

**MACROECONOMIC
DEVELOPMENTS AND POVERTY**

Research Report No. 33

Macroeconomic Developments and Poverty

By

Dr. Hafiz A. Pasha

2000

Social Policy and Development Centre

SUMMARY

The paper deals with the impact of macroeconomic developments on the incidence of poverty and offers an explanation as to why poverty fell sharply in the decade of 80s and has tended to increase significantly in the 90s. It develops a set of medium term (upto 2002-03) macroeconomic projections which embody a 'business as usual' type of scenario and identifies the likely consequences on the level of poverty of this scenario. The paper also analyses the implications of a balance of payments adjustment which may be required after December 2000 to enhance the external debt repayment capacity and of a fiscal stimulus involving a jump in development expenditure. Finally, the paper answers the following question: What type of macroeconomic developments are consistent with realisation of the objective of containing the growth in poverty?

MACROECONOMIC DEVELOPMENTS AND POVERTY

By

Hafiz A. Pasha?

The return of (rapidly increasing) poverty in Pakistan during the last few years is increasingly being recognised by government, donors and civil society at large as perhaps the principal problem which needs to be tackled on a top priority and urgent basis if a large-scale social breakdown is to be averted with its concomitant implications on law and order. In light of this recognition, the new military government has recently announced the elements of a poverty alleviation strategy which include a focus on employment generation via a public works program and expanded micro credit and on helping the chronically poor through larger *Zakat* subventions and a food stamp scheme.

The contention of this paper is that while social safety nets can begin to mitigate against the worst manifestations of poverty, the overall poverty outcome in the country hinges crucially on broader macroeconomic developments relating to key determinants of poverty like the growth in real per capita income, rate of unemployment, level of cost of living (especially as reflected in food prices), etc. In other words, if macroeconomic developments remain unfavourable then directly targeted efforts at poverty alleviation through social safety nets are unlikely to be successful in counteracting the underlying increase in poverty. As such, the objective of the paper is to focus on the relationship between macroeconomic developments and the incidence of poverty.

It needs to be emphasised at this stage that positive macroeconomic developments as evidenced by a faster rate of economic growth are not a sufficient condition for poverty to decline. As identified in the economic literature, this depends upon whether the fast growth is accompanied by significant 'trickle down' effects. If income inequality rises with growth then it may even be possible for poverty to

[?]This paper is based on a presentation made to representatives of donor agencies in Islamabad on March 1, 2000. Assistance of Sajjad Akhtar, Kalim Hyder and Mansoor Ahmed is acknowledged. Any defects which remain are solely the responsibility of the author.

increase during periods of rapid growth. Alternatively, if growth increases labor absorption rapidly and moderates inflationary pressures, especially on food prices, then it may play a strong poverty alleviating role. Therefore, from the viewpoint of impact on poverty, macroeconomic developments have to be analysed not only in terms of the rate of economic growth but also in terms of factors which capture the potential magnitude of 'trickle down' effects.

Based on this, it can perhaps be argued that periods of low growth, as in the 90s in Pakistan, need not always be accompanied by rising poverty if such growth has been achieved by an employment generating strategy and a policy of controlling food prices through larger imports or subsidies. However, the evidence for Pakistan during the 90s is that of rising unemployment and increasing relative food prices. Therefore, in the absence of a significant rate of increase in real per capita income there have been no other major poverty alleviating factors and this is the reason why poverty has started increasing rapidly.

The paper is organised in five parts. The first part deals with macroeconomic developments and changes in the incidence of poverty during the decade of the 80s and the 90s and offers an explanation as to why poverty fell sharply in the former decade and has tended to increase significantly in the latter decade. The second part develops a set of medium term (upto 2002-03) macroeconomic projections which embody a 'business as usual' type of scenario and identify the likely consequences on the level of poverty in this scenario. The third part deals with the implications on poverty of a sharp balance of payments adjustment which may be necessitated from 2000-01 onwards if Pakistan is to honor its external debt repayment obligations following the expiry of the period of debt relief in December 2000.

The fourth part of the paper highlights the implications for poverty of an economic revival strategy currently being contemplated essentially involving a Keynesian type of fiscal stimulus to the economy via a big push in development expenditure. The fifth part answers the following question: what type of macroeconomic developments are consistent with realisation of the objective of containing the growth in poverty? Once the required magnitudes of the macroeconomic parameters which keep the incidence of poverty unchanged are identified it becomes possible to assess the likely feasibility of their

achievement and thereby formulate a judgement on the prospects for arresting the adverse trends in poverty during the next few years.

I PAST TRENDS

There has been a visible decline in the growth momentum of the economy during the decade of the 90s. The 80s saw a steady growth rate of 6 per cent which fell to 5 per cent in the first half of the decade of the 90s and declined further to 4 per cent in the second half of the decade (see Table 1). Last year it was only 3 per cent. Consequently, the rise in real per capita income has tapered off. It increased annually by almost 3 per cent during the decade of the 80s, but during the last three years there has cumulatively been an increase of only 1 per cent in this indicator.

The primary reason for the falling growth rate is the declining level of investment and savings in the economy. From the peak level of 18 per cent of GDP, fixed investment has fallen to 13 per cent by 1998-99. This is a reflection of the declining level of national savings. Foreign savings (as measured by the current account deficit) have been drawn in to finance an increasing share of investment in the economy, with the exception of 1998-99 when the current account deficit fell sharply due to the imposition of import controls in response to the sanctions placed on Pakistan following the nuclear blasts and because of the large fall in oil prices.

