would shrink the production possibility frontier inward and thus affect the level of income; there is no obvious presumed link in theory between the presence of these practices and the growth rate.

Partial answers have been provided. Firstly, controls seem to intensify over time and are thus continuously reducing the productivity of existing and new resources. Secondly, developing countries should be catching up over many years and controls inhibit the process as the approach to the steady-state is greatly slowed down. The new growth theory, with its emphasis on cumulative processes, suggests yet a third reason: if there are externalities in the growth process, anything that slows down the current rate of growth negatively affects the future rate of growth.

A second question is <u>why</u> governments would adopt policies inimical to economic growth. Recent advances in the political economy of development policy have suggested a number of answers[5]. In the early development literature, it was implicitly assumed that governments would behave as benevolent social guardians.[6] Experience has shown, however, that governments may instead behave either as "autonomous bureaucratic states" or as "predatory authoritarian states". In the former, the bureaucracy in effect governs and behaves to maximize its power through increasing public employment and the activities undertaken by the state. In the latter, the dictator, or oligarchic ruling group has sufficient political power to extract resources from the economy either directly (through taxation) or indirectly through providing itself services at the expense of the other sectors. There are also governments in which a number of groups compete for political power, and in which the ruling coalition's behavior is constrained by the necessity of maintaining the coalition. In these circumstances, investments and expenditures in particular sectors or regions, or other uses of governmental resources, may in fact be wise investments in maintaining political power despite their low or negative productivity for the economy as a whole.

Findlay and Wilson (1987) modelled the behavior of a predatory government. In their model, the state allocates resources to infrastructure and other goods

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[5]See Lal and Myint (forthcoming), and Krueger (forthcoming) for two discussions.

[6] It can plausibly be argued that the motivation of many of the nationalist leaders who led their countries to independence was genuinely idealistic, and that those leaders based their policies on the assumption that their government was and would continue to be committed to maximizing social welfare. Even accepting that motivation, however, it would appear that there has been "bureaucratic capture" of governments in many developing countries, as the admnistrative apparatus established to implement government controls over the economy created bureaucratic and other interests which then maximized in their own self-interest.

insofar as it is in its own self-interest to do so. Real national income is a function of private sector inputs and of government expenditures enhancing productivity of the private sector. Findlay and Wilson consider two alternative objective functions the ruler might have. In the first case, the sovereign is constrained by a historically given tax rate and must pay public sector employees the same wage as is received in the private sector. Subject to this, the sovereign maximizes the surplus, defined as the difference between his tax revenue and his expenditure (when the expenditures indirectly yield additional tax revenue, which is the only reason they are made at all). If this model were correct, the sovereign's expenditures on infrastructure and other investments enhancing private sector productivity would be suboptimal. In the second version of their model, however, which appears the more plausible, the sovereign's surplus is then spent on other categories of goods – bureaucratic office holders who expand their domain insofar as revenues permit it, through, for example, palaces, sports stadia, and expanded public employment.

In the Findlay-Wilson model, therefore, government expenditures perform two functions: on one hand, some expenditures enhance the productivity of private sector activity, and on the other hand, some expenditures divert resources from productive uses. Once bureaucratic interests are recognized as a motive in resource allocation, there is no presumption that even investment expenditures will be allocated efficiently. In terms of attempting to estimate the impact of direct government policies, the important challenge is to quantify separately the magnitude of wasteful and of productive expenditures.

Despite the enormous difficulties of segregating various categories of government activities, the presumed importance of the phenomenon in developing countries makes an effort worth while. This paper therefore makes a first effort

to identify variables that can reflect, at least to some degree, differences in the productivity of different categories of government activities. In addition to those activities that are 'directly" reflected in government expenditure accounts, we recognize "indirect" effects on the productivity and growth of private economic activity that arise through controls imposed by the bureaucracy, or the sovereign, over private activity.

2. Quantifying Government Activities and Their Effects

The period we cover is 1976/77 to 1980/81. The choice of time period was determined largely on the basis of data availability. Two other considerations, however, suggest that use of growth rates over that interval makes sense. First, there would be difficulties in using growth rates for the first half of the 1980s because of the differential impact of worldwide conditions on different countries' growth performances. Second, economic policies do change in developing countries.[7]

Our dependent variable is the rate of growth of real GDP over this period, using Summers-Heston (1988) estimates of growth rates. As will be seen, data available for proxying unproductive government expenditures are available on a relatively consistent basis for at least a few - twenty-six - countries over that period. This group of countries includes eleven relatively developed countries[8] and fifteen developing countries.[9]

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[7]In our sample, Sri Lanka appear to be something of an outlier. A possible explanation may be that in 1977, an election resulted in a change of government which proceeded to dismantle economic controls and substantially liberalize the economy.

