

# Pakistani defense expenditures and the macroeconomy: alternative strategies to the year 2000

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## Introduction

Toward the end of 1988, Pakistan's deteriorating resource situation caused a financial crisis, many remnants of which still exist today. In 1988, the Government's budget deficit reached 8.5% of Gross Domestic Product (GDP), inflation accelerated, the current account deficit doubled to 4.3% of Gross National Product (GNP), the external debt service ratio reached 28% of export earnings, and foreign exchange reserves fell by half to \$438 million, equal to less than three weeks of imports.<sup>1</sup>

These developments have eroded the ability of the government to affect the country's development process. In fact, the encouragement of private sector activity, particularly investment, is the only viable option open to the authorities. It follows that for policy purposes the most important issue involves restructuring government expenditures and their financing in a manner that would provide the maximum inducement to private sector capital formation, especially in manufacturing. Operationally, this means finding an optimal balance between the Government's three most important budgetary items: defense, public consumption and infrastructural development. What is more important, because there is abundant evidence<sup>2</sup> that the government's deficits have crowded out a certain amount of private investment, the authorities must achieve this balance within the context of a reduced level of expenditures and/or tax increases.

Defense expenditures are an obvious candidate for expenditure reductions. As noted in the next section, the country's defense burden is one of the heaviest in the world. At round 7% (1992) of GNP, it is more than twice that of India. Moreover, while during most of the 1980s worldwide defense expenditures contracted, Pakistan's expanded. This trend occurred even after the hostilities in Afghanistan had subsided.

While the defense expenditure to GNP ratio has remained about the same,

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debt servicing has overtaken this category as the single largest item of government spending. In 1971 this item was 3% of GNP; by 1993–94 it had risen to 8.2%. During the fiscal year 1994–1995, debt servicing will account for 8.2% or 35% of total budget spending,<sup>3</sup> compared with 26.4% for defense.<sup>4</sup> Apparently the government recognizes the burden that defense expenditures have placed on the economy. For the 1994–1995 budget, defense expenditure will increase only 8.6% whereas in the previous year India increased defense expenditures by 20%.<sup>5</sup>

Against this background, the purpose of this paper is to examine Pakistan's macroeconomic economic prospects for the remainder of the 1990s. In particular (and assuming it politically possible), we are interested in examining the scope for stimulating economic growth and expansion through restrained allocations to the military.<sup>6</sup> What impacts have defense expenditures had on the economy? Are these impacts largely direct or have they operated primarily through their effect on the budgetary deficits? In this regard, defense expenditures are a logical area for budgetary cuts: current expenditures account for the major part of government budgetary allocations, averaging 65–75% during most of the eighties and into the 1990s. Since the late 1980s, defense expenditures together with debt servicing have accounted for around 80% of current expenditures.

### **Previous studies on defense spending and the macroeconomy**

Intuitively, one might imagine that increased defense expenditures over time would be detrimental to an economy. The classical argument is that soldiers and armaments do not create goods and services that can be consumed by others: thus, military spending necessarily subtracts from a nation's total resources. Following this line of argument reductions in arms expenditures should provide a sizable peace dividend that could be used for development purposes.<sup>7</sup>

The issue is not so clear-cut, however. There is another side to the debate, offered by those who emphasize the economic benefits of defense expenditures. Advocates of "military Keynesianism"<sup>8</sup> stress the advantages of using domestic defense expenditures as a mechanism for stimulating the economy, and thus increasing the overall rate of economic growth. Unfortunately there is ample empirical evidence to support each assertion.<sup>9</sup>

A balanced position on the defense versus growth controversy is that while economic benefits should result from reductions in military spending, there is nonetheless uncertainty as to the likely size and distribution of these benefits over time. Reductions in government spending on the military will have significant macroeconomic effects, particularly upon interest rates, exchange rates and trade patterns, all of which will influence the size and distribution of gains from cuts in military expenditures. Furthermore, there is considerable concern, often expressed in the popular press regarding short-term increases in unemployment and a lowering of economic growth that might result from the deflationary effects of decreasing military expenditures.

With this context in mind, several studies have examined the manner in which Pakistani defense expenditures have interacted with various macroeconomic aggregates. These studies can be roughly broken into four types:

- (1) *Causation Analysis* where an attempt is made to assess whether defense expenditures initiate economic change or, in contrast, are affected by changes in the macroeconomy, e.g. to increases in defense expenditure cause a follow on change in the economy, or instead, do economic changes result in movements in defense funding?
- (2) *Linkage Identification* where the strengths of the identified causal patterns are estimated, that is, how much does a rupee of defense expenditures alter GDP over time?
- (3) *Budgetary Priority Analysis* where expenditure priorities and budgetary tradeoffs are identified and
- (4) *Modelling* where, drawing on 1, 2 and 3, defense expenditures are examined in the context of alternative fiscal packages, for example, how does varying the existing size of the budgetary deficit affect the manner in which defense expenditures affect the macroeconomy? The present study falls in this category.

#### *Causation and linkages*

The main finding<sup>10</sup> from analysis of the causal links between defense and the economy is that the impact of defense expenditures on GDP has shifted over time. In an earlier period (1958–1973), defense expenditures had a negative impact on economic growth, while in the latter period (1973–), this impact has shifted to a positive one. Specifically:

1. The earlier negative impact appears to have been directly associated with the speed of increase in defense expenditures. During periods of rapid mobilization (the arms race with India), defense expenditures had a negative impact on the economy. That is, increased defense expenditures during this period dampened the growth in GDP.
2. After 1973 (and at a time when Pakistani defense expenditures were not modified by developments in India), increased growth in the economy provided additional resources for defense. In turn, defense expenditures stimulated further growth.
3. In contrast there were no strong linkages from non-defense expenditures to economic growth.

Another pattern of significance<sup>11</sup> involves the relationship between defense and non-defense expenditures. There has been a tendency over time for defense expenditures to lead in the timing of government allocations. That is, when defense expenditures change, a corresponding adjustment (again with a lag of several years) occurs in allocations to non-defense activities.

As noted above, a recurring theme in the Pakistani literature is that of government deficits and or expenditures "crowding out" private investment. This phenomenon has been confirmed by several recent studies<sup>12</sup> which found evidence that government activities have pre-empted funds that would otherwise have flowed into private capital formation. These patterns have also been the subject of causality analysis.<sup>13</sup> Here, attention has focused on the direction of impact between the different broad types of public expenditures (defense, consumption, and general government investment) and potential sources of funding (deficits, domestic borrowing, and foreign borrowing). Do expenditures create subsequent deficits and borrowing requirements or, instead, does lax fiscal policy and easy credit encourage expanded expenditures? The main patterns found suggest that:

1. Of the three types of government expenditures, those allocated to defense appear to have the most complex budgetary linkages. In one sense the military faces a hard budgetary constraint in the sense that increases in past deficits tend to suppress the expansion in allocations to the military. On the other hand, increased defense expenditures do force an expansion in future deficits.
2. This general framework carried over to the borrowing patterns associated with military expenditures. For most measures of domestic borrowing, higher growth rates in funding from the domestic markets tend to suppress the expansion in future military expenditures. These suppressing effects are most important in cases where the rate of borrowing (domestic or foreign) expands over its anticipated (or longer term) growth rate. Still, feedback effects are present whereby military expenditures are, in turn, generally funded in part through both domestic and foreign borrowing.
3. Since a large portion of public consumption consists of allocations to the military, the budgetary patterns of this expenditure category are in some ways similar to that characterizing defense, particularly consumption's relationship to the fiscal deficit.
4. Several important differences do occur however. The major difference between defense expenditures and public consumption is associated with the manner in which each is funded. Increased growth in public consumption definitely contributes to expanded domestic borrowing requirements over time. Also, the expansion in public consumption was more constrained than defense during periods of expanded foreign borrowing.
5. Of the three types of government expenditures examined, general government investment has the strongest impact on the public sector deficit.
6. For all four measures of the deficit,<sup>14</sup> increases in general public investment tend to result in expanded fiscal imbalance. While expanded deficits (actual and deviations from the exponential trend) facilitate a future expansion in public investment, this effect is weak compared with the impact of investment on the deficit.

7. A clear link also exists between expanded public sector investment and increased future domestic borrowing requirements. Interestingly enough few links exist between the growth in public investment and the country's pattern of external public borrowing.

While these findings do not provide a definitive proof of the existence of the crowding out mechanism in Pakistan, they are quite consistent with what one might find if the phenomena were present. Public investment and infrastructural development appear to have the least stimulating (and sometimes negative) affect on private sector investment. This is ironic given that a major purpose of these allocations is to provide a stimulus to follow on private investment. Clearly, this effect stems from the large demands placed on the domestic capital market by this type of expenditure.

At the other extreme is defense. Again a somewhat ironic pattern exists by which expanded military expenditures provide a generally strong stimulus to private investment in large scale private manufacturing. While the analysis does not let us identify the cause of this stimulus (general Keynesian demand expansion and/or direct linkages to the country's military procurement program), the fact remains that the government has shown restraint in funding defense expenditures once domestic borrowing begins to accelerate.