The rate of inflation remained single digit throughout the 80s. It rose sharply to over 11 per cent in the first half of the decade of the 90s but has moderated somewhat in the second half. Inflation in 1998-99 at 6 per cent was low by historical standards due to less imported inflation and restricted monetary expansion (due to domestic debt retirement facilitated by the external debt relief). It is significant to note that food prices have generally risen more rapidly than the overall consumer price index.

Unemployment has increased in the 90s in relation to the 80s by about two percentage points. This is reflection not only of continuing rapid growth in the labour force due to the high

TABLE 1
TREND IN MACROECONOMIC INDICATORS AND
INCIDENCE OF POVERTY DURING THE 80s AND 90s

Indicator	Unit [?]	Decade of 80s	First Half of Decade of 90s	Second Half of Decade of 90s
GDP Growth Rate	%	6	5	4
Growth Rate of Real Per Capita Income	%	3	2	1
Unemployment Rate	%	3½	5½	5½
Level of Fixed Investment	% of GDP	16	18	15
Level of National Savings	% of GDP	14	15	12
Current Account Deficit	% of GDP	4	4½	4½
Budget Deficit	% of GDP	7	7	6½
Rate of Inflation (CPI)	%	7	11½	9
Rate of Inflation (food prices)	%	8	12	9
Incidence of Poverty:				
Beginning of Period	% of Popn	30¾	20½	26¾
End of Period	% of Popn	20½	26¾	33½
Change during Period		-10¼	6¼	6¾

[?]Rounded off to the nearest quarter percentage point

Source: Pakistan Economic Survey

underlying rate of population growth and resulting concentration of the population in the younger age brackets but also as the growth rate of the economy has fallen significantly in the 90s along with double digit inflation and rising unemployment. Given these trends it is not surprising that while poverty fell in the 80s it has started rising rapidly in the 90s. As given in Table 1, incidence of poverty at the beginning of the decade of the 80s was close to 31 per cent, which is estimated to have fallen to below 21 per cent by the end of the decade. Latest estimates of poverty stand at almost 34 per cent of the population.

It is a legitimate question to ask at this stage what the quantitative contribution of different factors is to changes in poverty during the last two decades. For this it is necessary to empirically identify which factors impact upon poverty and to what extent. Research by Kemal and Amjad [1997], Akhtar and Ahmed [1999] indicates that the following factors are significant in explaining the variation in the incidence of poverty:

- ? level of real per capita income
- ? extent of unemployment
- ? level of food prices
- ? level of real per capita home remittances
- ? human capital endowment of the labour force

Table 2 gives the elasticity of the level of poverty with respect to the above - mentioned factors as estimated by Akhtar and Ahmed [1999]. It is interesting to note the high elasticities of -1.58 and 0.52 respectively with respect to real per capita income and level of food prices. Poverty alleviation efforts in Pakistan have

TABLE 2
ELASTICITY[?] OF INCIDENCE OF POVERTY
WITH RESPECT TO DIFFERENT
POVERTY DETERMINANTS

Determinant	Elasticity
Level of real per capita income	-1.58
Unemployment rate	0.11
Level of food prices	0.52
Level of real per capita remittances	-0.09
Human capital endowment of the labor force	-0.08

?This indicates the extent of change in poverty incidence due to a one percent increase in the determinant.
Source: Akhtar, S. and Mansoor Ahmed [1999]

generally focused on income supplements and employment generation. The need for basic food security for the poor in terms of access to and stability in prices of basic food items (like *atta*) has not been adequately recognised.

Table 3 gives estimates of the quantitative contribution of different factors to the change in the incidence of poverty during the 80s and 90s respectively. It appears that poverty declined in the 80s because the adverse impact of rising food prices was overshadowed by the increase in real per capita income and improvement in the human capital endowment of the labor force. As opposed to this, there are fewer mitigating factors in the 90s. Rising food prices, falling remittances and increasing unemployment have all contributed to greater poverty.

	Decade of 80s	Decade of 90s
<u>Change in Incidence of Poverty</u>	<u>-10¼</u>	<u>13</u>
Contribution of:		
Level of real per capita income	-8	-13
Unemployment rate	-¼	4¾
Level of food prices	3¼	21¾
Level of real per capita remittances	½	2¾
Human capital endowment of the labor force	-2½	-1¼
Unexplained	-3¼	-2

[?] rounded off to the nearest quarter percentage point
Source: Akhtar, S. and Mansoor Ahmed [1999].

Because of relative stagnation of real per capita income especially in the second half of the decade, the role of poverty reducing factors has been more limited.