[8]Australia, Austria, Denmark, France, Germany, Ireland, Italy, Netherlands, Portugal, Spain, and the U.K..

[9]Benin, Central African Republic, Egypt, Guatemala, India, Kenya, Korea, Liberia, Mauritius, Malawi, Philippines, Sri Lanka, Tanzania, Thailand, and Zambia.

We seek to identify the contributions, both positive and negative, of government activities to economic growth. To do so, we need four sets of variables: 1) measures of those government expenditures that enhance private sector output; 2) indicators of those government expenditures that directly reduce private sector output; 3) indicators of the indirect negative effect of government policies on private sector productivity; and 4) measures of the growth of resources available to the private sector. Here, we describe the measures used.

2.1 Positive Direct Effects of Government Expenditures. As a potential indicator of the positive product of direct government economic activity the available measure -- given our negative measure defined below -- was the level of output of state owned enterprises (SOEs). These enterprises cover a range of activities, including provision of power, irrigation, and transport (railroads and ports especially) services that presumably enhance private sector output, although they also include the value added of state marketing boards, and parastatal enterprises engaged in such diverse activities as manufacturing, mining, and tourism. Insofar as marketing boards suppress producer prices of agricultural commodities, those activities would not be reflected in measures of the value of their output. Unfortunately, a split between the output of SOEs by major economic activity is not comprehensively available. When public sector output is produced inefficiently, using a measure of inputs to reflect the negative contribution of government will, we hope, reflect this (see Sect. 2.2). In the regression results reported below, the variable used is public sector enterprise output as a fraction of nonagricultural GNP.[10] Note that since

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[10] There are few available estimates of the values of SOE output on a consistent basis across countries. We use data from Short (1984) and Nair and Filippides (1988). These estimates generally pertain to the 1976-80 period.

government's outputs of nonpriced services are not captured by this proxy, to the extent these contribute to growth, the net direct effect of government is probably biased downward.

2.2. Direct Government Expenditures that are Wasteful. In all models of government behavior, the resources employed by government subtract from those available for private economic activity. For that reason, we use the ratio of public sector employment to total nonagricultural employment as a proxy for the negative direct impact of government expenditures. Clearly, if the output of state owned enterprises is a reasonably valid proxy for the positive effects of government expenditures, then a measure of the resources used by government can serve as an indicator of the negative impact of government: estimating a "net" direct effect can then be done by combining the two impacts.[11]

2.3 Indirect Negative Effects of Government. The governmental economic policies that affect the efficiency of private sector resource allocation may also affect economic growth. Many of these policies have been analyzed and quantified for particular groups of developing countries in the literature.[12]

Two sets of policies whose effects have been shown to be strongly negative are those affecting the trade and payments regime and those which suppress the financial sector. We sought proxies that might reflect the extent to which the credit market and the foreign exchange market were, in the period under review,

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[11]No international organization publishes data separately identifying public employment. The most comprehensive data are available in Heller and Tait (1984) and pertain for most countries to 1979 or 1980.

[12] See Little, Scitovsky and Scott (1970) for the first major cross-country analysis. See also Bhagwati (1978) and Krueger (1978, 1983) for trade policies, McKinnon (forthcoming) for financial policies, and Krueger, Schiff and Valdes (1988) for agricultural pricing policies.

distorted by government policies. In the case of the trade and payments regime, we use the percentage premium of the black market exchange rate[13] relative to the official exchange rate. Although no measure is perfect, there is reason to believe that there is a significant relationship between the height of the black market premium and the restrictiveness of the trade regime. An alternative approach might have been to attempt to estimate deviations of real exchange rates from some base year purchasing-power-parity exchange rate. The difficulty with this procedure would have been to attempt to identify reasonably comparable base years across countries.

For the financial market, governments often ration credit through controls upon interest rates and through instructions, or "guidance", as to how banks should allocate their lending across economic activities. There is clearly more scope for such guidance the lower is the nominal interest rate relative to the one which would clear the market. To reflect this across countries, we constructed a measure of the real interest rate by taking in general the deposit interest rate deflated by the inflation rate in the estimation period.[14]

Clearly, the expectation is that the estimated coefficient on the real interest rate will be positive: the less negative it is, the less likely is credit to be misallocated across economic activities. For the black market premium, the coefficient is expected to be negative: a larger premium presumably reflects a more negative effect on output and growth.

2.4 <u>Growth in Private Sector Resources.</u> Here, we seek to be as traditional as possible, and consistent with measures used by Barro and others. The

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[13] Data from <u>World Currency Yearbook</u> (formerly Pick's) were collated by Wood (1988). We use Wood's data.