General public consumption falls somewhere between defense and investment in affecting the private sector's willingness (or ability) to commit capital to manufacturing. While the government does fund increased consumption through expanded domestic borrowing, the magnitudes involved are not nearly as great as with investment. Thus, government consumption is still able to provide a net positive stimulus to small scale private investors (who presumably are not as reliant on the domestic capital markets as are their larger scale counterparts).

### *Budgetary patterns*

While the development of a sophisticated model for analyzing budgetary priorities is beyond the scope of this paper, several striking patterns characterize Pakistani budgetary allocations:<sup>15</sup>

1. A clear pattern exists whereby long run defense expenditures impact negatively on development. Since development does not reduce defense over time, defense has a higher priority than development.
2. Defense has a positive short run affect on interest payments with increased shares of the budget allocated to interest neutral (in both the short and long run) with regard to the share of the budget allocated to defense. Again, this is a clear cut case of defense having the higher priority.
3. Priorities between development expenditures and interest payments are much more difficult to deduce: development expenditures reduce (in both the short and long run) the budgetary share going to interest payments. In turn, increased interest payments reduce (again in both the short and long run) the shares of the budget going to the capital account.

4. Complicating identification of the development/interest priorities is the fact that in both cases the expected and unexpected deficit terms are negative. Both variables are reduced with increases in the deficits. Furthermore these patterns occur in both the short and longer run. However, since the deficit terms are stronger in the case of development (with a higher level of statistical significance), it appears that interest payments have a slightly higher priority than that afforded development.

Although the budgetary shares of the other main items of the budget were not directly tested against each other, it is probably safe to conclude that subsidies are next in priority. While their allocations suffer with increases in defense expenditures, they are immune from cuts due to expanded interest payments or development allocations. In addition, the government appears willing to run higher deficits to fund these programs. Administration has the next highest priority. This category appears is immune to cuts stemming from increases in defense, interest or development. In addition these allocations do not seem to face cuts during periods of increased deficits.

In conclusion, one may quibble over the importance of administration, social security/welfare and other expenditures. However, the general picture of Pakistan's budgetary priorities is fairly clear. Defense expenditures have by far the highest priority. While the government may cut these programs when deficits expand more than anticipated, the government is inclined to cut other programs<sup>16</sup> rather than reduce the budgetary share going to the military.

### *Modeling*

In an earlier study<sup>17</sup> focused on determining the rough magnitudes of the impact of defense (and non defense) expenditures on the major economic aggregates it was found that there was a generally positive link between defense and the economy. On the other hand, non-defense expenditures had a negative impact on economic growth. Given this it was found the actual impacts of defense and non-defense expenditures can change fairly dramatically as the economic context (i.e. the fiscal deficit) in which the expenditures occur varies.

### **Defense and the macroeconomy**

Drawing on a 33 equation (Appendix A) policy model,<sup>18</sup> our main concern was identifying the main linkages between defense expenditures and economic activity. These links are assumed to be both direct (as with Keynesian demand creation) and indirect (through possible deficit induced crowding out of private activity and/or diversion of private savings to the public sector. Concerning the more important individual equations:

1. Gross Domestic Product is affected mainly by expansion in the private, and public stocks of capital, employment and military expenditures. Here it should be noted that the links between GDP and non-defense expenditures were not statistically significant.

2. Employment increases with an expanded population together with increments to the stock of public infrastructure.
3. Defense expenditures expand in line with the general size of the economy. However allocations to the military compete with infrastructure for funding. In addition, expanded levels of foreign borrowing in the previous year constrain allocations to the military. The same is also true for increased levels of indebtedness to the international institutions.
4. Non-defense public expenditures also expanded in line with GDP. However, allocations to this category were reduced by short run increases in the defense budget.
5. Gross national saving<sup>19</sup> expands with the general growth of the economy. However, these funds are preempted (or crowded out) by the current fiscal deficit, as well as the deficit in the previous year.
6. Private investment in large-scale manufacturing followed a lag adjustment pattern whereby investment in any one year was undertaken to bridge the gap between investor's optimal and actual capital stocks. The optimal level of private investment was in turn influenced by defense expenditures and ability to attract foreign funding. Again however, this category of private investment was crowded out by the fiscal deficit.
7. Private investment in non-manufacturing activities expanded with the total size of the economy and availability of savings. In contrast to investment in manufacturing however, this type of investment was discouraged by expanded defense expenditures.
8. Government credit from the monetary system was also related to past deficits and short run movements in defense expenditures.
9. Inflation is largely a function of expanded credit to the public sector, together with movements in the international price level.
10. Public borrowing in the domestic markets was largely a function of the fiscal deficit. However, the authorities' ability to borrow internationally reduced some of the pressures on the domestic capital markets.
11. Public borrowing in the foreign capital markets was also largely a function of the fiscal deficit. Again however, increases in defense expenditures *ceteris paribus* reduced the amount of funding from this source.

In summary the model captures the fundamental dilemma facing Pakistani policy-makers. Looked at in isolation, defense expenditures have tended to positively influence the economy. However if these expenditures are funded with increased levels of deficit financing, the subsequent crowding out of private investment may actually result not only in increased inflation, but, more importantly, in a net negative impact on the economy. The inability of non-defense expenditures other than infrastructure to impact positively on the economy has only compounded this dilemma. In any case the concern of external creditors over the country's high defense burden will in all likelihood increasingly constrain allocations to the military.

## Fiscal options

Realistically Pakistan's fiscal options are likely to be narrowly constrained by the International Monetary Fund. In November of 1993, the government negotiated an agreement with the IMF to borrow a total of Special Drawing Rights (SDR) 1200 million (\$1670 million) in a combination of concessionary and market rate loans if it implements reforms and reaches certain economic targets.<sup>20</sup>

### *Policy constraints and objectives*

The loans will be a combination of an enhanced structural adjustment facility that carries an interest rate of 0.5%, an extended fund facility at market rates and a public-sector adjustment loan (the \$350 million standby credit approved by the IMF in September 1993 is not included in the new agreement). As part of the agreement, the government pledges to take measures to meet the following economic targets:<sup>21</sup>

1. Reach an average GDP growth rate of 6.5% over the next 3 years. GDP was expected to grow by 7.5% in 1994 depending on the size of the crucial cotton crop, compared with a record low of 3% GDP growth in 1993.
2. Bring inflation down to 5%. The government has forecast an inflation rate of 8% for 1994 compared with more than 10% in 1993.
3. Boost foreign exchange reserves. Reserves fell steadily in 1993 to reach \$222 million late that year (compared with \$1000 million in January of 1993).
4. Reduce the burden of foreign and local debt. In late 1993, the state owed \$23 000 million to foreign lenders, of which \$4500 million was short term debt.
5. Continue the tariff, tax and financial reforms, privatization and deregulation policies launched in the late 1980s.

By late 1994, the government had complied with IMF pressure by increasing energy prices and introducing a controversial agricultural tax as a means of reducing the fiscal deficit.<sup>22</sup> Petroleum and utility prices have been adjusted substantially, together with the introduction of a mechanism to make domestic petroleum prices more responsive to changes in international prices. In addition, the authorities' fiscal program for 1993–1994 envisages a reduction in defense expenditures by about 1% of GDP, along with a containment of nonessential expenditures.<sup>23</sup>

The authorities have tightened monetary policy through upward adjustments in the rates of return and reductions in the scope of concessional and mandatory credit schemes. The framework for concluding effective monetary policy has been strengthened through the provision of increased autonomy to the central bank.

Finally the Pakistan rupee was devalued by 10% at the outset of the 1993–1994 fiscal year. This has been followed by a series of small exchange rate

adjustments implying a total devaluation of 12% *vis-à-vis* the US dollar and a real effective depreciation.

Against these positive initiatives, the government began in late-1994 to experience a number of setbacks:<sup>24</sup>

1. During December 1994, inflation rose to 14.3% from 11% a year earlier. This figure is considerably higher than the agreed 5% target to be reached by 1997.
2. For the July–December 1994 period, net tax receipts are estimated to have fallen 37% short of target. The shortfall in the collection of indirect taxes during the period was around 36% while income tax collection is off its mark by 39%.
3. Government spending which was supposed to be curtailed under the IMF Guidelines, was around 18% higher than over the previous July–December period. The situation is so critical that the government has stopped all ministries from issuing checks of more than RS.100,000 and canceled all development funds for December.
4. Finally, the agricultural sector has experienced a series of setbacks. A series of natural disasters and poorly thought-out policies has led to a drastic slowdown in production. After growing by 9.5% in 1991–1992, farm output dropped 5.3% in the falling year. For 1994 it expanded by just 2.6%. During the current 12 months (1995), the cotton harvest may be up to 7.5 million bales or up to 20% short of target. Estimates are that for every 1 million cotton bales lost there is a reduction of GDP growth by one percentage point. If this relationship is accurate, the projected GDP growth of 6.9% for 1994–1995 could be as low as 3.5%.

