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Budgetary priorities in Saudi Arabia: the impact of relative austerity measures on human capital formation

Prof Robert E. Looney

THROUGHOUT THE 1980s, Saudi Arabia experienced a period of relative fiscal austerity. Falling oil revenues forced a number of significant budgetary cutbacks. By early 1989, however, the situation had stabilized to the point where the Saudi Government announced that its 1989 budget would be equal to that of 1987 — 140 million Saudi riyals. To many observers, this signalled a welcome end to the deflationary effects of successive reductions in Government budgetary expenditure over the previous few years. In practice, it allowed Ministries to prepare sufficient projects for implementation, in the event that revenue constraints did not force cutbacks during the year.¹

While most OPEC Countries were forced to introduce similar austerity programmes, little is known about how their Governments set priorities for their shrinking reviews between major expenditure categories. The purpose of this paper is to address this issue. In particular, we are interested in determining the manner in which, in light of revenue developments during the fiscal year, the Saudi Government revised its allocation to the major budgetary categories. Did expenditure on certain categories vary systematically with unanticipated changes in revenue? If so, which sectors gained? Lost? Do these patterns provide insights as to the manner in which the Government established budgetary priorities during this period?

Fiscal patterns

Budgetary revenue and expenditure² increased steadily up to 1974, except for 1967/68 when dislocation following the Arab-Israeli war affected all economies in the region. Nevertheless, the 1973/74 and 1979 oil price adjustments, world recession, fluctuations in world demand for oil, and political instability and warfare in the Gulf have led to sizeable year-to-year fluctuations in budgetary receipts, compared with expectations.

Although the general trend remained buoyant until 1981/82, in 1977/78 and 1978/79 slight budget deficits followed unexpectedly low oil revenues, whereas expenditure and revenue both rose above projected amounts during the next two years. The 1982/83 budget was the first in which an absolute decline in revenue was projected, the objective being to arrive at a balance; while, in 1983/84, a planned deficit of SR35 billion was budgeted for the first time in recent history.

The author is Professor, National Security Affairs, at the Naval Postgraduate School, Monterey, California, United States.

Recent budgetary positions have shown increased volatility. In 1984/85, the planned deficit was increased to SR46 bn, with budget revenue and expenditure figures of SR214 bn and SR260 bn respectively. The 1985/86 budget was supposed to balance at SR200 bn, but ended up with a SR50 bn deficit. The 1986/87 budget was not published in March 1986 as scheduled, because of uncertain revenue forecasts. Monthly disbursements continued on the basis of average spending in 1984/85. A new budget was finally released at the end of December 1986 to cover the 1987 calendar year. The projected revenue at this time was SR117 bn. As a basis of reference, the budget for 1981/82 was for SR340 bn.

Over the same period, the Government had reduced its spending from SR298 bn to SR160 bn, a significant achievement, but not enough to close the deficit gap. In 1988, another large budget deficit was projected, but the Government acknowledged the dwindling size of its budget reserves by launching a local borrowing scheme to cover a substantial portion of the revenue shortfall. Import duties were also raised, in an attempt to generate more non-oil revenue, but other measures, such as tax increases, were rescinded following public protest.

In addition to declining oil revenues, the Government has had to contend with a drop in overseas investment income, which has resulted from a fall in international interest rates and a reduction in the size of the Government's overseas assets (from around \$150 bn in 1982 to less (estimated) than \$60 bn in 1988). This figure is not official, as the Saudi leadership has never released figures concerning the size and composition of its portfolio.³

One of the main problems for the Government is that current expenditure has proved very difficult to pare back; there are huge costs involved in running and maintaining the activities established by development project capital inputs — in social services as well as in physical infrastructure. Defence expenditure remains a major budget item.

In terms of recently released figures, in 1986 (March–December), actual domestic revenue was only SR16.5 bn, Government domestic spending was SR88.2 bn, and Government direct foreign exchange spending was SR37.6 bn; central Government reserves continued to decline in 1987, and by the end of the year were approximately SR78 bn. This figure was down from SR118.5 bn at the end of 1986. This SR40.5 bn drop probably reflects fairly accurately the actual size of the 1987 budget deficit, against a budgeted SR52.7 bn. If the budgeted 1988 deficit of SR36 bn had been fully financed from reserves, rather than borrowing, these Government deposits might have been halved by the end of 1988.

The growing Government preoccupation with cutting its budget deficit is being translated into a number of schemes devised to tap the savings of state organizations (the pension fund has around SR60 bn) and the private sector. Expenditure rationalization and efficiency increases have also been initiated.