II MEDIUM-TERM PROJECTIONS OF POVERTY

Eight months into the current fiscal year, it appears that 1999-2000 will witness a modicum of economic recovery in comparison to 1998-99, which was an especially difficult year due to the sanctions. However, much of the improvement in the growth rate to about 4½ per cent is attributable to bumper crops of cotton and rice. This has led to a revival of production and exports by the textile sector. There are no indications yet of a return to a higher growth path because the levels of investment and

TABLE 4
PROJECTED MAGNITUDE OF MACROECONOMIC
INDICATORS IN 1999-2000

Indicator	Unit [?]	1998-99 (Actual)	1999-2000
GDP Growth Rate	%	3	4½
Level of Fixed Investment	% of GDP	13	13
Level of National Savings	% of GDP	11¾	12¼
Current Account Deficit	% of GDP	2¾	2¼
Budget Deficit	% of GDP	6	5½
Rate of Inflation	%	6	5
Incidence of Poverty	% of Popn	33½	34¾

[?] rounded off to the nearest quarter percentage point

Sources: Pakistan Economic Survey

SPDC ISPM Model

savings both remain depressed (see Table 4). The rate of inflation is likely to remain low at about 5 per cent due to the depressed demand conditions and restricted rate of monetary expansion, although administered prices of petroleum prices have started rising rapidly in recent months due to higher import prices. The modest increase in real per capita income, relative price stability and continued high level of unemployment imply that in 1999-2000 while the incidence of poverty is unlikely to fall it is also unlikely to increase rapidly. It is estimated that poverty will increase by about one percentage point in 1999-2000.

Looking beyond 1999-2000, the Integrated Social Policy and Macroeconomic (ISPM) model of the Social Policy and Development Centre has been used to generate various scenarios upto 2002-03, the last year of the Ninth Plan period. The model has a conventional macroeconomic module alongwith two other modules relating to public finances and social development (including poverty). It captures

the interrelationships among economic and social variables in a way which has not been modelled before in a developing country context. Features of the model are given in Appendix I.

The first scenario generated from the model is the base scenario or the 'business as usual' scenario. This scenario is designed to answer the question that if recent trends continue then what are the implications for poverty in the next few years. Accordingly, assumptions underlying this scenario are as follows:

- (i) enough fiscal effort to keep tax-to-GDP ratio constant and an exchange rate policy which keeps the real effective exchange rate constant
- (ii) limited macroeconomic stabilisation with some fall in the budget and current account deficits
- (iii) gradual restoration of private sector confidence and modest increase in the level of private investment
- (iv) moderate growth in the world economy leading to some increase in export prices
- (v) no apparent constraint to financing current account deficits beyond the period of expiry of debt relief in December 2000.

Therefore, the growth path in this scenario is influenced primarily by the level of investment and savings in the economy.

Based on these assumptions, the projected macroeconomic magnitudes and incidence of poverty yielded by the ISPM model are given in Table 5. The growth rate in the 'business as usual' scenario remains below 5 per cent upto 2002-03. With a constant tax-to-GDP ratio the fiscal deficit falls slowly, by about $\frac{1}{4}$ percentage point of the GDP each year, while the current account deficit remains above $1\frac{1}{2}$ per cent of the GDP. Investment rises somewhat, primarily by the private sector. The unemployment rate continues to rise while the rate of inflation is expected to remain low, though with a rising tendency. Altogether, the 'business as usual' scenario implies modest growth, rising unemployment and a relatively low but increasing rate of inflation. Consequently, it is not surprising that in this scenario poverty continues to rise, more or less, rapidly. From about 34 per cent of the

population in 1998-99, the incidence of poverty is expected to increase to 41 per cent by 2002-03. This implies that the number of poor will rise to about 61 million in 2002-03 as compared to 45 million in 1998-99. Contribution of different factors to the projected change in the level of poverty is given in Table 6.

TABLE 5
PROJECTIONS OF MACRECONOMIC INDICATORS
AND INCIDENCE OF POVERTY IN
THE 'BUSINESS AS USUAL' SCENARIO, 1999-2000 TO 2002-03

Indicators	Unit [?]	1999- 2000	2000- 2001	2001- 2002	2002- 2003
GDP Growth Rate	%	4½	4¼	4½	4¾
Unemployment Rate	%	6¾	7	7¼	7½
Level of Fixed Investment	% of GDP	13	13¼	14	14½
Level of National Savings	% of GDP	12¼	12¾	13¾	14½
Current Account Deficit	% of GDP	2¼	2	1¾	1½
Budget Deficit	% of GDP	5½	5¼	5	4¾
Tax Revenues	% of GDP	12½	12½	12½	12½
Development Expenditure	% of GDP	3¼	3¼	3¼	3½
Rate of Inflation	%	5¼	5½	6¼	6½
Incidence of Poverty	% of Popn	34¾	36½	38¾	41
Number of Poor	Million	48	52	56	61

[?] rounded off to the nearest quarter percentage point

Source: SPDC ISPM Model

The basic conclusion is that if the growth performance of the economy does not improve dramatically in the next few years leading to faster increases in real per capita income and greater employment absorption, then poverty could rapidly assume crisis proportions with two poor families out of five in Pakistan. Clearly, efforts will have to be made on a priority basis to boost the level of investment in the economy by adoption of a wide ranging structural reforms agenda. This will require early restoration of private sector

confidence through rational and stable policies, resolution of the IPP problem and decline in interest rates. Public investment, which has fallen precipitously, will have to be raised by both resource mobilisation and diversion.

III BALANCE OF PAYMENTS ADJUSTMENT AND POVERTY

However, we have not yet heard the worst news. While the 'business as usual' scenario reveals rapidly increasing poverty in the next few years, the poverty outcome could be even worse if the economy has to make a balance of payments adjustment after December 2000 (when the debt relief expires) to create the requisite debt repayment capacity. In this section, we model the consequences of a balance of payments adjustment on poverty.

