RESEARCH REPORT SERIES

PAKISTAN INSTITUTE OF DEVELOPMENT ECONOMICS

No. 50

Application of "A Short-term Model for Plan-
ning Fiscal and Monetary Policy" in Pakistan.

By

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APPLICATION OF A SHORT-TERM MODEL

FOR PLANNING FISCAL AND MONETARY POLICY'

IN PAKISTAN

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I. INTRODUCTION

Planning for economic development and growth has become
a common phenomenon by now. A large number of models have been
constructed. The focus of attention in almost all theoratic
constructions of planning and growth models, however, has been
the famous 'trio' of capital, labour and technology. The models
have been developed almost invariably in 'real' terms.
Financial aspects of planning and development have been
discussed very little either because of inherent difficulties
in saying anything on the subject which would hold true for
sometime or because the models for planning fiscal and monetary
policy are not only very ' aggregative' type but also crude
and much less sophisticated when compared with models in real
terms. Yet, when it comes to actual implementation of the task
of planning for economic growth, monetary and fiscal measures
are perhaps the most influential policies, particularly in the
capitalistic and mixed-type economies. Not only the government
must find means to finance its ordinary operations and develop-
ment plans, but to achieve given targets in the private sector
appropriate fiscal and monetary policies must also be introduced
with full consideration of the situation that developes out
of main targets of economic planning so that the decisions
are within a tolerable degree of accuracy.

During the past few years there have been some
studies which contain interesting discussions on financial
aspects of economic development, $\diagup$1, 8, 10, 12$\diagup$. It is
only recently, however, that Professor Bent Hensen has
addressed himself specifically to the problems of framing
fiscal and monetary policy on a short-term basis $\diagup$9$\diagup$. His
model is a simple but an ingenious device in which only a
small amount of information need to be fed to frame
appropriate fiscal and monetary policy for the future year.

In this paper we have sought the application of
this model to the Pakistan economy with a view to seeing,
(a) if this simple device can be made full use of in the
institutional set-up of this country, (b) what improvements
in the budgeting and planning methodologies need to be
introduced to make them more and more policy oriented and
(c) what gaps in data are shown so that they may be plugged-in
to make more satisfactory use of such devices in future years.

In the next section we shall present a comprehensive
summary of the model in symbols explained in appendix 'A'
at the end of this paper.

II. SUMMARY OF THE MODEL

The model deals with the implications of changes in
some macro-economic variables in the market for goods and
services for decision making in fiscal and monetary fields.
The policy operates on two strategic variable: private
disposable income and the liquidity position of the
commercial banks which are assumed to be decisive for
private consumption and private investment respectively.

The model is built on a few definitional balance
indentities and some behavioural equations and was
originally used for planning fiscal and monetary policies

To devise policies, say for the year 1965-66, the model assumes that all information about 1964-65 is available at the beginning of the fiscal years 1965-66. [1]

The balance of resource identities for 1965 in terms of total availability and total use may be presented as follows:-

$$\overline{A} = \overline{Y} + \overline{L}_f \quad \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots (1)$$

$$\overline{U} = \overline{C}_r + \overline{C}_p + \overline{I}_r + \overline{I}_p + \overline{K}_r + \overline{K}_p \quad \dots\dots (2)$$

$$\overline{U} - \overline{A} = 0 \quad (\text{ the resource gap }) \dots\dots\dots (3)$$

Since in actual (ex-poste) outcome the total availability of resources must be equal to their total use, the gap, defined as $\overline{U}$ minus $\overline{A}$, is equal to zero. These identities are assumed to have been filled-in by actual statistics. The framework for planned, un-balanced (ex ante) estimates for 1966 can also be stated in the same way :-

$$A = Y + L_f \quad \dots\dots\dots\dots\dots\dots\dots\dots\dots .(4)$$

$$U = C_r + C_p + I_r + I_p + k_r + k_p \quad \dots\dots\dots\dots (5)$$

$$U - A = g \quad (\text{the resource gap }) \dots\dots\dots\dots (6)$$

The main problem is to find estimates for different term in identities (4) and (5) and arrive at an ex ante resource gap in 1966 shown by (6). In the case of Turkey, as illustrated by Iensen, estimates were got in the following way:

It was assumed that GNP in 1966 (Y) was equal to GNP in 1965 ($\overline{Y}$) plus 7 % which was the plan target -- i.e.,

$$Y = (1 + .07) \overline{Y} \dots\dots\dots\dots\dots\dots\dots (7)$$

L_f was assumed to be the maximum foreign finance available for the year 1966.