Government bond issues are the most obvious example of attempts to tap sources of savings other than the Government's own dwindling reserves, the more

so since various amendments to the offering terms have been introduced. These changes have gradually widened the groups of potential end-investors. Before the bonds were even offered to banks, it is estimated that some SR14 bn may have been placed with the Government pension fund. The bonds were then offered to banks. In turn, a number of these institutions gained permission to include the bonds in a package of national assets offered to private investors in the form of a unit trust.

Finally, towards the end of September 1988, the Saudi Arabian Monetary Agency (SAMA) announced that banks would be able to sell the bonds directly to the Saudi public in minimum tranches of SR1 million; purchasers would get a certificate of purchase rather than the bonds themselves, as the banks would still collect interest from them, and would be forbidden to sell them to non-Saudis. Firm details on the number and success of the bond offerings are sparse, however.

The success of the Government borrowing programme will be judged not just by the levels of commercial bank and private sector subscriptions to each issue, but also by the extent to which these investors are prepared to repatriate their foreign asset holdings to purchase the bonds. As yet, there is no firm evidence to show whether the purchases are being financed from domestic or foreign savings.

Figures published by SAMA⁴ provide several insights into the Country's current financial position. In the ten-month interval between budgets in 1986, direct Government foreign exchange spending stood at SR37.6 bn, domestic spending at SR88.2 bn, domestic revenue at SR16.5 bn, and net domestic cash flows (defined as domestic spending minus domestic revenue) at SR71.7 bn. If the Government could cover its direct foreign exchange spending with foreign currency repatriated via the bond issues, it would mean that Government oil revenue and overseas investment income could all be put at the disposal of SAMA, to meet private sector foreign exchange demand.

On the other hand, if Government borrowings are to be covered by riyal savings, and could therefore be classified in the same vein as domestic revenue, it becomes clear that this method of borrowing will decrease the net domestic cash flow, along with the stimulus that the Government budget has traditionally given to the economy. This might be expected eventually to lead to less demand for foreign exchange throughout the economy, rather than to bring about an increase in foreign exchange availability. Funding the bond issues from domestic resources thus has a much clearer deflationary impact, which might be expected to hurt the independent growth of the private sector.

More recently, the Gulf conflict has placed an additional strain on the Government's finances, despite higher oil production and, for a time, higher oil prices. In December, it was announced that the Government was paying out more for the war than it was receiving in extra oil revenue. As a result, its budgetary situation was deteriorating. The \$13.5 bn cash pledge, made to the United States soon after

the war started, represented the type of drain on reserves that the Kingdom could have afforded over a year, but not all at once. To alleviate the problem, the Kingdom successfully raised its first commercial sovereign loan in February 1991. The overseas loan was for \$3.5 bn, and was clearly the best option for the Government in meeting its twin objectives of securing extra hard currency at short notice and minimizing disruption to the local economy.⁵

With the momentum of war gaining pace at the beginning of 1991, it was no surprise that the Saudi authorities decided to postpone publication of the annual budget, and to use the powers available to them to sanction expenditure on the basis of levels established in 1990. But delaying the budget also meant that the Government was deprived of an opportunity to adjust taxes, subsidies or the Government bond programme. The latter continues to run via fortnightly auctions of SR1.5 bn (\$400m). Budget breakdowns by the Ministry of Finance, however, indicate that interest and repayment charges may now be running at around SR15 bn per year,⁶ reducing the net contribution that this borrowing is making to fund the Government's expenditure programme.

Clearly, if oil revenues do not hold, the Government will experience great difficulty in raising sufficient funds to continue expenditure at recent levels.

Composition of the budget

As noted above, relatively little is known about how OPEC Governments make expenditure decisions over which programmes to cut back during periods of austerity. For non-OPEC countries, anecdotal evidence suggests that officials follow rather *ad hoc* rules for making large contractions in a short period of time — cutting new rather than on-going projects, new rather than present employment, and materials and travel expenses rather than personnel; and favouring Ministries that are politically powerful, or reducing those that have expanded most rapidly in the past.⁷

As to the choice of which sectors to cut back, it is often felt that some sectors are more 'vulnerable' than others. The defence sector, particularly, is usually considered difficult to reduce, while social sectors, such as health, education and rural development, are considered vulnerable. The alleged vulnerability of the social sectors in non-OPEC countries is clearly evident in World Bank documents:

In the difficult past few years, budgetary crises have often meant that social services were cut back, in the process unravelling carefully designed programmes.⁸

Since many human development programmes are publicly funded, they are especially vulnerable when growth is threatened and budgets are under pressure. The recurrent costs of social programmes, especially salary cuts, tended to make them a permanent and, therefore, vulnerable part of Government budgets.⁹