If we can assume that the government's current fiscal problems reflect primarily the transitional difficulties of shifting from tariffs to a general sales tax and that the agricultural crisis is largely a result of natural disasters, then the country should be able to realistically pursue its major objectives throughout the remainder of the 1990s. These include:

1. A stable rate of GDP growth of between 6.0% and 7.0% per annum—this is in line with the average rate of growth since 1976.
2. Employment growth of 2.8%–3.1%—around the rate of growth of population and consistent with past rates of job creation.
3. Inflation 5% or lower—somewhat below the historical range of 7–8%.
4. Foreign borrowing to expand at a rate slower than the general expansion in economic activity, i.e. around 5% or less.
5. Defense expenditure to decline to around 4–5% of GDP—down from the 6–7% range in the late 1980s and early 1990s.
6. Government deficits to fall to 3–4% of GDP—down from the 6% figure reached in the early 1990s.
7. A general expansion in the share of savings in GDP up toward the range of 18–20%—typical values for countries at Pakistan's stage of development.
8. An expanded share of private investment in GDP.

*Alternative policy mixes*

The critical question is whether and to what extent these objectives are consistent and attainable. Of particular importance for the current study, are the defense expenditure levels that would aid in the attainment of these goals. Again, using the model developed in Appendix B, several policy packages were examined in terms of their ability to improve the country's economic fortunes.

*Simulation 1—No major policy initiatives.* As a benchmark, the policy simulation model described in Appendix A was solved with the world rate of inflation set at 3% per annum, population growth at 3% per annum and exports at constant prices assumed to grow at an annual rate of 7.5% per annum. Here we are assuming no major shifts in past public expenditure or revenue decisions. Under these assumptions:

1. The economy (GDP) would continue to expand in the 6.5–7.5% range, with defense expenditures gradually slowing to less than 5% per annum by the end of the century.
2. Despite this slowing down in defense expenditures the military burden (defense as a share of GDP) would remain well above 6% throughout this period.
3. There would be a gradual increase in non-defense expenditures as a share of GDP—increasing from around 16% in 1992 to 18.4% by 2000. This pattern reflects the rapid expansion in government consumption during the 1980s.
4. Employment targets would be met with rates of growth averaging around 3%.
5. The savings rate would increase, but only very gradually, reaching around 16% by the end of the century. This is well below the 18–20% assumed to be a precondition for self sustained growth.

In summary:

- (a) The fiscal deficit would expand throughout this period with its share in GDP also reaching unacceptable rates.
- (b) Most unsatisfactory of the major indicators is the rate of inflation. With expenditure, savings and deficits in the ranges noted, inflation would increase during this period, reaching slightly over 20% by the end of the century.
- (c) Reflecting these patterns, the external gap would reach nearly 8% of GDP, a figure probably unattainable given the likely reluctance of foreign creditors to finance deficits of this magnitude.

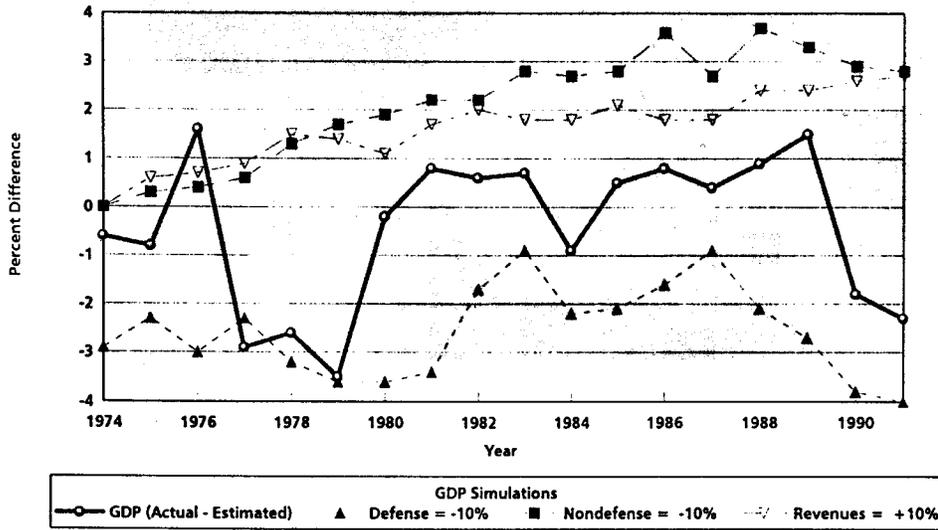


Figure 1. Pakistan: alternative defense—GDP scenarios.

*Simulation II—Alternative defense expenditure strategies.* For most developing countries, a logical alternative at this point would be to determine the extent to which economic performance might be improved through cutting defense expenditures. As noted above, however, the consequences of this approach are not clear. On the one hand, defense expenditures appear to provide a positive stimulus to the economy, while on the other the deficits associated with increased allocations to the military may be financed in a way that pre-empts funds that might flow into private investment. To assess the net magnitude of these effects, several alternative defense budgets were examined. In these simulations defense expenditures were assumed to expand at a constant rate (2.5, 5.0 and 7.5%) over the period to the year 2000. As a frame of reference, defense expenditures averaged 7.2% over the 1981–1991 and 1986–1991 periods. Under these assumptions (Fig. 1):

1. The growth in GDP begins to decline after 1994, with the rate of decline largely a function of the expansion in defense.
2. With defense expenditures endogenous (determined by the model's equations—Simulation I) the deceleration in GDP growth is fairly gradual, leveling off at around 6.5% per annum by the end of the century.
3. With defense expanded at a rate of 7.5% per annum it (providing there were no fiscal or inflationary constraints) it would be possible to stabilize the growth of GDP at slightly over 7% per annum.
4. Increases in defense expenditures at a constant 5.5% or 2.5% would (in the absence of any other policy changes) causes the economy to decelerate fairly rapidly, reaching a growth of about 5.8 and 4.6% respectively by the end of the century.

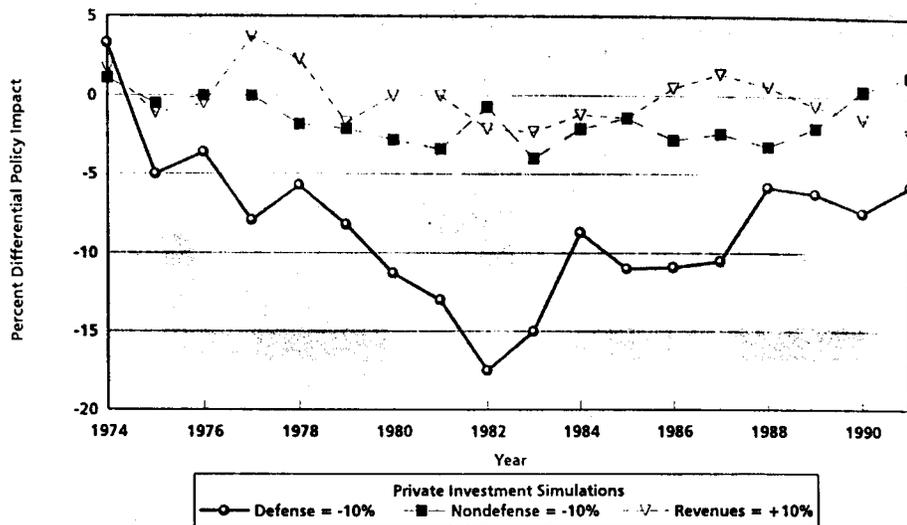


Figure 2. Pakistan: alternative defense—private investment scenarios.

5. The impact of defense expenditures on private investment reflected the anticipated pattern (Figure 2). The share of national resources devoted to private investment, increases with lower rates of expansion in military expenditures.

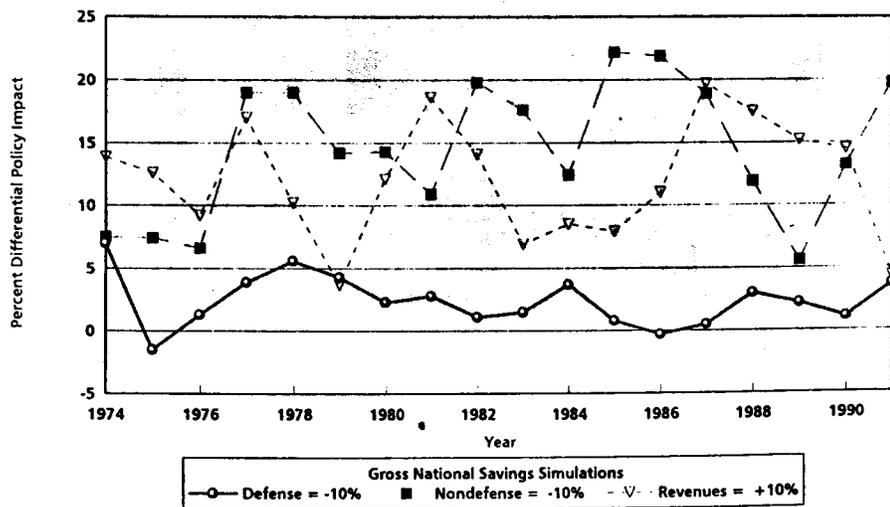


Figure 3. Pakistan: alternative defense—fiscal deficit scenarios.