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[1] For the fiscal years 1964-65 and 1965-66 we shall simply use 1965 and 1966 respectively.

Total available resources in 1966, then, were:-

$$A = Y + L_f \quad \ldots \ldots \ldots \ldots \ldots \ldots \ldots \quad (8)$$

k_r and K_p were assumed to have 'normal' change from 1965 to 1966.

Private investment in 1966, I_r, was the target variable and the problem for monetary policy was to make sure that I_r target would be fulfilled.

C_r was forecast via a forecast of private disposable income on the assumption of unchanged tax and social benefit legislation in the following way:

Given the 1966 GNP, Y, as above; direct and indirect taxes, T_p ; direct and indirect subsidies; B_p , public sector income from property, y_p ; and public sector's net interest payments, i_p, in 1966 can be forecast on the assumption of no change in these variables from their respective proportion to GNP in 1965. So, the public sector disposable income in 1966, y_p^d , on the assumption of unchanged taxes and social benefit legislation and assumed behaviour will be equal to:

$$y_p^d = T_p + y_p - B_p - i_p \quad \ldots \ldots \ldots \ldots \ldots \quad (9)$$

Private disposable income in 1966, y_r^d , then follows as a residual :

$$y_r^d = Y - y_p^d \quad \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots (10)$$

Assuming c_r to be the private sector's consumption ratio, obtained in the previous year or through some other source, and expected to hold in 1966, forecast for total private consumption in 1966 follows from:

$$C_r = c_r \cdot y_r^d \quad \ldots \ldots \ldots \ldots \ldots \ldots \ldots .(11)$$

Now, we have all the information for different terms
of identities (4) and (5) which in turn furnish us with an
estimated, ex ante, gap of resources on the assumption
of unchanged tax and social benefit legislation.

Now, if all the targets, such as I_p , C_p and I_r
etc., are inflexible[2]/and stock changes are disregarded,
the balance of resources in (4) and (5) has to be achieved
by an adjustment of private consumption, C_r, through a
change in tax legislation etc.

Suppose that the total use of resources in 1966, U,
turns out to be greater than the total availability of
resources in 1966, A, and the gap is equal to g;
U - A = g . If g is the gap then the adjusted
(permissable) private consumption for 1966 will be :

$$C_r^a = C_r - g \dots\dots\dots\dots\dots\dots\dots (12)$$

On the assumption of give propensity to consume,
the adjusted (permissable) private disposable income
follows:

$$C_r^a / c_r = y_r^{ad} \dots\dots\dots\dots\dots\dots (13)$$

The difference between expected GNP in 1966, Y, and
the permissable private disposable income in 1966, y_r^{ad} ,
will yield the estimates about the permissable public sector
disposable income,

$$y_p^{ad} = Y - y_r^{ad} \dots\dots\dots\dots\dots (14)$$

which is necessary to keep the economy in macro-economic
balance, given all targets and the expectations about the
foreign aid and loans.

Now, comparing the permissable public sector
disposable income for 1966 as in (14) with expected

2/ It is not necessary to make this assumption because
in practice these targets may also be varied but it
would make no difference to essential features of the
model. The assumption is made just for the sake of
simplicity and clear illustration of the problem
being developed here.

public sector disposable income for 1966 as in (9) -
estimated on the basis of unchanged tax and social benefit
legislation - will give us starting point on which dicisions
about the changes necessary in tax and social benefit
legislation should be based. On the assumption that all
targets are fulfilled, stock changes turn out to be normal
and that the foreign exchange expectations are realized,
the fiscal policy, devised as above, would ensure the
balance of resources and permits GNP to grow according
to the Plan.

In the next phase of the model, forecasts about
the sectoral flow-of-funds - i.e., the net credit given
by one sector to another, are made. The sectors identified
are: Central bank, commercial banks, public sector,
private sector and foreign sector. We shall summarize
below just a part of the procedure followed. We shall
also assume in what follows that policies have been
devised which will ensure private and public sector
disposable incomes as appearing in (14).