'Quick fix' relief through disproportionate cutbacks — in, for example, education or rural development — may well have negative consequences for the entire economy.¹⁰

Many member countries have had to reduce and reorient investment programmes to curtail recurrent expenditure and to delay the completion of high priority development projects. Programmes in health, education and other social sectors have been particularly vulnerable.¹¹

In the crisis situations confronting African Governments, education, training and health programmes are continuously in danger of becoming the residual legatees both of resources and of attention by policy-makers.¹²

Despite these rather strongly held views, little empirical investigation has been made concerning the budgetary vulnerability of individual sectors. In the most comprehensive study to date, Hicks and Kubisch examined 37 cases of budgetary reductions. These were defined as occurring in countries where real expenditure declined in one or more years. According to Hicks and Kubisch, a sector was defined as:

1. Well protected, if expenditure on it was reduced by less than the percentage reduction in total expenditure.
2. Vulnerable, if its percentage of reduction exceeded the average.

In brief, a simple ratio of percentage changes in each sector's expenditure relative to total spending served as the measure of vulnerability. Where the ratio had a greater value than one, it indicated that the sector was highly vulnerable; a value between zero and one indicated low vulnerability, with less than proportional reductions in the relevant sector. A negative value indicated that, despite overall expenditure reductions, the sector was allowed to expand.

Hicks and Kubisch's main findings (**table 1**) indicated that the countries examined experienced an average decline of 13 per cent in real Government expenditure. Associated with this decline was a contraction of only five per cent in the social sectors (producing a vulnerability index of 0.4). By contrast, the index was 0.6 for the administrative/defence sectors and over one per cent for production and infrastructure. In short, the various social sectors were less vulnerable to cuts than defence and administration, which in turn were considerably less vulnerable than production and infrastructure — contrary to the generally accepted view.

The fact that the social sectors and defence were both relatively well protected suggests that there were high political costs associated with reducing them. On the other hand, countries appeared to have been more willing to cut spending on infrastructure and production. The net result of this had adverse implications for longer-term growth prospects, but fewer early, direct and immediate political costs.

These conditions were not very different for countries belonging to different income groups. The low-income countries appear to have afforded slightly more protection to the social sectors and production and slightly less to administration and defence, but the difference was marginal. The middle-income countries, by contrast, gave more protection to administration and defence and less to the productive and infrastructural sectors.

Table 1
The impact of a reduction in Government expenditure

	Expenditure category				
	Social	Defence/ admin.	Production	Infrastructure	Miscell.
Average % change in real expenditure	-5	-8	-11	-22	-7
Index of vulnerability	0.4	0.6	1.2	1.7	0.8
Low income	0.2	0.9	0.6	1.2	0.5
Middle income	0.5	0.4	1.7	1.9	1.1

Note: capital and recurring expenditure for 32 developing countries for various periods during 1972-80.

Source: Norman Hicks and Anne Kubisch, "Cutting Government Expenditure in LDCs", Finance and Development (September 1984), p. 38.

The apparent bias towards maintaining expenditure in the social services and defence may reflect the Government's preference for present consumption over investment and future consumption, since social sectors and defence typically have a heavy bias towards recurrent expenditure and, within these, there is a sizeable employment component. Since the social sectors and defence/administration are relatively labour-intensive with high recurrent costs, reducing expenditure on them not only cuts back services valued highly by the public, but also causes relatively high unemployment per unit reduction.

The manner in which the Government deals with austerity seems to hold up fairly well for the Saudi Arabian case. In recent years, all the major categories of the budget have been cut (**table 2**). Infrastructure spending, in particular, has been cut drastically, with few new projects commissioned. The budget for education and

health has also been cut, reflecting in part a decline in capital expenditure on new schools and hospitals. The wage bill for teachers, nurses and doctors continues to rise, however. Similar conditions arise with defence expenditure; even though the basic defence infrastructure is past its peak, the need to purchase new equipment and to maintain existing systems is still great.¹⁴

In terms of specific allocations:

1. Government lending institutions have experienced the greatest reduction in their allocations, declining by 51.9 per cent over the 1983–88 period, and with cutbacks accelerating to 67.5 per cent for the more recent 1985/88 period.
2. After expanding at an average annual rate of 20.6 per cent over the period following the second oil price adjustment (1980–82), human

Table 2
Saudi Arabia: central Government budgetary expenditure, 1980–88
billion Saudi riyals