## PAKISTANI DEFENCE EXPENDITURES

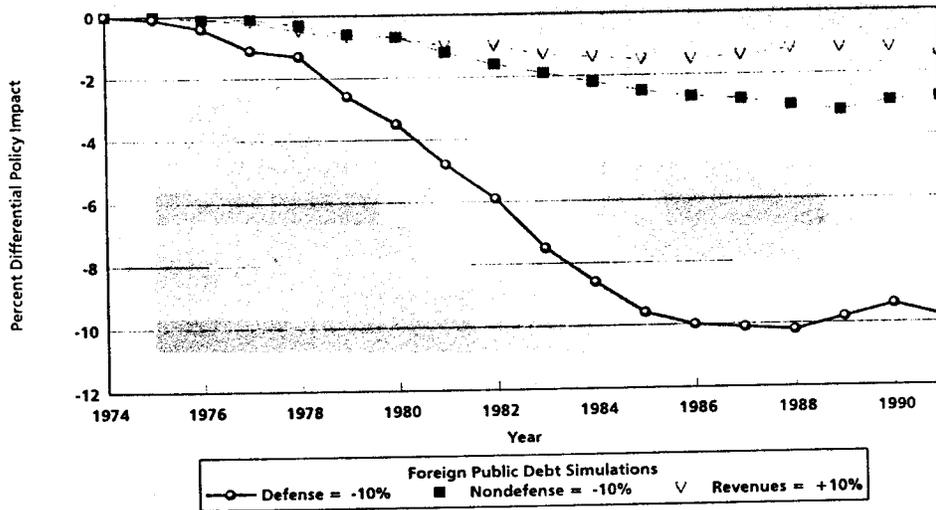


Figure 4. Pakistan: alternative defense—inflation scenarios.

6. Concerning the fiscal imbalance (Figure 3), only the deficit associated with a 2.5% expansion in defense expenditures is likely to fall within an acceptable range (around 4.8% of GDP). Without simultaneous reforms in tax structure or collection, significant reductions in the deficit as a share of GDP are unlikely under any of the proposed scenarios.
7. Finally, simply just constraining defense expenditures even at low rates of growth (with no other complementary stabilization measures) would most likely not stave off increases in inflation. As noted above, inflationary pressures have been building for some time. Even at an average annual growth of only 2.5% defense expenditures (Figure 4) it would be difficult for the country to reduce inflation below 10% per annum during the remainder of this century.

### Fiscal options with constrained defense expenditures

These simulations suggest that although the general rate of growth of GDP may increase with defense expenditures, the adverse effects associated with this expansion, negate any resort to a defense-led growth model. The real question for policy makers must center on ways of improving economic performance while constraining defense expenditures to lower than historic rates of expansion.

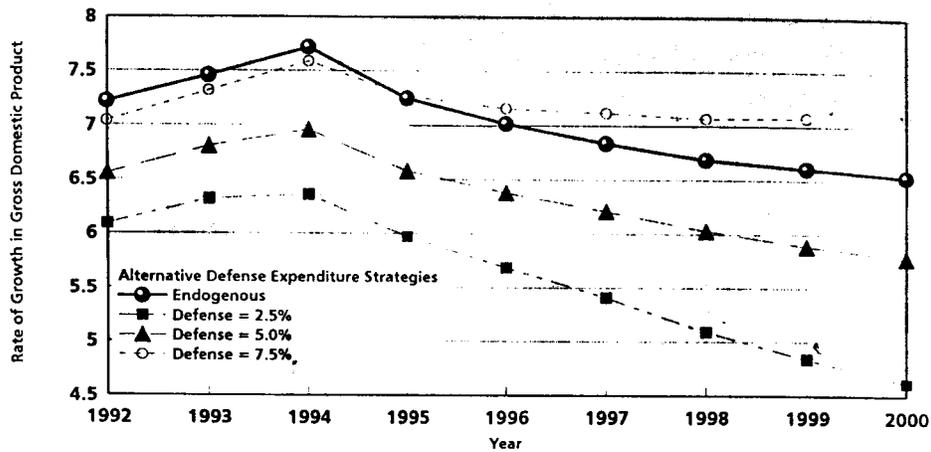


Figure 5. Pakistan: GDP growth under alternative fiscal programs.

Several policy packages are examined under the assumption that the government will gradually be forced to move to more austere programs if more moderate fiscal restraints fail to achieve the country's major macroeconomic objectives. Specifically Fiscal Program I outlined below would be one of the most mild attempts at reform. Macroeconomic objectives not achieved by that program suggest the modifications introduced into Fiscal Program II and so on. Analysis is confined to the use of policy tools directly under the control of the authorities—external borrowing, expenditures and taxes.

#### *Program I*

First while holding defense expenditures at a 2.5% rate of growth, the authorities might also constrain foreign borrowing. Given the country's current debt situation and the high proportion of the budget allocated to debt servicing, reduced rates of external borrowing are probably a good objective in and of themselves. Credit from this source is set to grow at 5.0% per annum. This rate is considerably below the average of 22% over the 1986–1991 period, but in line with the average of 4.6% for the 1981–1991 period as a whole.

#### *Program II*

To strengthen the country's acute infrastructural bottlenecks, this policy package would shift more resources toward public investment in transport, energy, communications and the like. Expanded expenditures in these areas would also help to offset the deflationary effects associated with the planned

reductions in defense expenditures. As a starting point infrastructure investment was set at an expansion of 7.5% per annum, up somewhat from the 6.1% average over the 1981–1991 period and 5.1% expansion during the 1986–1991 period.

### *Program III*

This set of policies would add increased revenue collection to Program II. Here, implementation of the agriculture tax, and better tax collection should be enough to sustain an increase in revenues of around 7.5% per annum. This rate is up some from the 6.8% growth during 1981–1991 and 5.5% for the 1986–1991 period.

### *Program IV*

Finally the last package of reforms would modify package III by constraining non-defense (and non-infrastructure) expenditures to a maximum rate of expansion of 7.5% per annum. As noted above, one of the main causes of the country's current fiscal crisis has been an acceleration in non-defense expenditures. These averaged 8.4% during 1981–1991, accelerating to 9.4% from 1986 to 1991.

Of the expenditure and revenue programs noted above, those associated with increased taxation are likely to be the most difficult to attain. In part, this will be due to the likely slowdown in economic growth, but also to a fall in import tariff revenue, widespread tax evasion (only one million of Pakistan's 120 million population pay an income tax)<sup>25</sup> and the difficulties of taxing the country's large black market economy.<sup>26</sup> In addition in early 1995, businesses in Karachi began threatening a tax strike<sup>27</sup> unless the government restores law and order to that city. Given the current problems faced by cotton and sugar producers, there is also sufficient reason to believe that it may be some time before the recently enacted agricultural tax will yield significant increases in revenues. To put these problems in perspective, rough probabilities of the likely ability and political will of the government to implement the various tax and expenditure programs are outlined in Figure 10.

### *Main Findings*

Of particular interest is the manner in which these packages might improve economic performance over that likely to occur simply through constraining the growth in defense expenditures at 2.5% per annum.

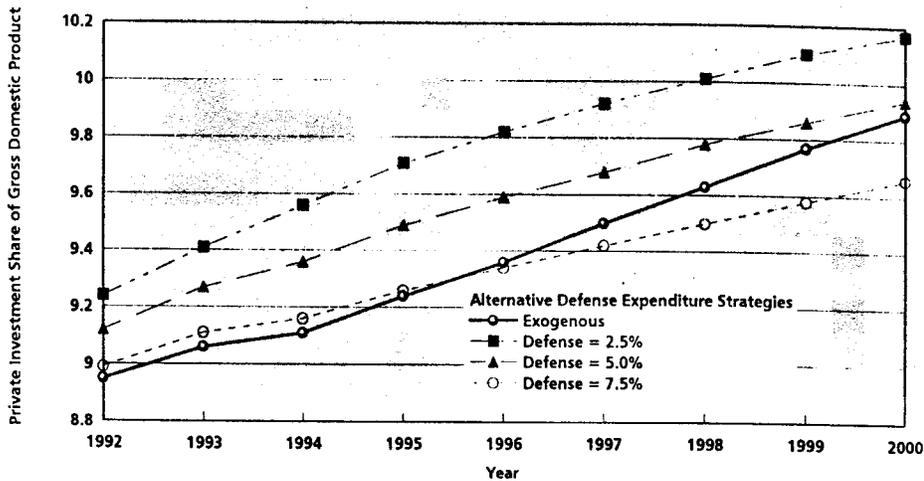


Figure 6. Pakistan: inflation under alternative fiscal programs.