Analysis of the quantum of balance of payments adjustment required is given in Table 7. The table demonstrates that in the immediate aftermath of expiry of debt relief the balance of payments position becomes very precarious. Even after some reserve depletion the financable

TABLE 6
CONTRIBUTION OF DIFFERENT FACTORS
TO THE INCREASE IN POVERTY IN THE
'BUSINESS AS USUAL' SCENARIO
(from 1998-99 to 2002-03)

	(Percentage Points [?])
<u>Change in incidence of Poverty</u>	<u>7½</u>
CONTRIBUTION OF:	
Level of real per capita income	-3¾
Unemployment rate	1
Level of food prices	13¼
Level of real per capita remittances	-¼
Human capital endowment of the labor force	-2¾

[?] rounded off to the nearest quarter percentage point
 Source: SPDC ISPM Model

TABLE 7
QUANTUM OF ADJUSTMENT IN THE
BALANCE OF PAYMENTS
BEYOND 1999-2000

	(\$ Million)			
	1999- 2000	2000- 2001	2001- 2002	2002- 2003
Projected Current Account Deficit in the 'Business as Usual' Scenario	<u>1500</u>	<u>1400</u>	<u>1300</u>	<u>1200</u>
Projected Available Financing of Current Account Deficit:	<u>1500</u>	<u>500</u>	<u>800</u>	<u>1200</u>
! Capital Account Surplus(+) / Deficit (-)?	-3500	-600	800	1200
! Exceptional Financing	5000	700	0	0
! Depletion of FE Reserves	0	400	0	0
Sustainable Current Account Deficit??	<u>1500</u>	<u>500</u>	<u>800</u>	<u>1200</u>
Target Deficit as % of GDP	2¼	¾	1¼	1½
Quantum of Adjustment in the Current Account Deficit	<u>0</u>	<u>-900</u>	<u>-500</u>	<u>0</u>

?After honoring all external debt repayment obligations

??The maximum deficit which does not lead to reserves falling below \$ 1000 million

Source: Unpublished documents of State Bank of Pakistan

current account deficit in 2000-01 is only \$ 500 million as compared to the projection in the 'business as usual' scenario of \$ 1400 million. Therefore, a large downward adjustment of \$ 900 million is required in the current account deficit if Pakistan is to continue honoring all its external debt repayment obligations. A further adjustment is required in 2001-02, albeit of a lower magnitude.

How can such an adjustment be achieved? There are essentially two options. The first is by a *real* devaluation of the currency and the second by physical import compression via higher import margin requirements of the type resorted to in 1998-99 after the sanctions and, if necessary, import quotas. The ISPM Model is used to model these options. The first option is captured by adjustment scenario I and the second by adjustment scenario II.

Exchange rate depreciation can have some deleterious consequences on poverty. In particular, it can cause domestic prices of tradeables, including food, to rise. The rise in prices of imported capital goods can adversely affect investment, thereby implying less employment and income. The fiscal consequences are ambiguous. On the one hand, costs of external debt servicing increase but this is counterbalanced by increased tax revenues, especially from customs duties. If administered prices are not adjusted upwards then non-tax revenues could be adversely affected. Overall, if the impact is negative in terms of a larger fiscal deficit then this is another factor contributing to higher prices. Positive impacts of exchange rate depreciation on poverty include a higher rupee value of home remittances and to the extent exports increase, higher employment and incomes.

Import compression via quantity adjustments may have negative consequences on poverty depending on the nature and extent of this policy of import containment. If restrictions apply essentially only to luxury imports then the impact on the poor is limited. If, however, imports of industrial raw materials and capital goods also have to be curtailed then this could have significant adverse implications on output, employment and incomes. In addition, the contraction of the import tax base could have significant negative implications on tax revenues and thereby enlarge the fiscal deficit.

Results of the adjustment simulations by the ISPM model are presented in Table 8 in terms of the deviation of key variables from the ‘business as usual’ scenario. In adjustment scenario II which relies

	ADJUSTMENT SCENARIO	
	I	II
	(%) ²	
Real Effective Exchange Rate	+4 ^{??}	0
Imports	-4	-8
Exports	+5	0
Current Account Deficit	-35	-35
Investment	-2	-4
GDP	-½	-2
Unemployment	+4	+6
Price Level	+2	+1

exclusively on import compression it appears that over the next three years imports will have to be reduced by about 8 per cent annually in relation to the level projected in the base scenario. In adjustment scenario II bringing the current account deficit down to a financable level will require, more or less, equal reduction in imports and increase in exports. This will require a real devaluation in the currency of 6 per cent in 2000-01 in relation to the exchange rate projected in the ‘business as usual’ scenario.

Adjustment scenario II involves more quantity adjustments. Therefore, the fall in investment, income and employment is larger in this scenario. As such, the incremental impact on poverty in this scenario operates primarily via a reduction in real per capita income and increase in unemployment rate in relation to the base scenario. In adjustment scenario II the adjustment is primarily via prices. As such, most of the impact is through higher prices generally and more particularly food prices. The evolution of poverty in the two adjustment scenarios is given in Table 9.