	1980	1983	1985	1988	Average annual rate of growth %		
					1980–83	1983–88	1985–88
Human resource development	18.2	31.9	30.4	23.7	20.6	-5.8	-8.0
Transportation and communications	24.4	32.5	22.2	10.9	10.0	-6.1	-21.1
Economic resource development	14.9	22.0	12.5	5.9	13.9	-23.1	-22.1
Health	9.8	17.0	16.1	10.8	20.2	-8.7	-28.5
Infrastructure	6.9	11.7	9.8	3.6	19.3	-21.0	-28.4
Municipal services	12.7	26.2	17.1	7.0	27.3	-23.3	-25.7
Defence	56.5	92.9	79.9	50.1	18.0	-11.6	-14.4
Public administration	48.0	44.6	43.9	25.1	-2.4	-10.9	-17.0
Govt. lending institutions	24.8	23.4	17.5	0.6	-1.9	-51.9	-67.5
Local subsidies	0.0	11.2	10.5	5.3	-	-13.9	-20.4

Note: based on data from Saudi Arabian Monetary Agency, Annual Report, various issues.

resource development averaged reductions of 5.8 and 8.0 per cent per annum over the 1983–88 and 1985–88 periods respectively. It appears, however, that, of the major budgetary categories, human resource development experienced the smallest cutbacks during the 1983–88 and 1985–88 periods.

3. Despite the common perception of their high priority, defence expenditure contracted at the fairly rapid rate of 11.6 and 14.4 per cent per annum over the 1983–88 and 1985–88 periods.
4. The same also applies to local subsidies, which declined at 13.9 and 20.4 per cent per annum during the 1983–88 and 1985–88 periods respectively.

As a result of these differential rates of contraction, the relative shares of the major expenditure items have undergone a fairly large realignment (**table 3**):

Table 3
Saudi Arabia: composition of central Government budget, 1980–88
percentage of central Government expenditure

	1980	1982	1984	1985	1986	1987	1988
Human resource development	8.5	8.8	10.7	11.7	12.3	14.8	16.6
Transportation and communications	11.3	11.9	9.6	8.5	7.2	6.8	6.7
Economic resource development	6.9	7.6	5.1	4.8	4.5	4.1	4.2
Health	4.6	4.6	5.2	6.2	6.4	7.0	7.7
Infrastructure	3.1	4.7	3.7	3.8	3.5	2.7	2.5
Municipal services	5.9	8.8	7.3	6.6	5.9	5.1	5.0
Defence	26.1	27.7	29.0	30.7	32.0	34.0	35.5
Public administration	22.2	14.4	18.2	16.9	19.8	19.4	17.8
Govt. lending institutions	11.5	8.3	7.7	6.7	4.7	2.2	0.4
Local subsidies	0.0	3.1	3.5	4.1	4.2	3.9	3.8

Note: based on data from Saudi Arabian Monetary Agency, Annual Report, various issues.

1. There has been a major increase in human resource development, from 8.5 per cent of Government expenditure in 1980 to 16.6 per cent in 1988. Again, this increase reflects more the contraction of human resource expenditure at a rate considerably less than that experienced by other major categories.
2. Defence expenditure has maintained its dominant position, increasing from around 26 per cent of the budget in 1980 to more than 35 per cent by 1988.
3. Government lending institutions have experienced a dramatic decline in importance, with their share of Government expenditure falling from more than 11 per cent in 1980 to less than half a per cent in 1988.
4. Infrastructure expenditure in 1988 was about half its 1983 share.
5. A similar percentage decline was experienced by transportation and communications.

Human resource expenditure has enabled Saudi Arabia to achieve significant increases in both enrolment rates and teacher/student ratios. Although the Country lags somewhat behind comparable ones in terms of enrolment rates, it appears to be closing the gap fairly quickly. In addition, the pupil/teacher ratio is one of the lowest ones in the region.¹⁵

On the other hand, the relatively low number of pupils reaching the sixth grade¹⁶ indicates that a number of difficulties exist in terms of perhaps the quality of education received. It is clear that the Country has made great strides in its efforts to increase its stock of human capital. But it is just as apparent that a great deal more needs to be accomplished.

Operational definitions

The evolving budgetary patterns examined above are suggestive of the manner in which the Saudi Government sets priorities for its expenditure. Nevertheless, simple comparisons in the relative growth of budgetary allocations to individual sectors (or their share of the total), while suggestive, are not sufficient in and of themselves to infer the existence of any particular pattern of budgetary priority. These measures fail to capture the dynamics of the budgetary process.