*Growth.* GDP growth gradually improves as the fiscal programs are made more comprehensive (Figure 5). That is, simply restraining foreign borrowing does not significantly improve the general rate of expansion of the economy. Nor is there little difference between the growth path obtained through carrying out Program I and that of simply expanding defense expenditures with foreign borrowing being determined through the model's relationships. There are other patterns of interest:

1. While Program IV yields the highest rate of growth throughout the 1990s, it converges with Program III by the end of the century.
2. Program II.

*Inflation.* Inflationary pressures proved relatively hard to dampen (Figure 6). Constraining defense expenditures to a 2.5% growth path, together with restricting foreign borrowing (Program I) and increasing infrastructure investment (Program II) while keeping the rate of inflation considerably below that of the purely endogenous forecast, were unable to put the economy on a declining inflation path. This leads to important policy implications:

1. A clear ingredient of any anti-inflationary program must be tax reform. Even expanding government revenues at 7.5% per annum (Program III) were not sufficient to reduce inflation below 6% per annum.

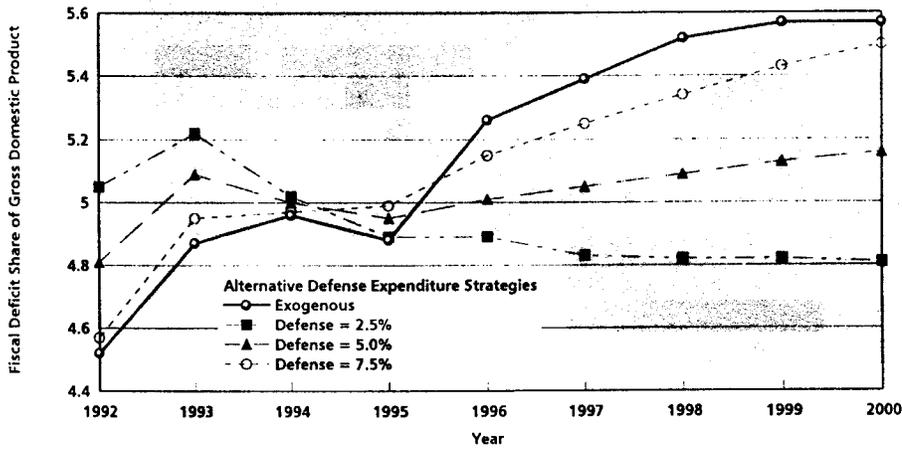


Figure 7. Pakistan: the budget deficit under alternative fiscal programs.

2. However, supplementing tax reform with constraints on non-defense expenditure (Program IV) quickly suppressed inflation. This policy package lowered inflation below 5% through much of the period under consideration.

*Budget deficit.* The pattern of budget deficits was similar to those characterizing inflation. Without tax reform, the programs were not capable of significantly reducing the share of the fiscal deficit in GDP. Specifically, constrained defense expenditures at 2.5%, Program I and Program II, all stabilized the deficit at around 5.0% (with Program II eventually reducing this ratio to 4.5% at the end of the century).

On the other hand, fiscal performance improved dramatically with expanded revenues (Program III) and constrained non-defense expenditures (Program IV). Specifically, by 2000, Program III brought the deficit down to around 2.6% of GDP (Figure 7) and Program IV brought the deficit down further toward 2.0%.

*Savings.* As noted, increasing the rate of national savings must be a key objective in any fiscal program. In this regard, all five packages produced some improvement in this aggregate. Again, the results (Figure 8) from the defense expenditure expansion of 2.5%, Program I and Program II, were fairly similar (with savings increasing from about 14.5% in 1992 to slightly over 17% by 2000).

Tax reforms however contributed greatly to this objective, raising the saving rate to nearly 19% at the end of the period. Finally, constraints on non-defense expenditure expanded this rate a further 2% to slightly under 21% by 2000.

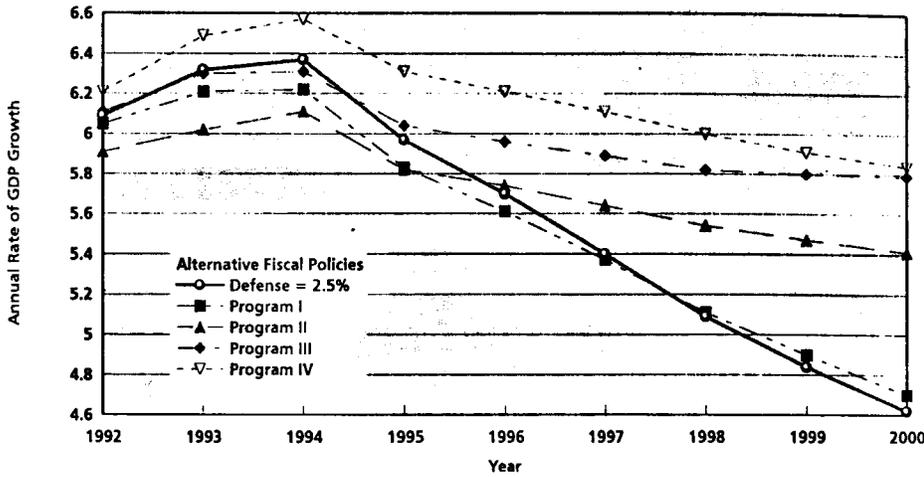


Figure 8. Pakistan: savings performance under alternative fiscal programs.

*Private investment.* Finally, increasing the share of national resources invested by the private sector is possible under all of the programs examined (Figure 9). Here improvements up to around 10.2% (from around 9.2% in 1992) are easily obtained. As with the other macro-economic aggregates, however, a significant improvement in private investment depends critically on the willingness of the government to reduce its deficit.

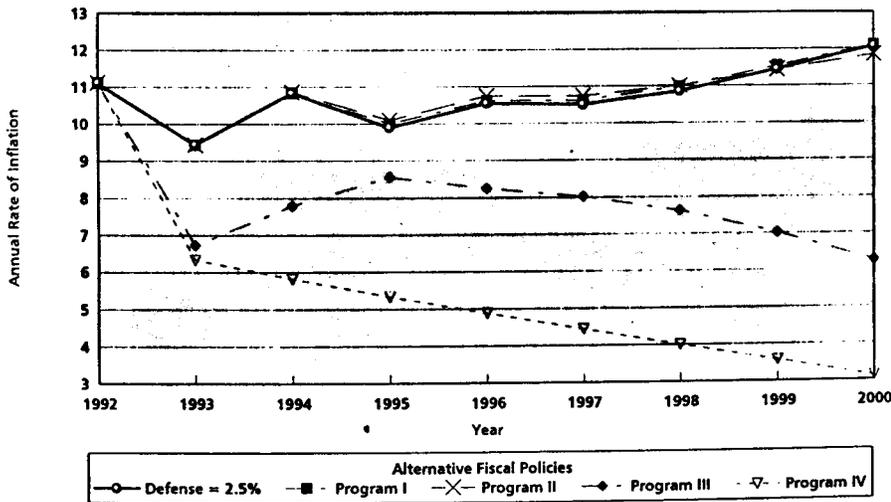


Figure 9. Pakistan: private investment under alternative fiscal programs.

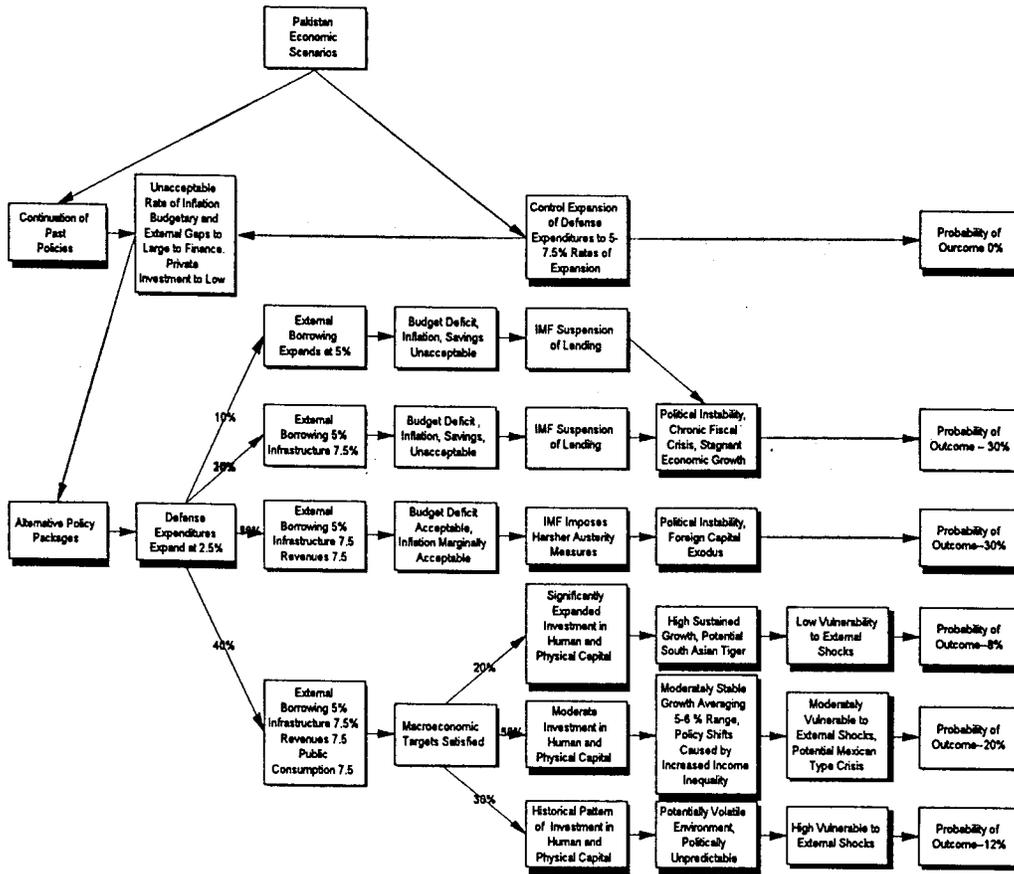


Figure 10. Pakistan: fiscal options and prospects.