The table shows that the process of balance of payments adjustment implies even higher poverty than in the ‘business as usual’ scenario. By 2002-03 almost 43 per cent of the population could fall below the poverty line. In the ‘business as usual’ scenario the number of poor is projected to increase by as much as 16 million between 1998-99 and 2002-03. Balance of payments adjustment to create the requisite debt repayment capacity makes another two million poor.

TABLE 9
PROJECTIONS OF INCIDENCE OF POVERTY IN
DIFFERENT SCENARIOS

	1998- 1999	1999- 2000	2000- 2001	2001- 2002	2002- 2003	Cumulative Increase from 1998-99
<i>(% OF POPULATION)[?]</i>						
'Business as Usual' Scenario	33½	34¾	36½	38¾	41	7½
Adjustment Scenario I	33½	34¾	38	40	42	8½
Adjustment Scenario II	33½	34¾	37½	40	42½	9
<i>(NUMBER IN MILLION)^{??}</i>						
'Business as Usual' Scenario	45	48	52	56	61	16
Adjustment Scenario I	45	48	53½	57¾	62¼	17¼
Adjustment Scenario II	45	48	53	57¾	63	18

[?]rounded off to the nearest quarter percentage point

^{??}rounded off to the nearest quarter million

Source: SPDC ISPM Model

Therefore, the social costs of such an adjustment are significant and argue for the introduction of a poverty reduction component in future IMF programs in Pakistan.

IV FISCAL STIMULUS AND POVERTY

Government of Pakistan has been pushing recently for a strategy of economic revival to bring back the growth momentum of the economy and also simultaneously alleviate poverty. The Chief Executive announced an Economic Revival Plan on December 15, 1999, which includes a poverty alleviation program. Within the context of such a program it is proposed to launch a public works program initially of about Rs 15 billion (equivalent to about ½ per cent of GDP) by enhancing the overall development allocation in order to generate more employment and income.

The question is will such a program reduce poverty and to what extent. It essentially tantamounts to a fiscal stimulus involving enhancement in the level of public expenditure and a corresponding rise in the size of the fiscal deficit. Here again, the ISPM Model is used to simulate the consequences of an increase in development expenditure, in relation to the base scenario, of ½ per cent of the GDP in 1999-2000 rising to 1 per cent of the GDP in 2002-03.

Results of the simulation are perhaps counter-intuitive and unexpected (see Table 10). It appears that a policy of raising development expenditure leads eventually to more, and not less, poverty. Initially the impact is favourable as the income enhancement and unemployment reduction

Indicators	Unit [?]	1999- 2000	2000- 2001	2001- 2002	2002- 2003
Development Expenditure	% of GDP	½	¾	1	1
GDP Growth Rate	%	¼	½	½	½
Unemployment Rate	%	0	-¼	-¼	-½
Budget Deficit	% of GDP	½	¾	1	1
Rate of Inflation	%	½	½	¾	1
Current Account Deficit	%	0	¼	¼	½
Incidence of Poverty	% of Popn	0	-¼	0	¼

[?] rounded off to the nearest quarter percentage point
Source: SPDC ISPM Model

effects dominate over the rise in prices. However, by 2002-03, the higher inflation outweighs the positive effects and poverty is higher.

Given that the rise in prices

is primarily the consequence of a larger fiscal deficit we simulate next the consequences of a strategy of financing the higher development expenditure not by borrowings but by higher mobilisation of tax revenues such that the fiscal deficit remains unchanged and there are no directly unfavourable implications on inflation. Results of simulation in this case are

TABLE 11					
CONSEQUENCES OF A FISCAL STIMULUS INVOLVING INCREASE IN DEVELOPMENT EXPENDITURE FINANCED BY HIGHER TAX REVENUES					
<i>(Difference with respect to the 'Business as Usual' Scenario)</i>					
(%) [?]					
Indicators	Unit [?]	1999- 2000	2000- 2001	2001- 2002	2002- 2003
Development Expenditure	% of GDP	½	¾	1	1
Tax Revenues	% of GDP	½	¾	1	1
GDP Growth Rate	%	¼	½	½	½
Unemployment Rate	%	0	-¼	-¼	-½
Budget Deficit	% of GDP	0	0	0	0
Rate of Inflation	%	0	-¼	-¼	-¼
Current Account Deficit	% of GDP	0	¼	½	½
Incidence of Poverty	% of Popn	-¼	-¾	-1¼	-2

[?] rounded off to the nearest quarter percentage point
Source: SPDC ISPM Model

given in Table 11. The

results indicate that if a strategy of raising development expenditure is accompanied by correspondingly higher resource mobilisation so as to keep the fiscal deficit unchanged then such a strategy can have considerable success in reducing poverty. The projected level of poverty in 2002-03 is lower by 2 percentage points in relation to the base scenario. However, the increase in current account deficit by ½ percentage point of GDP raises the issue of feasibility of implementation of such a strategy.

V A POVERTY CONTAINMENT STRATEGY

Based on the earlier analysis, we are finally in a position to develop a poverty containment strategy. Such a strategy aims at keeping poverty constant at the base year level of 1999-2000. Elements of this

strategy can be embodied into what can be referred to as the ‘best case’ scenario. This scenario assumes that there is no balance of payments constraint and that the resulting current account deficits are financed either by further debt relief beyond December 2000 or by larger external financing organised through a renegotiated IMF program. It is also assumed that higher development expenditure is achieved largely through additional resource mobilisation.