While the Government's fiscal position provides an insight into the public sector's budgetary priorities, a more sensitive (and indicative) indicator is the manner in which the Government uses the deficits (**table 4**) to fund or reduce allocations to certain budgetary categories. Three types of deficit are relevant:

Table 4
Saudi Arabia: budgetary deficits, 1979-88
% of GDP

	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
Expected deficit	0.0	4.4	21.3	10.1	0.0	10.0	14.7	0.0	19.1	12.7
Actual deficit	6.6	-4.9	-21.3	-20.7	-0.3	6.8	14.3	18.6	32.1	24.7
Unanticipated deficit	6.6	-8.8	-42.5	-30.2	-0.3	-3.2	-0.4	18.6	13.0	12.0

Source: Computed from Saudi Arabian Monetary Agency, Annual Report, various issues.

Note: Government expenditure for 1987 is given as 137,422m riyals for the first ten months of the year. This figure was proportioned up to 164,906m riyals for a 12-month period. The same was done for revenue. The deficit is computed as expenditure minus revenue. Therefore a positive figure indicates a deficit has occurred.

- (a) *Actual deficits.* Those that actually occur during the budgetary period. Here, deficits are defined as the difference between Government expenditure and revenue.¹⁷
- (b) *Expected deficits.* Those anticipated at the beginning of the fiscal year, i.e. the difference between anticipated expenditure and forecasted revenue.
- (c) *Unexpected deficits.* Changes in the public sector's budgetary position, defined as the difference between the actual deficit in any year and the one that was expected to occur at the beginning of the fiscal year.

Here we assume that the expected deficit reflects a structural imbalance between revenue and expenditure. Similarly, transitory Government deficits are assumed to be depicted by that component of the public deficit that was unexpected. Clearly, the basic assumption underlying these proxies is that the expected deficit represents an on-going budgetary process that moves slowly over time and cannot be changed very rapidly.

Given the aversion of the Government to run deficits,¹⁸ the relationship between a sector's budgetary share and the Government's fiscal position (revenue minus expenditure) in any year should be indicative of the priority accorded that sector. More specifically, the Government is willing to run deficits only for the purpose of funding high-priority expenditure. The shares of these budgetary categories would therefore be expected to increase during periods of growing budgetary deficits. Similarly, their budgetary shares should decrease during periods of growing budgetary surplus — that is, during times when the Government has ample funds to allocate to lower-priority activities.

Incorporating these elements into a model of budgetary priorities (with expected signs for high-priority categories in parenthesis) yields:

$$(A) \text{ Budgetary share} = [DEFU, DEFA, DEFB, GOVEE]$$

(+) (+) (-) (+)

where:

DEFU = the unexpected budgetary deficit

DEFA = the actual budgetary deficit

DEFB = the expected budgetary deficit

GOVEE = expected Government expenditure.

In terms of indices of budgetary priorities, we hypothesize that the unanticipated deficit should be the most indicative measure of the priority afforded a budgetary category. During the fiscal year, additional (emergency) borrowing would only be likely to be used to assure the adequate funding of the Government's most important programmes. The actual deficit is less volatile, and therefore would be next in importance as an indicator of priority. The expected deficit provides an initial benchmark measure of budgetary priorities.

This form of prioritizing is consistent with (although not proof of) some form of lexicographic¹⁹ ordering of budgetary priority. That is, the Government tries to maintain certain budgetary categories at pre-defined levels. When these levels are met, the authorities are then willing to provide additional funding for categories and programmes of lower priority.

The expected level of Government expenditure was entered as a control variable. That is, as the share of Government expenditure in gross domestic product increases, certain budgetary categories tend to systematically have their budgetary shares increase. This is the so-called Wagner's Law²⁰ effect, whereby countries allocate a higher proportion of their resources to certain public goods (usually defence) with the general expansion of the Government in the economy.

Results

Because of the limited number of observations, the available degrees of freedom did not permit the estimation of the full model described in equation A above. Instead, a series of regressions was estimated, utilizing sets of two of the independent variables. This method had the advantage of testing for the consistency and robustness of results — i.e. were the independent variables statistically significant across a number of alternative specifications?

The main results are presented in **tables A-1 through A-5** and summarized in **table 5**. They provide a number of important insights concerning Saudi Arabian budgetary priorities and, in particular, the importance afforded human capital formation:

1. Human resource development and health and social development were the only budgetary categories to have their budgetary shares increase with expanded unanticipated deficits. They were also the only sectors to have their budgetary shares increase during periods of increased actual (realized) budgetary deficits.

2. Human resource development and health did not have their budgetary shares expanded with increases in expected revenue. This finding is consistent with the notion that, because of their high priority, their funding levels were assured. Given this, marginal increases in revenue could be safely used by the authorities to fund lower-priority projects.