**Summary**

In summing up, the fiscal pattern that developed in Pakistan during the 1980s and extending to the 1990s is not sustainable. Over-expansion in expenditures, both for defense and non-defense purposes, together with sluggish revenues and excessive foreign borrowing have created a situation in which further growth will be increasingly constrained by debt servicing, inflation, and shortages of domestic savings for private investors.

However, given the complex nature of defense expenditures in both stimulating and suppressing growth, budgetary reductions in this area in, and of themselves, are unlikely to improve the country's economic performance. In fact, rapid reductions in defense are likely to impair the situation even further. On the other hand, modest efforts in tax reform are by far the most effective means of restoring fiscal stability.<sup>28</sup> The optimal policy mix is one of tax reform together with defense expenditure expansion constrained in the 2.5% range. Unforeseen events aside, this package would enable the country to meet the

goals established by itself and its major creditors in restoring a rapid, self-sustaining growth in an environment characterized by a declining defense burden.

### Prospects

The results summarized above are suggestive of the country's future macro-economic environment. They show that the country has, through fiscal reforms, the potential of sustaining a relatively high rate of economic expansion throughout the 1990s. Combining the fiscal simulations summarized above with an (admittedly subjective) estimate of their likely occurrence, the country has, in most likelihood a probability of around 40% (Figure 10) of sustaining a strong economic expansion through the remainder of the 1990s.

A broader issue is whether this expansion is broad-based enough and sustainable to the point that the country might evolve into a dynamic South Asian Tiger. In this regard, the present South East Asian Tigers have a number of characteristics that set them apart from Pakistan and most other developing countries. These include:<sup>29</sup>

1. More rapid output and productivity growth in agriculture.
2. Higher rates of growth of manufactured exports.
3. Earlier and steeper declines in fertility.
4. Higher growth rates of physical capital supported by higher rates of domestic savings.
5. Higher initial levels of growth rates of human capital.
6. Generally higher rates of productivity growth.
7. Declining income inequality and reduced poverty.

Although Pakistan's overall-economic growth rates have been roughly comparable to those of the South East Asian (Singapore, Malaysia, South Korea and Thailand) countries (Table B1), it is apparent that the country has not been able to lay the foundation necessary for high and sustained growth. In particular:

1. The country's savings rate is one of the lowest in the world.
2. Export performance has been erratic.
3. Manufacturing has not shown an ability to grow at a faster rate than the overall economy.
4. Government consumption accounts for a relatively high share of GDP.
5. The country's population growth rate remains relatively high.
6. As opposed to the South East Asian countries, Pakistan would be beginning its phase of high growth with an extremely high debt ratio.
7. By most measures, Pakistan's military expenditures are considerably above those in South East Asia.

Most important, the country has seriously neglected the development of human capital. Despite rapid economic growth, there has been little improvement in literacy, the proportion of children in school or the number of available teachers.

The unequal distribution of human capital, in turn, has created an income distribution much more unequal than that found in South East Asia. Most analysts feel that the success of the South East Asian economies is linked to their initial, equitable distribution of income and assets.

Given the budgetary constraints that the government is likely to be faced with during the remainder of the decade, it is difficult to see how the country could significantly improve its social infrastructure. Without these human assets and capabilities, the country will be unable to achieve the productivity increases necessary to transform itself along the lines of the South East Asian model.

## Appendix A

**Table A1. Pakistan: Defense and the Macroeconomy, Simulation Model, 1973–1991**

(constant 1985 prices)

### Structural equations

(1) Gross Domestic Product (GDP)

$$\text{GDP} = -53.4 + 1.70 K + 1.59 GK + 6.38 \text{EMP}_{-1} + 3.21 \text{MILX}$$

$$(-1.55) (9.42)\ddagger (2.81)\dagger (5.25)\ddagger (2.75)\dagger$$

$$r^2(\text{adj}) = 0.998; \text{SE} = 5.94; \text{DW} = 1.96; F = 2280.7\ddagger$$

(2) Employment (EMP)

$$\text{EMP} = 3.05 + 0.42 \text{EMP}_{-1} + 0.12 \text{POP} + 0.04 \text{IGT}_{-1}$$

$$(2.93)\dagger (2.13)\dagger (2.70)\dagger (2.19)\dagger$$

$$r^2(\text{adj}) = 0.994; \text{SE} = 0.28; \text{DW} = 2.82; \text{Durbins } H = -3.33; F = 907.8\ddagger$$

(3) Defense Expenditures (MILX)

$$\text{MILX} = -4.77 + 0.13 \text{GDP}_{-1} - 0.24 \text{IGTP}_{-1} - 0.23 \text{BORFP}_{-1} - 0.14 \text{PDII}$$

$$(-1.32) (6.49)\ddagger (-3.08)\ddagger (-2.44)\dagger (-2.08)\dagger$$

$$r^2(\text{adj}) = 0.990; \text{SE} = 1.11; \text{DW} = 1.66; F = 403.2\ddagger$$

(4) Non-Defense Public Expenditures (NILX)

$$\text{NILX} = -29.71 + 0.23 \text{GDP}_{-1} - 2.81 \Delta \text{MILX}_{-1}$$

$$(-7.01)\ddagger (19.74)\ddagger (-2.50)\dagger$$

$$r^2(\text{adj}) = 0.964; \text{SE} = 5.838; \text{DW} = 1.74; F = 229.61\ddagger$$

(5) Gross National Savings (GNS)

$$\text{GNS} = -30.12 + 0.18 \text{GDP}_{-1} - 0.73 \text{GDEF} - 0.71 \text{GDEF}_{-1}$$

$$(-5.08)\ddagger (10.88)\ddagger (-2.35)\dagger (-2.41)\dagger$$

$$r^2(\text{adj}) = 0.944; \text{SE} = 5.96; \text{DW} = 2.21; F = 96.15\ddagger$$

(6) Total Public Investment (IGT)

$$\text{IGT} = 6.81 + 0.47 \text{IGT}_{-1} + 1.04 \text{IGGT}$$

$$(3.31)\ddagger (3.68)\ddagger (3.39)\ddagger$$

$$r^2(\text{adj}) = 0.951; \text{SE} = 2.37; \text{DW} = 2.61; \text{Durbins } H = -1.76; F = 144.30$$

## (7) General Government Investment (IGGT)

$$\text{IGGT} = 3.08 + 0.71 \text{IGGT}_{-1} + 0.23 \text{IPMT}$$

$$(2.77)\dagger (5.47)\ddagger (2.11)\dagger$$

$$r^2(\text{adj}) = 0.951; \text{SE} = 1.02; \text{DW} = 1.81; \text{Durbins } H = 0.46; F = 167.05$$

## (8) Total Public Revenue (GRT)

$$\text{GRT} = -20.77 + 0.21 \text{GDP}_{-1} + 0.26 \Delta \text{GDP}_{-1}$$

$$(-9.27)\ddagger (25.25)\ddagger (2.35)\dagger$$

$$r^2(\text{adj}) = 0.941; \text{SE} = 2.87; \text{DW} = 1.85; F = 906.67\ddagger$$

## (9) Public Domestic Borrowing (BORD)

$$\text{BORD} = 12.99 + 0.73 \text{GDEF}_{-1} - 0.91 \text{BORF}$$

$$(4.00)\ddagger (5.10)\ddagger (-2.91)\dagger$$

$$r^2(\text{adj}) = 0.610; \text{SE} = 5.27; \text{DW} = 2.37; F = 14.30\ddagger$$

## (10) Public Foreign Borrowing (BORF)

$$\text{BORF} = 14.74 + 0.48 \text{GDEF} + 0.27 \text{GDEF}_{-1} - 0.59 \text{MILX}$$

$$(8.40)\ddagger (4.13)\ddagger (2.48)\dagger (-6.02)\ddagger$$

$$r^2(\text{adj}) = 0.715; \text{SE} = 2.30; \text{DW} = 1.91; F = 15.19\ddagger$$