Beyond these strategic elements, the ‘best case’ scenario embodies the following:

- (i) presence of a new IMF program with second round of debt relief, absence of capital controls, attractive investment and privatisation policies, settlement of the longstanding IPP dispute all lead to a rapid restoration of foreign investor confidence and rapid growth in foreign direct investment. Simultaneously, domestic investment also picks up aided by the fall in interest rates
- (ii) restoration of buoyancy in home remittances due to an exchange rate policy which minimises the differential between the official and the kerb rate and due to a rise in wage incomes of expatriate workers in the Middle East (consequent to the increase in oil revenues of OPEC)
- (iii) moderation in prices of imports, especially as oil prices fall from the peak levels attained in late 1999 and early 2000
- (iv) aggressive policies for resource mobilisation which lead to an increase in the overall tax-to-GDP ratio by almost 2 percentage points by 2002-03. This is achieved by broad-basing of the GST to retail trade and services, development of the agricultural income tax, indexation of fixed petroleum development surcharge rates to inflation, more effective exploitation of the revenue potential of the urban property tax, major tax reforms which lead to simplification of the tax system and fundamental improvements in tax administration by 2002-03
- (v) maintenance of the overall non-tax-to-GDP ratio by greater cost recovery in major economic services like irrigation and highways and in tertiary social services like higher

- education; restoration of profitability of key public enterprises like WAPDA through improvements in operational efficiency and appropriate tariff reforms
- (vi) containment of costs of civil administration through recruitment bans and rightsizing; continued reduction in the share of defence expenditure in GDP by linking increase in allocations only to inflation
 - (vii) reduction in the share of interest payments in GDP of 1 percentage point by 2002-03, achieved by the overall deficit reduction and domestic debt retirement (due to debt relief) which reduces the pressure of government borrowing on the banking system and enables a reduction in interest rates
 - (viii) a rise in tax-to-GDP ratio of 2 percentage points and reduction in current expenditure by 2 percentage points of the GDP creates fiscal space of 4 percentage points of GDP, which enables increase in the share of development expenditure in the GDP by 2 percentage points alongwith a reduction in fiscal deficit by 2 percentage points of the GDP
 - (ix) successful privatisation which generates Rs 110 billion (approximately \$ 2 billion) by 2002-03, used primarily for debt retirement
 - (x) the faster increase in the tax-to-GDP ratio enables larger fiscal transfers to the provincial governments leading thereby to larger outlays on education and a faster increase in the human capital endowments of the labor force.

The key macroeconomic and poverty indicators in the ‘best case’ scenario are presented in Table 12. The economy will need to achieve the following: average growth rate of about 5¾ per cent, average inflation rate of 4½ per cent and a fall in the unemployment rate by over one percentage point over the next three years, for the incidence of poverty to be contained at its present level. Achievement of these macroeconomic targets will require the design and implementation of wide ranging reforms which tackle the many structural problems of the economy. Success in economic revival and in poverty alleviation will require the highest standard of economic governance. This is one of the greatest challenges that Pakistan’s leadership faces today.

TABLE 12
PROJECTIONS OF MACROECONOMIC INDICATORS AND
INCIDENCE OF POVERTY IN THE 'BEST CASE' SCENARIO

Indicators	Unit [?]	1999- 2000	2000- 2001	2001- 2002	2002- 2003
GDP Growth Rate	%	4½	5¼	5¾	6¼
Unemployment Rate	%	6¾	6¾	6½	6
Level of Fixed Investment	% of GDP	13	14¼	15¾	16¾
Level of National Savings	% of GDP	12¼	13¾	15½	16½
Current Account Deficit	% of GDP	2¼	2	1¾	1¾
Budget Deficit	% of GDP	5½	4½	4	3½
Tax Revenues	% of GDP	12½	13½	14	14½
Development Expenditure	% of GDP	3¼	4	4½	5
Rate of Inflation	%	5¼	5	4½	4
Incidence of Poverty	% of Popn	34¾	35¼	35¼	34¾
<i>Difference with respect to 'Business as Usual' Scenario</i>					
GDP Growth Rate	%	0	1	1¼	1½
Unemployment Rate	%	0	-¼	-¾	-1½
Level of Fixed Investment	% of GDP	0	1	1¾	2¼
Level of National Savings	% of GDP	0	1	1¾	2
Current Account Deficit	% of GDP	0	0	0	¼
Budget Deficit	% of GDP	0	-¾	-1	-1¼
Tax Revenues	% of GDP	0	1	1½	2
Rate of Inflation	%	0	-½	-1¾	-2½
Development Expenditure	% of GDP	0	¾	1¼	1½
Incidence of Poverty	% of Popn	0	-1¼	-3½	-6¼