3. The deficit-related expansion in human capital seems to have come in part at the expense of longer-term investment in economic capacity. Specifically, (a) transportation and communications, (b) economic services and (c) infrastructure all had their budgetary shares contract during periods of increased unexpected and actual deficits. This finding is consistent with the findings of Hicks and Kubisch noted above.

In general, the main findings confirm the high priority granted human resource development by the Saudi authorities. Resources to this sector have been preserved relative to other sectors during the current period of austerity. Budgetary

Table 5
Saudi Arabia: fiscal budgetary impact (1979–88)
Summary of main findings by budgetary category
standardized regression coefficients

	Fiscal measure			
	Unexpected deficit	Expected deficit	Actual deficit	Expected revenue
Human resource development	+	ins	+	ins
Health and social development	+	ins	+	ins
Transportation and communications	–	ins	–	+
Economic services	–	ins	–	+
Infrastructure	–	ins	–	+
Municipal services	ins	ins	ins	+
Defence	ins	ins	ins	+
Government lending	ins	–	–	+
Administration	ins	ins	ins	ins
Subsidies	ins	ins	ins	ins

Notes: Based on tables A-1 through A-5.

+ = positive and consistently statistically significant at the 95 per cent level.

– = negative and consistently statistically significant at the 95 per cent level.

ins = insignificant at the 95 per cent level.

cuts have occurred in Saudi Arabia, but education has been relatively spared. The long-term nature of the commitment by the Government to this sector is also evidenced by the fact that it appears relatively safe from budgetary cuts during periods of budgetary deficit. In fact, deficits may owe their size to the authorities' commitment to provide adequate funding for these programmes. The same could be said for health and social expenditure.

Conclusions

While defence has retained its leading share of the budget during the recent period of relative fiscal austerity, Saudi Arabia does not appear to have fallen into the guns versus education syndrome. In fact, the two types of expenditure appear to complement each other in the minds of the Saudi budgetary authorities.

Saudi Arabia appears firmly committed to its responsibility of providing educational opportunities to the majority of its citizens. There is little reason to believe this commitment will be sacrificed for the sake of maintaining foreign reserves. Apparently the Government takes a longer-term view, in which the rate of return on its citizens is higher than the financial return on its foreign savings.

Table A-1
Saudi Arabia: fiscal budgetary impact (1979-88)
Human resource development, health and social development
standardized regression coefficients

	Fiscal measure			Statistics		
	Unexpected deficit	Expected deficit	Actual deficit	Expected revenue	r^2 (adj)	F
Human resource development						
(1)	0.74 (3.81)				0.732	22.9
(2)	0.99 (4.88)	0.36 (1.92)			0.805	17.5
(3)		-0.02 (-0.12)	0.85 (4.88)		0.805	17.5
(4)			1.00 (6.02)	0.27 (1.66)	0.866	26.9
(5)	0.72 (3.40)			-0.08 (-0.40)	0.697	10.2
Health and social development						
(6)	0.67 (2.55)				0.495	8.8
(7)	0.74 (2.15)	0.11 (0.35)			0.501	3.9
(8)		-0.17 (-0.63)	0.63 (2.17)		0.433	3.9
(9)			1.03 (4.28)	0.60 (2.58)	0.707	10.6
(10)	0.72 (2.63)			0.24 (0.90)	0.480	4.7

Notes: Equations are estimated with a Cochrane-Orcutt iterative procedure to correct for serial correlation; r^2 (adj) is the adjusted (for degrees of freedom) coefficient of determination; F is the F-statistic; () is the t-statistic of significance. All variables are defined in terms of their percentage of total (actual) Government expenditure. The unexpected deficit is the difference between the actual deficit and that projected at the beginning of the fiscal year. Expected expenditure is that projected at the beginning of the fiscal year. The deficit is defined as expenditure minus revenue. Positive numbers, therefore, signify that a larger deficit increases budgetary shares.

Table A-2
Saudi Arabia: fiscal budgetary impact (1979-88)
Transportation and communications, economic services
standardized regression coefficients

	Fiscal measure			Statistics	
	Unexpected deficit	Expected deficit	Actual deficit	Expected revenue	r ² (adj) F
Transportation and communications					
(1)	-0.76 (-3.29)				0.512 9.4
(2)	-1.08 (-6.01)	-0.63 (-3.24)			0.793 16.3
(3)		-0.20 (-1.25)	-0.92 (-6.01)		0.795 16.4
(4)			-0.63 (-4.95)	0.41 (3.03)	0.894 34.7
(5)	-0.57 (-5.94)			0.61 (6.14)	0.919 46.2
Economic services					
(6)	-0.80 (-3.64)				0.554 10.9
(7)	-1.09 (-6.36)	-0.60 (-3.24)			0.811 18.1
(8)		-0.17 (-1.12)	-0.92 (-6.36)		0.813 18.2
(9)			-0.69 (-5.09)	0.35 (2.48)	0.887 32.4
(10)	-0.61 (-5.67)			0.56 (5.08)	0.901 37.5