Now, the permissable private sector disposable income
minus adjusted private consumption will be equal to
private sector savings in 1966,

$$y_r^{ad} - c_r^a = S_r \quad \ldots \ldots \ldots \ldots (15)$$

If we deduct planned private investment in
1966, I_r, from S_r, we get private sector's lending
in 1966, L_r,

$$S_r - I_r = L_r \quad \ldots \ldots \ldots \ldots (16)$$

Similarly, in the public sector, if from y_p^{ad}
we deduct C_p we get the public sector's savings, S_p.
And, if from S_p we deduct planned public sector invest-
ment in 1966, I_p, we get public sector's lending,

Since the model divides the whole economy into five sectors named above, private plus public sectors' net lending must add up to foreign aid and loans in 1966 plus net loans of private and public sectors from the Central bank and commercial banks necessary to carry out the plan targets.

To construct the flow-of-funds table, now we have already got estimates for L_r, L_p and L_f . The other two estimates of total net lending and their breakdowns are got on the bases of certain behaviouristic assumptions and as residuals.

The flow table in the modle presents a general picture of the net credit flows in the country and, perhaps more importantly, it forecasts change in the liquidity position of commercial banaks, a knowledge of which is so necessary to give us appropriate perspective within whioh the monetary policy in the next year should be framed.

The task of detailed discussions on how the flow matrix can be built, will be taken up in the next section where we construct such a table for the Pakistan economy. We shall also spell out which assumptions of the model were not necessary to make in the context of Pakistan and what other ad hoc considerations were made when the application of the model was carried through.

III. APPLICATION OF THE MODEL TO PAKISTAN

The balance of resource identities as an ex poste outcome for 1964-65 turn out to be:

$$\overline{A} = \overline{Y} + L_f \ldots \ldots \ldots \ldots \ldots \ldots (1)$$

or, $47836 = 45540 + 2296 \ldots \ldots \ldots \ldots (1-a)$

and,

$$\bar{U} = \bar{C}_r + \bar{C}_p + \bar{I}_r + \bar{I}_p \ \ldots \ldots \ldots \ (\ 2)$$

or, $47836 = 35330 + 5094 + 3181 + 4231 \ \ldots \ldots \ (2\text{-}a)$

The resource gap in this case is zero, of course.[3]

MEASUREMENT OF THE GAPS

III - (a) The main problem is to find estimates for different terms of identities (4) and (5) as in section I and arrive at an ex ante resource gap (6) for 1966. This was done in the following way :

It was assumed that GNP in 1966 will be equal to GNP in 1965 ($\bar{Y}$) plus 6.5% of $\bar{Y}$. This assumption is made by the Planning Commission.[4] On this assumption the expected GNP in 1966 turns out to be, $Y = 48500$. The total amount of external resources that the Planning Commission expects for 1966 is, $L_f = 2820$. The aggregate amount of available resources in 1966, then, turns out to be:

$$A = Y + L_f$$

or, $51320 = 48500 + 2820 \ \ldots \ldots \ldots \ (1\text{-}b)$

This completes estimates for identity (4).

Estimates for expected total investment in public and private sectors in 1966 are found to be 4700 and 4561 million rupees respectively. Private sector's investment in 1966 is a target variable. Estimates for public consumption in 1966 are also given by the Commission, $C_p = 5525$.

3/ All figures are in millions of rupees and current prices unless otherwise stated. Background data for different estimates and their respective sources are given in appendix 'B'.

4/ $\underline{/}$ 4, p: 19 $\underline{\smash{/}}$.

Estimates for private consumption in 1966, c_r , were made via a forecast of private disposable income on the assumption of unchanged tax and social benefit legislation in the following way:

Public sector's disposable income in 1964-65, $\bar{y}_p^d$, is found to be 5157 in government budgets. Public sector's disposable income in 1965-66, y_p^d , on the assumption of unchanged tax and social benefit legislation is equal to 5490. Private disposable income in 1966 follows as a residual :

$$Y - y_p^d = y_r^d$$

or,   48500 - 5490 = 43010

The private consumption ratio obtained in the year 1965 was approximately equal to .88. Application of this ratio to the expected private disposable income in 1966, yields estimates for private consumption in 1966,

$$C_r = .88 \ (43010) = 37848$$

Now we have all information for different terms of identities (4) and (5). This gives measures of total availability and uses of resources as:

$$A = Y + I_f$$

or,   51320 = 48500 + 2820 . . . . (1-b)

and,

$$U = C_r + C_p + I_r + I_p$$

or,   52599 = 37848 + 5490 + 4561 + 4700. (2-b)