[14] Estimates were also made using the GDP deflator, rather than the consumer price index, as an estimator of inflation. There was no difference in results.

importance of human capital has been recognized by both development economists and the new growth theorists. Indeed, in the works of Romer and others, education may be one source of externalities. Romer (1986) and others believe that growth rates should be positively associated with the initial level of human capital stock. For the countries we include in our estimates, we take the enrollment in secondary school as a proportion of the population age 12 to 17 in 1965 as our variable.[15]

In general, the initial level of capital stock is expected to be positively correlated with the level of per capita income and, if there are externalities, with growth. The rate of growth of the capital stock ought to be positively correlated with the growth rate. We constructed two measures to take this into account. A real capital stock index was calculated using perpetual inventory methods, taking the 1960 ratio of GDP to investment as having reflected the capital output ratio at that time, and then adding new investment and depreciating capital for subsequent years, using Summers and Heston data. For the second measure, we took a simple average of real investment to GDP ratios for the 1960-76 period, as used by Barro. Neither variable proved helpful: the signs were negative, sometimes significantly so. It is not clear why this occurred, and the capital stock variable was omitted from the regression estimates reported below.

3. Results

The regression estimates are shown in Table 1. The first equation reports the results when the average real rate of growth is related only to the initial (logged) level of average per capita income in 1976/77, public sector employment, and output of public sector enterprises. As can be seen, only public sector employment is significant: a one percentage point increase in the ratio of

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[15]Data were obtained from World Bank (1990).

government employment to the nonagricultural labor force reduces the estimated rate of growth by eight one hundredths of one percent.

The second equation adds proxies for the effects of the trade and payments regime and credit rationing on the growth rate. These variables are highly significant and add greatly to the explanatory power of the estimating equation. In addition, when controlling for employment effects, an increase in the share of state owned enterprises in nonagricultural output is positively and significantly related to growth. Public employment is significantly negatively related as before. These results are certainly consistent with the hypothesis that direct government activities contain a positive component (output) and a negative component. As expected, a one percentage point higher real interest rate is associated with a 0.24 percent increase in the real rate of growth. The black market premium, also as expected, has a significant negative impact on the growth rate.

Including both direct and indirect effects of governmental activities alone in equation (3) results in an equation capable of accounting for just under 50 percent of the variation in output growth rates, which suggests the importance of both direct and indirect government activities upon the rate of growth. The signs, magnitude, and significance of the direct output effects remain much the same as before and conform again to the Findlay-Wilson hypothesis.

The fourth and fifth equation in Table 1 incorporate the human capital variable into the estimation. Education is in general positively related to growth, although it is not significant at the 90 percent level and is unstable for changes in the number of regressors.

Table 2 provides estimates of the predicted direct and indirect effects of government activities on per capita output growth in the 26 countries, using the

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results of equation (3) from Table 1. In computing predicted growth, the constant term and effects of government activities are included. As is readily apparent, governments appear in many countries to have a large negative impact upon economic growth. The elasticities of public sector employment and state-owned-enterprise output, examined at the means, are negative 1.28 and positive 1.01 percent, indicating a proportionate rise in both has a relatively small net negative effect upon output growth.

The indirect effects are generally larger than the direct effects (averaging around minus one percentage point) and range from plus 0.3 percent to minus 5.7 percent. The elasticities of changes in the real interest rates and the exchange premium are 0.31 and negative 0.37 percent respectively.

Those countries for which actual growth deviated most from the predicted rate include Sri Lanka, Tanzania, Zambia, and the Central African Republic. Sri Lanka, as already mentioned, underwent a strong liberalization program starting in 1977. Tanzania, the CAR and Zambia experienced declines in their growth rates in the early 1980s.

Evaluated at their means, both the direct and the indirect effects of government are more negative in developing compared with developed countries. Indeed, according to these estimates, the difference in actual growth rates between the two groups was more than accounted for by the difference in government policies. Stated another way, the fifteen developing countries for which the relevant data were available experienced on (unweighted) average about 1.4 percent less annual average growth in per capita income than did the developed countries. If these estimates are used as a basis for computation, if developing countries governments' activities had been the same as those of developed countries, the formers' growth rates would have been 0.5 percentage

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points higher than the latter.

4. Conclusions

Equations which use a growth rate as a dependent variable are notoriously difficult because of the inherent difficulties in specifying the underlying model correctly, and even of estimating the "true" growth rate. The results presented here are highly tentative. Perhaps the surprise should be that any variables were strongly significant, and yet the apparent impact of governmental activities on output growth show up strongly across the forms of the equations used here.