## (11) Private Investment in Large-Scale Manufacturing (IPML)

$$\text{IPML} = -4.37 + 0.78 \text{IPML}_{-1} - 0.07 \text{BORD}_{-1} + 0.24 \text{MILX}_{-1} + 0.13 \text{BORF}$$

$$(-3.36)\ddagger (5.96)\ddagger (-2.63)\dagger (3.75)\ddagger (2.66)\dagger$$

$$r^2(\text{adj}) = 0.990; \text{SE} = 0.59; \text{DW} = 1.99; \text{Durbins } H = -0.54; F = 413.6\ddagger$$

## (12) Private Investment in Small-Scale Manufacturing (IPMS)

$$\text{IPMS} = 0.02 + 0.85 \text{IPMS}_{-1} - 0.006 \text{BORD} + 0.007 \text{NILX}$$

$$(0.43) (8.87)\ddagger (-2.82)\dagger (-4.26)\ddagger$$

$$r^2(\text{adj}) = 0.994; \text{SE} = 0.05; \text{DW} = 2.12; \text{Durbins } H = -0.93; F = 934.7\ddagger$$

## (13) Private Investment in Non-Manufacturing (IPNMT)

$$\text{IPNMT} = 2.39 + 0.07 \text{GDP} - 0.36 \text{MILX} + 0.08 \text{GNS}$$

$$(3.06)\ddagger (7.54)\ddagger (-3.31)\ddagger (3.24)\ddagger$$

$$r^2(\text{adj}) = 0.987; \text{SE} = 0.81; \text{DW} = 1.75; F = 415.55\ddagger$$

## (14) Total Public External Debt (PDF)

$$\text{PDF} = 14.27 + 0.43 \text{PDF}_{-1} + 1.05 \text{IGT} + 9.96 \Delta \text{BORF}_{-1}$$

$$(1.52) (2.84)\dagger (4.13)\ddagger (2.37)\dagger$$

$$r^2(\text{adj}) = 0.874; \text{SE} = 6.43; \text{DW} = 2.14; \text{Durbins } H = -0.78; F = 40.20\ddagger$$

## (15) Public External Debt to International Institutions (PDII)

$$\text{PDII} = -10.78 + 0.97 \text{PDII}_{-1} + 1.05 \text{IGGT}$$

$$(-3.47)\ddagger (13.57)\ddagger (3.13)\ddagger$$

$$r^2(\text{adj}) = 0.990; \text{SE} = 2.51; \text{DW} = 2.28; F = 869.97\ddagger$$

## (16) Imports (ZN)

$$\text{ZN} = -24.78 + 0.35 \text{GDP}_{-1} - 2.37 \text{REALEX} + 0.96 \Delta \text{IGTP}$$

$$(-1.99)* (21.55)\ddagger (-2.37)\dagger (2.15)\dagger$$

$$r^2(\text{adj}) = 0.983; \text{SE} = 5.98; \text{DW} = 1.60; F = 271.41\ddagger$$

(17) GDP Deflator (GDPDF)

$$\text{GDPDP} = 0.081 + 0.73 \text{ GDPDF}_{-1} + 0.0016 \text{ MSGC}_{-1} + 0.076 \text{ UVZ}$$

(3.25)‡ (13.24)‡ (5.50)‡ (2.50)†  
 $r(\text{adj}) = 0.998$ ; SE = 0.02; DW = 2.07; Durbins  $H = -0.69$ ;  
 $F = 2753$ ‡

(18) Government Credit from the Monetary System (MSGCP)

$$\text{MSGCP} = 28.20 + 1.70 \text{ GDEF}_{-1} + 1.73 \text{ GDEF}_{-2} + 11.49 \Delta \text{MILXP}_{-1}$$

(3.26)‡ (2.50)† (2.39)† (3.81)‡  
 $r(\text{adj}) = 0.842$ ; SE = 16.44; DW = 1.96;  $F = 24.96$ ‡

(19) Government Expenditures (GD)

$$\text{GE} = \text{MILX} + \text{NILX}$$

(20) Government Deficit (GDEF)

$$\text{GDEF} = \text{GE} - \text{GR}$$

(21) Change in GDP ( $\Delta$  GDP)

$$\Delta \text{GDP} = \text{GDP} - \text{GDP}_{-1}$$

(22) Lagged Change in Defense Expenditures ( $\Delta$  MILX<sub>-1</sub>)

$$\Delta \text{MILX}_{-1} = \text{MILX}_{-1} - \text{MILX}_{-2}$$

(23) Nominal Public Sector Credit from the Financial System (MSGC)

$$\text{MSGC} = \text{MSGCP} \times \text{GDPDF}$$

(24) Real Exchange Rate (REALEX)

$$\text{REALEX} = \text{EXR} \times \text{UVZ}/\text{GDPDF}$$

(24) Private Investment in Manufacturing (IPMT)

$$\text{IPMT} = \text{IPML} + \text{IPMS}$$

(25) Total Private Investment (IPT)

$$\text{IPT} = \text{IPMT} + \text{IPNMT}$$

(26) Private Capital Stock (PK)

$$\text{PK} = \text{IPT} + \text{IPT}_{-1} + \text{IPT}_{-2}$$

(27) Public Capital Stock (GK)

$$\text{GK} = \text{IGGT} + \text{IGGT}_{-1} + \text{IGGT}_{-2}$$

(28) External Gap (EGAP)

$$\text{EGAP} = \text{EP} + \text{NFP} - \text{ZN}$$

**Exogenous**

(29) Population (POP)

(30) Exchange Rate (EXR)

(31) Import Price Index (UVZ)

(32) Exports (EP)

(33) Net Factor Payments (NFP)

*Notes:* Two stage least squares estimations. See: *SORITEC Integrated Econometric and Statistical Analysis Language, Version 6.6 Reference Manual* (Springfield, Virginia: Soritec Group 1993) for a description of the procedure.  $r^2(\text{adj})$ , adjusted coefficient of determination; SE, Standard Error of Regression; DW, Durbin Watson Statistic; Durbins  $H$ , Durbin's  $H$  Statistic;  $F$ ,  $F$  Statistic;  $\Delta$ , year-to-year difference; ( $t$ ),  $t$ -statistic; \*, significant at the 90% level, †significant at the 95% level; ‡, significant at the 99% level.

## Appendix B

Table B1. International comparisons of economic and social performance

Measure	Region			
	Total	SE Asia	S Asia	Pakistan
<i>Economic Performance (% growth)</i>				
Gross Domestic Product, 1970–1980	4.9	8.2	4.1	4.9
Gross Domestic Product, 1980–1991	2.8	7.5	5.2	6.1
Investment, 1970–1980	6.5	10.0	7.3	3.7
Investment, 1980–1991	0.3	7.8	4.0	5.6
Exports, 1970–1980	4.0	7.9	2.3	0.7
Exports, 1980–1991	4.7	10.7	7.9	9.9
Government expenditures, 1970–1979	8.1	9.4	5.9	7.4
Government expenditures, 1981–1991	0.8	4.9	5.0	7.0
Population, 1970–1980	2.6	2.2	2.4	3.1
Population, 1980–1991	2.5	1.8	2.2	3.1
<i>Economic structure (% GDP)</i>				
Investment, 1970	21.7	28.0	17.3	16.0
Investment, 1991	20.5	37.8	20.7	19.0
Savings, 1970	18.6	20.3	13.7	9.0
Savings, 1991	14.0	36.3	14.7	12.0
Private consumption, 1970	69.1	67.8	76.0	81.0
Private consumption, 1991	72.2	52.5	73.7	75.0
Exports, 1970	22.7	43.3	13.3	8.0
Exports, 1991	28.5	83.3	17.7	16.0
Resource balance, 1970	-2.7	-7.5	-3.7	-7.0
Resource balance, 1991	-6.8	-1.5	-6.0	-7.0
Government consumption, 1970	13.8	12.3	10.3	10.0
Government consumption, 1991	13.9	11.5	11.7	13.0
Manufacturing, 1970	14.2	17.3	16.0	16.0
Manufacturing, 1991	15.2	28.0	16.3	17.0
<i>Infrastructure investment (% growth)</i>				
Paved roads, 1970–1980	8.6	8.5	5.6	4.4
Paved roads, 1980–1990	3.0	4.8	5.3	8.6
Irrigated land, 1970–1980	4.5	2.5	1.6	1.3
Irrigated land, 1980–1990	2.4	1.5	1.0	1.5
Electric generating capacity, 1970–1980	8.9	11.8	6.6	8.3
Electric generating capacity, 1980–1990	6.2	7.9	10.1	10.0
<i>Debt (%)</i>				
External debt/exports, 1980	152.4	90.7	156.1	208.8
External debt/exports, 1991	392.3	65.4	250.4	244.9
External debt/GDP, 1980	40.9	34.2	33.5	42.4
External debt/GDP, 1991	82.5	33.7	50.7	50.1
Debt service/exports, 1980	17.3	15.0	13.1	17.9
Debt service/exports, 1991	21.0	9.5	21.9	21.1
<i>Military (average % share)</i>				
Defense expenditures/budget, 1970–1980	15.2	22.0	17.7	29.5
Defense expenditures/budget, 1980–1991	16.1	18.9	17.0	26.2