Notes: Equations are estimated with a Cochrane-Orcutt iterative procedure to correct for serial correlation; r² (adj) is the adjusted (for degrees of freedom) coefficient of determination; F is the F-statistic; () is the t-statistic of significance. All variables are defined in terms of their percentage of total (actual) Government expenditure. The unexpected deficit is the difference between the actual deficit and that projected at the beginning of the fiscal year. Expected expenditure is that projected at the beginning of the fiscal year. The deficit is defined as expenditure minus revenue. Positive numbers, therefore, signify that a larger deficit increases budgetary shares.

Table A-3
Saudi Arabia: fiscal budgetary impact (1979-88)
Transportation and communications, economic services
standardized regression coefficients

	Fiscal measure			Statistics	
	Unexpected deficit	Expected deficit	Actual deficit	Expected expenditure	r^2 (adj) F
Infrastructure					
(1)	-0.66 (-2.33)				0.484 8.5
(2)	-1.11 (-3.92)	-0.57 (-2.45)			0.699 10.3
(3)		-0.14 (-0.77)	-0.94 (-3.92)		0.700 16.5
(4)			-0.60 (-3.19)	0.47 (2.75)	0.848 23.3
(5)	-0.53 (-4.20)			0.66 (5.46)	0.896 35.4
Municipal services					
(6)	-0.42 (-1.27)				0.295 4.3
(7)	-0.95 (-3.05)	-0.70 (-2.63)			0.616 7.4
(8)		-0.32 (-1.56)	-0.81 (-3.06)		0.615 7.4
(9)			-0.33 (-1.64)	0.66 (3.56)	0.822 19.5
(10)	-0.29 (-1.80)			0.76 (4.93)	0.833 20.9

Notes: Equations are estimated with a Cochrane-Orcutt iterative procedure to correct for serial correlation; r^2 (adj) is the adjusted (for degrees of freedom) coefficient of determination; F is the F-statistic; () is the t-statistic of significance. All variables are defined in terms of their percentage of total (actual) Government expenditure. The unexpected deficit is the difference between the actual deficit and that projected at the beginning of the fiscal year. Expected expenditure is that projected at the beginning of the fiscal year. The deficit is defined as expenditure minus revenue. Positive numbers, therefore, signify that a larger deficit increases budgetary shares.

Table A-4
Saudi Arabia: fiscal budgetary impact (1979-88)

Defence, Government lending
standardized regression coefficients

	Fiscal measure			Statistics	
	Unexpected deficit	Expected deficit	Actual deficit	Expected revenue	r^2 (adj) F
Defence					
(1)	0.45 (1.35)				0.166 2.6
(2)	0.24	-0.33 (0.59)	(-0.83)		0.171 1.6
(3)		-0.42 (-1.28)	0.20 (0.59)		0.127 1.7
(4)			0.90 (4.23)	1.00 (4.72)	0.761 13.7
(5)	0.64 (2.58)			0.67 (2.75)	0.569 6.3
Government lending					
(6)	-0.59 (-2.18)				0.221 3.3
(7)	-0.92	-0.77 (-4.88)	(-3.34)		0.679 9.5
(8)		-0.41 (-2.03)	-0.78 (-4.88)		0.681 9.6
(9)			-0.40 (-2.76)	0.55 (3.22)	0.789 16.0
(10)	-0.36 (-2.75)			0.67 (4.68)	0.782 15.3

Notes: Equations are estimated with a Cochrane-Orcutt iterative procedure to correct for serial correlation; r^2 (adj) is the adjusted (for degrees of freedom) coefficient of determination; F is the F-statistic; () is the t-statistic of significance. All variables are defined in terms of their percentage of total (actual) Government expenditure. The unexpected deficit is the difference between the actual deficit and that projected at the beginning of the fiscal year. Expected expenditure is that projected at the beginning of the fiscal year. The deficit is defined as expenditure minus revenue. Positive numbers, therefore, signify that a larger deficit increases budgetary shares.