? rounded off to the nearest quarter percentage point

Source: SPDC ISPM Model

REFERENCES

- Akhtar, S., and Mansoor Ahmed, “*Modeling Poverty Trends in Pakistan: Some Additional Empirical Evidence*”, (August 1999), Poverty and Gender Research Unit, Research Report No.27, Social Policy and Development Centre.
- Ghaus-Pasha, A., and Asad U. Sayeed, “*Has Poverty Returned to Pakistan?*” (1996), Poverty and Gender Research Unit, Conference Paper No.20, Social Policy and Development Centre.
- Ghaus-Pasha, A., and Haroon Jamal, “*Alarming Level of Poverty in Pakistan*”, (March 20, 2000), Poverty and Gender Research Unit, News Paper Article published in The News, Business and Finance Review, Social Policy and Development Centre.
- Human Development in South Asia: The Crisis of Governance (1999), The Mahbub ul Haq Human Development Centre, Oxford University Press.
- Kemal, A.R., and R. Amjad, “*Macroeconomic Policies and their Impact on Poverty Alleviation in Pakistan*”, (Spring 1997), Pakistan Development Review, 36(1), pp.39-68.
- Pasha, H.A., Sumaira Jaffery and Hari Ram Lohano, “*Evaluation of Social Safety Nets in Pakistan*”, (March 2000), Poverty and Gender Research Unit, Research Report No.32, Social Policy and Development Centre.
- Pasha, H.A., M. Aynul Hasan, Aisha Ghaus-Pasha and M. Ajaz Rasheed, “*Integrated Social Sector and Macroeconomic Model for Pakistan*”, Pakistan Development Review, (Winter 1986), 35(4), pp.567-79.
- United Nations Development Programme, Poverty Report, (1997-98).
- Qureshi, S., “*Profile of Poverty in Pakistan*”, (1998-99), Pakistan Institute of Development Economics.
- Social Development in Pakistan: Social Development in Economic Crisis*, (1999), Social Policy and Development Centre Book, No. 03., Oxford University Press, Karachi.

APPENDIX - I
THE INTEGRATED SOCIAL POLICY AND
MACROECONOMIC PLANNING (ISPM) MODEL OF SPDC

THE NEED FOR AN INTEGRATED MODEL

Historically, Pakistan's development planning models have not explicitly recognized the interdependence between social sector development, intergovernmental revenue-sharing transfers and the macroeconomy. The macroeconometric model of the Pakistan Institute of Development Economics was developed primarily to address the policy issues facing the macroeconomy and was updated in 1992 to include 97 equations. The model developed by the Applied Economics Research Centre explicitly incorporates linkages between federal and provincial governments, but its scope is limited to resource mobilization.

Recognizing this reality, the Social Policy and Development Centre (SPDC) has identified a pressing need for Pakistan to develop a macroeconomic model that explicitly incorporates the impact of public expenditure, which is close to 30% of the GDP. SPDC has been working diligently over the past few years to develop just such a model.

STRUCTURE AND LINKAGES OF THE MODEL

The Social Policy and Development Centre has developed a unique economic model which can be used as an effective planning tool for social sector development. This model actually integrates the social, public finance and macroeconomic dimensions of the economy under one interrelated system.

Called the Integrated Social Policy and Macroeconomic Planning model (ISPM), the model provides the basic framework for analyzing the implications of SAP and numerous other economic and non-economic policy decisions on the long-term development of Pakistan's social sectors.

The model is highly disaggregated and covers all three levels of government. It is capable of predicting outcomes in great detail, even at the level of individual social service provision. Such a disaggregation of the model at the provincial level in terms of revenues and expenditures on social services (e.g., schools, hospitals, doctors, teachers, enrollments, etc.) is required to analyze the impact of SAP on the macroeconomy.

The model is based on consistent national level data from 1973 onwards and is estimated by single equation regression techniques. It consists of 265 equations, of which 129 are behavioural and the rest

are identities. These equations are subsumed into 22 interrelated blocks. All the blocks, along with their size in terms of equations and identities, are listed in **table A1**.

TABLE A1
INTEGRATED SOCIAL POLICY AND MACROECONOMIC
PLANNING (ISPM) MODEL

	Total Number of Behavioural Equations	Total Number of Identities	Total Number of Equations
A Macro Economic Production Block	6	14	20
B Macro Input Demand Block	7	10	17
C Macro Economic Expenditure Block	10	10	20
D Federal Revenue Block	5	7	12
E Federal Expenditure Block	9	8	17
F Federal Deficit Block	1	3	4
G Provincial Revenue Block	7	5	12
H Provincial Expenditure Block	12	5	17
I Provincial and Total Budget Deficit	0	3	3
J Local Revenue Block	3	4	7
K Local Expenditure Block	10	6	16
L Trade Block	5	4	9
M Monetary Block	1	1	2
N Price Block	4	5	9
O Human Capital Index Block	27	27	54
P Public Health Index Block	12	11	23
Q Index of Economic Infrastructure Block	0	4	4
R Index of Fiscal Effort Block	0	4	4
S Poverty	2	3	5
T Gender Inequality	1	1	2
U Educated Unemployment	6	0	6
V Malnutrition	1	1	2
TOTAL	129	136	265

Although the model is broadly Keynesian in spirit, the specification of individual blocks and equations are based on a pragmatic approach. It captures the reality and non-market clearing aspects of

Pakistan's economy. Thus, the macroeconomic block is essentially supply driven. In addition, the social sector indicators are also resource determined.

The model is both dynamic and rich in specification. The nature of linkages across the model varies. In some cases, the linkage is simultaneous, in which equations in a block are not only determining equations in another block, but are also determined by them. Examples include the linkages between the macro production and input block, the production and macro expenditure blocks and the fiscal revenues and expenditure blocks. These simultaneous equations may be behaviourally determined or may just be identities. The broad links of the model can be traced as follows.