Table B1. *Continued.*

Measure	Region			
	Total	SE Asia	S Asia	Pakistan
Arms imports/total imports, 1970–1980	8.5	2.4	5.3	8.5
Arms imports/total imports, 1980–1991	17.7	1.3	6.9	6.9
Defense expenditures/GDP, 1970–1980	5.6	9.1	7.0	6.1
Defense expenditures/GDP, 1980–1991	5.3	4.5	4.1	6.2
Armed forces/1000 population, 1970–1980	7.1	10.8	3.3	6.5
Armed forces/1000 population, 1980–1991	8.0	12.2	3.4	6.3
<i>Social</i>				
Population per physician, 1970	15,470.4	4047.5	5033.3	4310.0
Population per physician, 1990	10,570.2	2472.5	2700.0	2940.0
Life expectancy (years), 1991	60.4	71.0	63.3	59.3
Illiteracy (%), 1991	37.4	11.0	43.0	65.0
Malnourished (%), 1991	25.4	25.0	51.0	57.0
<i>Education (% relevant age group in school)</i>				
Primary school, 1970	71.9	94.5	70.7	40.0
Primary school, 1990	87.5	99.0	80.3	37.0
Secondary school, 1970	20.8	34.8	28.7	13.0
Secondary school, 1990	39.8	61.0	46.7	22.0
Tertiary school, 1970	8.1	11.0	4.5	4.0
Tertiary school, 1990	10.8	17.5	3.5	3.0
Primary pupil/teacher ratio, 1970	38.5	38.3	41.0	41.0
Primary pupil/teacher ratio, 1990	35.4	25.0	51.0	41.0

Sources: Economic/Social, World Bank. Military, United States Arms Control and Disarmament Agency.

## Notes and references

1. 'Pakistan: current economic situation and prospects', Report No 9283-PAK, Washington: The World Bank, 22 March 1991, p ii.
2. See for example A. R. Kemal, 'Fiscal imbalances as an obstacle to privatization effort', *The Pakistan Development Review*, Vol 28, No 4, Part II (Winter 1989), pp 1009–1019; Nadeem Burney and Attiya Yasmeen, 'Government budget deficits and interest rates: an empirical analysis for Pakistan', *The Pakistan Development Review*, Vol 28, No 4, Part II (Winter 1989), pp 971–980; A. H. Khan and Z. Iqbal, 'Fiscal deficit and private sector activities in Pakistan', *Economina Internazionale* Vol 44, No 2–3 (May–August 1991) pp 182–190.
3. Charlotte Blum, 'Can Bhutto keep her promises?', *Middle East Economic Digest* (1 July 1994) p 2.
4. Ashmed Rashid, 'Getting tough: Pakistan's Bhutto tries for fiscal austerity', *Far Eastern Economic Review* (23 June 1994) p 61.
5. Farhan Bokhari, 'Pakistan Falls short of growth target', *Financial Times*, (20 May 1994) p 5.
6. Hopefully this policy would be complemented by some of the innovative reforms outlined in Imtiza Ahmed, 'State military and modernity: the experience of South Asia', *Contemporary South Asia*, Vol 3, No 1 (1994) pp 53–66.
7. Cf. Tamin Bayoumi, Daniel Hewitt and Jerald Schiff, 'Economic consequences of lower military spending: some simulation results', International Monetary Fund, *IMF Working Paper* (March 1993).
8. John Teddenick, 'The arms race and military Keynesianism', *Canadian Journal of Public Policy*, Vol 5 (1985) pp 64–80; see also Robert E. Looney, 'A post-Keynesian analysis of Third World military expenditures', *Rivista Internazionale di Scienze Economiche e Commerciali*, Vol 38 (September 1991), pp 779–796.

9. The economic consequences of defense expenditures in the developing world is a rapidly growing area of research. For a survey of the main issues and findings see: G. T. Harris, 'Economic aspects of military expenditures in developing countries: a survey article', *Contemporary Southeast Asia*, Vol 8 (June 1988), pp 82-102; Steve Chan, 'Military expenditures and economic performance', in United States Arms Control and Disarmament Agency, *World Military Expenditures and Arms Transfers, 1986* (Washington: ACDA, 1987) pp 29-38; Robert E. Looney, *The Economics of Third World Defense Expenditures?* (Greenwich, CT: JAI Press, 1994).
10. Robert E. Looney, 'Defense expenditures and economic performance in South Asia: tests of causality and interdependence', *Conflict Management and Peace Science*, Vol 11, No 2 (Spring 1991) pp 37-68.
11. Robert E. Looney, 'Defense expenditures and economic performance in South Asia: tests of causality and interdependence', *Conflict Management and Peace Science*, Vol 11, No 2 (Spring 1991) pp 52-53.
12. See for example, A. H. Khan and Z. Iqbal, 'Fiscal deficit and private sector activities in Pakistan', *Economia Internazionale*, Vol 44 (May-August 1991) pp 182-190; Ashfaq H. Khan, 'Macroeconomic policy and private investment in Pakistan', *The Pakistan Development Review*, Vol 27 (Autumn 1988) pp 277-291; Nadeem A. Burney and Attiya Yasmeen, 'Government budget deficits and interests: an empirical analysis for Pakistan', *The Pakistan Development Review*, Vol 28 (Winter 1989) pp 971-980; Nadeem U. Haque and Peter J. Montiel, 'Fiscal policy choices and macroeconomic performance in the nineties', in Anjum Nasim (ed) *Financing Pakistan's Development in the 1990s* (Karachi: Oxford University Press, 1992), pp 101-162.
13. Robert E. Looney, 'Defense expenditures, investment and crowding out: problems of capital formation in Pakistani manufacturing', *Journal of Third World Studies*, (forthcoming 1994).
14. Again only the results for the actual (realized) deficit are presented here.
15. The following patterns were identified in: Robert E. Looney, 'The budgetary impact of defense expenditures in the Middle East', *The Middle East Business and Economic Review*, Vol 5, No 3 (July 1993) pp 38-49; Robert E. Looney, 'Defense expenditure, allocations for development and debt servicing: an analysis of Pakistani budgetary priorities, 1976-1992', *Journal of South Asian and Middle Eastern Studies*, Vol 17, No 4 (Summer 1994) pp 68-89; P. C. Frederiksen and Robert Looney, 'Budgetary consequences of defense expenditures in Pakistan: short-run impacts and long-run adjustments', *Journal of Peace Research*, Vol 31, No 1 (February 1994) pp 11-18.
16. The actual expenditure on non-defense categories is also determined by the willingness of the government to increase borrowing and the deficit to fund these programs. See Frederiksen Looney, *op cit*, Ref. 150.
17. Robert Looney, 'Budgetary dilemmas in Pakistan: costs and benefits of sustained defense expenditures', *Asian Survey*, Vol 34, No 5 (May 1994) pp 417-429.
18. A full description of the model, its estimation and the underlying data base are available from the author upon request.
19. It should be noted that Gross National Savings is used here. Due to the large component of worker remittances Gross Domestic Savings fluctuates erratically. These remittances are no doubt purely exogenous and as such tend to mask the relationship between government expenditures, the deficit and the change in savings.
20. 'IMF agrees to lend \$1.7 Billion', *Middle East Economic Digest*, 26 November 1993 p 34.
21. *Ibid.*
22. *Ibid.*
23. International Monetary Fund, *IMF Survey* (7 March 1994) pp 76-77.
24. Cf. Ahmed Rashid, 'Bad math: Pakistan's budget shortfall brings on fiscal crisis', *Far Eastern Economic Review* (26 January 1995) p 49; Emmeline Rogers, 'Bhutto chases the Asian tigers', *Middle East Economic Digest*, (16 December 1994) pp 2-3; Farhan Bokhari, 'Pakistani team to meet IMF over three year programme', *Financial Times* (25 January 1995) p 6; Ahmed Rashid, 'Add sugar: Pakistan's farm sector demands regulatory relief', *Far Eastern Economic Review* (8 December 1994) pp 60-91; Ahmed Rashid, 'Cotton-picking rain', *Far Eastern Economic Review*, (13 October 1994) p 69.
25. Ahmed Rashid, 'Getting tough: Pakistan's Bhutto tries for fiscal austerity', *Far Eastern Economic Review*, (23 June 1994), p 61.
26. Farhan Bokhari and Graham Bowley, 'Shadow of unrest shakes confidence', *Financial Times*, (7 April 1995) p 23.
27. 'Karachi strife prompts businesses to threaten tax strike', *International Herald Tribune*, (17 March 1995) p 5.
28. A similar conclusion is reached in Ashfaq H. Khan, 'Budgetary deficit: options and limitations', *PIDE Tidings*, Vol 1, No 3 (September-December 1989) pp 19-22.
29. See The World Bank, *The East Asian Miracle: Economic Growth and Public Policy* (New York: Oxford University Press, 1993).