In light of data limitations, these results are clearly preliminary. They strongly point to the need for further research into the combined impact of factor accumulation and government activities upon economic growth. A major barrier to that research is the lack of the relevant data on anything like a comparable basis across countries. We hope that our contribution may stimulate not only further analysis using other sources of data, but also in spurring the development of better and more consistent data across countries covering the role of government in the economy.

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Table 1: Estimation Results: Dependent Variable GDPPCDOT

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                             Regression Number
Indep. Var.     (1)        (2)        (3)        (4)        (5)
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Indep. Var.	(1)	(2)	(3)	(4)	(5)
Constant	4.65	8.52**	3.23***	15.23***	3.56***
	(1.11)	(2.32)	(4.46)	(2.90)	(3.01)
LGDPPC76	-0.10	-0.61		-1.70**	
	(0.21)	(1.47)		(2.27)	
PUBEMP	-0.08***	-0.07***	-0.06***	-0.08***	-0.06**
	(2.86)	(3.34)	(2.94)	(3.74)	(2.79)
SOEGDP	0.04	0.15**	0.13**	0.13**	0.13**
	(0.80)	(2.78)	(2.43)	(2.60)	(2.39)
REALINT		0.24**	0.21*	0.19*	0.22*
		(2.21)	(1.92)	(1.74)	(1.89)
BMPREM		-0.04**	-0.04*	-0.04**	-0.04*
		(2.47)	(2.05)	(2.39)	(2.02)
SECEDN				0.05	-0.01
				(1.72)	(0.36)

Summary Statistics:

	(1)	(2)	(3)	(4)	(5)
DoF.	22	20	21	19	20
Adj. RSQ	0.30	0.51	0.48	0.55	0.46
F-Stat.	4.62**	6.20***	6.83***	6.16***	5.26***
SSE	81.70	52.22	57.84	45.21	57.48

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NB: Numbers in brackets are t-statistics
*   significant at 90 percent level
** significant at 95 percent level
*** significant at 99 percent level

Data Definitions:

GDPPCDOT: average percentage per annum growth rate over 1976/77
          to 1980/81
LGDPPC76: log of average per capita income 1976/77
PUBEMP : percentage share of total public to non-agricultural
          employment
SOEGDP : percentage share of total output of SOEs to non-
          agricultural output
REALINT : deposit interest rate deflated by CPI
BMPREM : percentage premium of black market over official
          exchange rate
SECEDN : percentage secondary school enrollments to total

Table 2: Predicted Direct and Indirect Government Effects

	Actual Growth Rate	Government Effects			Diff. Actual to Pred.
		Direct	Indirect	Total	
Developed Countries:					
Australia	1.6	-0.3	-0.2	-0.5	-1.1
Austria	2.5	0.7	0.3	1.0	-1.7
Denmark	1.7	-0.7	-0.0	-0.8	-0.8
France	2.2	-0.4	-0.6	-1.0	-0.1
Germany	2.8	0.2	0.1	0.3	-0.7
Ireland	3.5	-0.3	-0.7	-1.0	1.2
Italy	4.0	-0.1	-0.5	-0.6	1.3
Netherlands	1.3	-0.6	0.2	-0.4	-1.6
Portugal	3.3	1.6	-1.6	0.1	-0.0
Spain	2.2	-0.3	-0.8	-1.1	0.1
United Kingdom	1.5	-0.3	-0.9	-1.2	-0.6
Developing Countries:					
Benin	-0.2	-3.0	-0.4	-3.5	0.0
Cent. Afr. Rep	-1.6	-1.0	-1.1	-2.0	-2.8
Egypt	5.5	2.8	-2.3	0.5	1.8
Guatemala	1.7	-0.8	-0.1	-0.9	-0.6
India	1.2	-2.2	0.1	-2.1	0.1
Kenya	1.6	-0.6	-1.8	-2.4	0.8
Korea, Rep. of	3.6	0.1	0.2	0.2	0.2
Liberia	-2.9	-2.0	-3.1	-5.1	-0.9
Malawi	-0.2	-0.2	-3.1	-3.4	-0.0
Mauritius	-0.4	-1.8	-0.5	-2.3	-1.3
Philippines	2.8	-1.2	-0.8	-2.0	1.5
Sri Lanka	4.5	-0.8	-1.5	-2.3	3.6
Tanzania	-0.1	-0.7	-4.9	-5.6	2.3
Thailand	4.5	-0.6	-0.1	-0.6	1.9
Zambia	-4.5	1.1	-5.7	-4.6	-3.1
Simple Averages:					
Developed	2.4	-0.0	-0.4	-0.5	-0.4
Developing	1.0	-0.7	-1.7	-2.4	0.2
Total	1.6	-0.4	-1.1	-1.6	-0.0

Sources: Calculated from regression (3) in Table 1
Differences calculated taking the actual less the
total predicted value less the constant