Table A-5
Saudi Arabia: fiscal budgetary impact (1979-88)

Administration, subsidies
standardized regression coefficients

	Fiscal measure			Statistics	
	Unexpected deficit	Expected deficit	Actual deficit	Expected expenditure	r ² (adj) F
Administration					
(1)	0.37 (1.82)				0.530 10.0
(2)	0.26 (1.08)	-0.24 (-0.86)			0.506 5.1
(3)		-0.34 (-1.36)	0.22 (1.08)		0.507 5.2
(4)			0.59 (3.07)	0.55 (2.51)	0.688 9.8
(5)	0.49 (2.54)			0.34 (1.66)	0.624 7.7
Subsidies					
(6)	0.05 (0.22)				0.634 15.4
(7)	-0.06 (-0.15)	-0.09 (-0.32)			0.591 6.8
(8)		-0.06 (-0.04)	-0.05 (-0.02)		0.597 6.8
(9)			0.10 (0.32)	0.33 (1.48)	0.693 10.0
(10)	-0.06 (-0.28)			0.32 (1.57)	0.692 10.0

Notes: Equations are estimated with a Cochrane-Orcutt iterative procedure to correct for serial correlation; r² (adj) is the adjusted (for degrees of freedom) coefficient of determination; F is the F-statistic; () is the t-statistic of significance. All variables are defined in terms of their percentage of total (actual) Government expenditure. The unexpected deficit is the difference between the actual deficit and that projected at the beginning of the fiscal year. Expected expenditure is that projected at the beginning of the fiscal year. The deficit is defined as expenditure minus revenue. Positive numbers, therefore, signify that a larger deficit increases budgetary shares.

Footnotes

1. *Economist Intelligence Unit, Saudi Arabia: Country Report (London: Economist Intelligence Unit), No. 1, 1989, p. 3.*
The following is based largely on: The Economist Intelligence Unit, Country Report: Saudi Arabia (London: Economist Intelligence Unit), various issues, 1988, 1989 and 1990.
3. *The figure is widely viewed, however, as reflecting the approximate size of the Government's foreign assets. For example, Sharif Ghaleb, Middle East analyst for the Institute of International Finance in Washington, estimated in September 1985 that the Kingdom's total foreign assets were worth \$92 bn. But, after adjusting for irretrievable loans to Iraq and developments in the currency and bond markets, the real value of the Saudi asset portfolio was probably no more than \$75 bn at that time. Cf. Michael Richie, "Saudi Arabia", in *The Middle East Review, 1987 (London: World of Information, 1987), pp. 167-83.**
4. *Annual Report 1407 (1987); and Annual Report 1408.*
5. *Saudi Arabia: Country Report, No. 1, 1991 (London: Economist Intelligence Unit, 1991), p. 11.*
6. *Saudi Arabia: Country Report, No. 1, 1991 (London: Economist Intelligence Unit, 1991), p. 12.*
7. *Cf. the discussion in N. Caiden and A. Wildavsky, Planning and Budgeting in Poor Countries (New York: John Wiley, 1974).*
8. *IDA in Retrospect (Washington: World Bank, 1983), p. 52.*
9. *The World Bank, World Development Report, 1981 (New York: Oxford University Press, 1981), pp. 97-98.*
10. *Focus on Poverty, 1983 (Washington: World Bank, 1983), p. 5.*
11. *World Bank Programme on Special Assistance to Member Countries (Washington: World Bank, 1984), p. 1.*
12. *Sub-Saharan Africa: Progress Report on Development Prospects and Programmes (Washington: World Bank, 1983), p. 30.*
13. *Norman Hicks and Ann Kubisch, "Cutting Government Expenditure in LDCs", Finance and Development (September 1984), pp. 37-39.*
14. *Rodney Wilson, Gulf Trade and Finance: Trends and Market Prospects (London: Graham and Trotman, 1987), p. 93.*
15. *Social Indicators of Development, 1988 (Washington: World Bank, 1988), p. 209.*
16. *The World Bank, Social Indicators of Development, 1989 (Baltimore: The Johns Hopkins University Press, 1989), p. 264.*

17. *This definition of the deficit makes it easier to interpret the empirical results presented in tables A-1 through A-5. That is, since an increase in the deficit has a positive sign, we can easily determine which budgetary categories owe their increased budgetary share to the Government's willingness to run a higher deficit. Likewise, we can determine which budgetary categories are vulnerable to cutbacks associated with a growing fiscal deficit.*
18. *Robert E. Looney, Economic Development in Saudi Arabia: Consequences of the Oil Price Decline (Greenwich, Connecticut: JAI Press, 1990), chapter 11.*
19. *J. Encarnacion, "Some Implications of Lexicographic Utility in Development Planning", The Philippine Economic Journal (Second Semester, 1970), pp. 231-240.*
20. *For a description of this effect, together with empirical evidence, see Robert E. Looney, Third World Military Expenditure and Arms Production (London: Macmillan, 1988), chapter 5.*