Macroeconomy ? Public Finance

The key link there is that developments in the macroeconomy influence the growth of the tax bases (including divisible pool taxes) and thereby affect the fiscal status of different governments. Also, the overall rate of inflation in the economy affects the growth of public expenditure.

Public Finance ? Social Sector Development

The availability of resources, both external and internal, determines the level of development and recurring outlays to social sectors by different levels of government, especially provincial and local.

Social Sector Development ? Macroeconomy

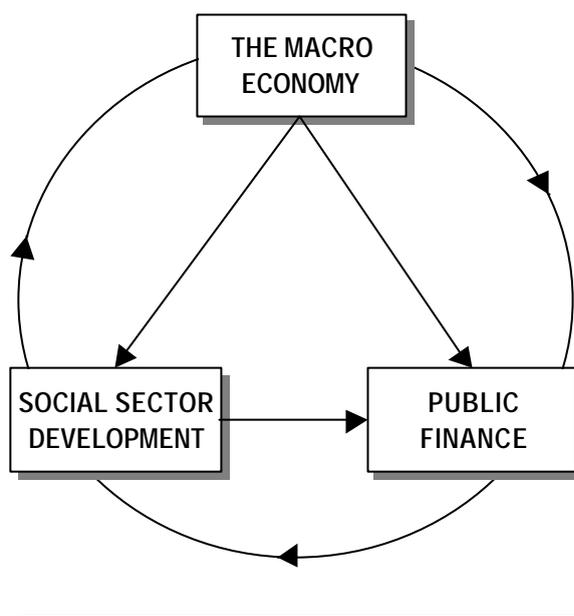
Higher output of educated workers and their entry into the labour force raises the human capital stock and could contribute to improvements in productivity and a higher growth rate of output in the economy. Similarly, an improvement in public health standards may also have a favourable impact on production.

Public Finance ? Macroeconomy

The level of government expenditure could exert a demand side effect on national income, while the size of the overall budget deficit of the federal and provincial governments (combined) influences the rate of monetary expansion and consequently the rate of inflation in the economy.

CHART A1

BASIC STRUCTURE OF THE MODEL



Social Sector Development ? Public Finance

A vital link in the model is between the rate of social sector development and the state of public finances, especially of provincial governments, in terms of implications for the level of debt servicing and recurring expenditures.

Macroeconomy ? Social Sector Development

Demographic and other socioeconomic changes affect the demand for social sector facilities such as schools and hospitals, and thereby influence the level of social sector outputs.

Linkages within macroeconomics, fiscal and social sector blocks

Apart from these broad linkages among different modules, there are also links between different blocks within each module. The flow chart outlines the intersectoral linkages within the model (chart A1).

An example of a major linkage within the macro module is the two-way linkage to and from the macro production block and macro input blocks. This link is due to the dependence of sectoral value added on the factors of production and input demand functions on the value of production. Macro production determines macro expenditure, as private consumption is influenced by income.

The two-way link between the macro production block and the trade block is due to the fact that the value of imports and exports determines and is determined by economic production activity.

Important linkages in the fiscal module consist of the simultaneous dependence of revenues of various levels of government and their expenditures. Non-tax receipts of governments have been made a function of the recurring expenditure on particular services via cost-recovery ratios. Similarly, the level of government expenditure is affected by the government's level of resource generation.

Important vertical links between levels of government include fiscal transfers in the form of divisible pool transfers, non-development grant requirements (in line with the feasible level of decentralization) from provincial to local governments. The link between the budget deficits of the federal and provincial governments are their revenues and expenditures is obvious.

FORECASTING AND POLICY ANALYSIS TOOL

Given the richness in structure and the complex web of interrelationships and interactions embodied within it, the ISPM model can be used first as a forecasting tool, both for the medium- and long-term, and, second, for undertaking policy simulations to analyze the consequences of particular policy actions by the federal or others levels of government.

For example, if the federal government decides to pursue a policy of higher tax mobilization and opts for a rigorous fiscal effort, the model can forecast the impact, not only on federal finances, but also on the fiscal status of the provincial governments. In this scenario, it could also forecast key macroeconomic magnitudes such as growth in the gross domestic product and the inflation rate. With respect to other specific policy issues, the model can also:

- ! provide projections of the quantum of revenue transfers to the provincial governments by the federal government, both short-term and medium-term, under different scenarios;
- ! determine the impact of different rates and patterns of economic growth on provincial tax bases and revenues;
- ! determine the impact of changes in provincial expenditure priorities on fiscal status, levels of service provision and the overall macroeconomy;
- ! determine the impact of education expenditures by provincial governments on sectoral inputs (schools, teachers), enrollments, outputs, entry into the labour force and literacy rates;
- ! determine the impact of health expenditures by provincial governments on sectoral inputs (beds, rural health centres, doctors, nurses, paramedics) and on the health status of the population;
- ! determine the impact on higher levels of resource mobilization by provincial governments on federal transfers, sectoral levels of expenditure and fiscal status; and
- ! determine the impact of SAP-type programs on the level and quality of service provision and on the financial position of provincial governments.

**MACROECONOMIC
DEVELOPMENTS AND POVERTY**

By

Hafiz A. Pasha

**SOCIAL POLICY AND DEVELOPMENT CENTRE
KARACHI**

April 2000