The ex ante gap of resources, which we shall call the _primary gap_, on the assumption of unchanged tax and social benefit legislation, turns out to be:[5]

$$U - A = g$$

or,   52599 - 51320 = 1279

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[5] Stock changes are disregarded because the year to year changes in stocks have been negligible, 4,p: 62; 2,p:179

(b)   Since there is a positive gap, i.e. an inflationary gap, in the uses and availability of resources in 1966, private consumption in 1966 must be accordingly adjusted downward. The adjusted private consumption, C_r^a , will then be:

$$C_r \ - \ g \ = \ C_r^a \qquad \text{or,}$$
$$37848 \ - \ 1279 \ = \ 36569$$

Now, on the assumption of a given propensity to consume, the permissable (adjusted) private disposable income follows from:

$$C_r^a \ / \ c_r \ = \ y_r^{ad} \qquad \text{or,}$$
$$36569/ \ .88 \ = \ 41555$$

The difference between the GNP expected in 1966 (48500) and the permissable (adjusted) private disposable income in 1966 (41555) will tell us about the public disposable income in 1966 which is necessary to keep the economy in macro-balance, given all targets and restrictions on the maximum foreign finance ;

$$Y \ - \ y_r^{ad} \ = \ y_p^{ad} \qquad \text{or,}$$
$$48500 \ - \ 41555 \ = \ 6945$$

Comparing the necessary or the desirable public sector income in 1966 (6945) with the projected public sector income at unchanged tax legislation (5490) will furnish us with a <u>secondary gap(i)</u>, g' ,

$$y_p^{ad} \ - \ y_p^d \ = \ g' \qquad \text{or,}$$
$$6945 \ - \ 5490 \ = \ 1455$$

This gives us starting point for decisions about changes necessary in the tax legislation. However, this is not the gap that concern us most, particularly if changes in tax legislation have already been introduced as in the case of Pakistan.

In the government budgets, for Center and for the two Regions, we have estimates for public disposable income expected in 1966 after changes in tax legislation have

this with the desirable public disposable income (6945) necessary inorder to keep the economy in macro-balance, given all targets, there is still a gap of 1425 million rupees (= 6945 - 5520). This secondary gap (ii) of 1425 million rupees is much more important because it exists even after tax legislation has been introduced and on the assumption that there shall be no short fall in the expected total tax yields in 1966. This simply means that the altered tax and social benefit legislation does not close the secondary gap (ii) and does not ensure the economy a macro-balance of uses and availability of resources during the year under study.

One basic contribution of this model, therefore, is that it points to inadequacy of decisions about the changes necessary in tax and social benefit legislation. If the changes were made in the light of the gaps shown by the model, it would have ensured a macro-balance of uses and availability of resources, given all targets and restrictions on maximum foreign finance that may be available to the country.

IV. THE FLOW OF FUNDS ESTIMATES

To illustrate the implications of target setting and planning decisions for monetary policy we shall assume that there is no resource gap and the balance has been achieved (ex ante = ex poste). In other words, we shall assume that the public sector has been successful in raising 6945 million rupees for 1966 to ensure a macro-balance of resources. We shall now forecast flow of funds in the balanced 1966 plan.

(a) Permissable private disposable income in 1966 (41555) minus adjusted private consumption in 1966 will be equal to private savings in 1966,

$$y_r^{ad} - c_r^a = s_r$$

or, $41555 - 36569 = 4986$

Now, if we deduct private planned investment in 1966 from private savings in that year we get estimates for private sector's net lending, L_r , in 1966,

$$S_r - I_r = L_r$$

or, $4986 - 4561 = 425$

(b)   Similarly for the public sector, if we deduct C_p from y_p^{ad} , we get public sector's savings for 1966,

$$y_p^{ad} - C_p = S_p$$

or, $6945 - 5490 = 1455$

Now, if from S_p we deduct public sector's planned investment in 1966, I_p, we get public sector's net lending,

$$S_p - I_p = L_p$$

or, $1455 - 4700 = -3245$

Since net lending is negative, it will mean borrowing of this sector.

(c)   We have already noted that the total amount of external finance that the Planning Commission expects for the year 1966 is,

$$L_f = 2820$$

This completes information for three aggregate estimates for public, private and foreign sectors' lending.

(d)   In order to construct a balanced table of net credit flows we shall divide the whole economy into five sectors; namely, central bank, commercial banks or scheduled banks as in Pakistan, private sector, public sector and foreign sector. Since the figures shown in the flow matrix are net flows - i.e., the net credit given by one sector to another, it is, after a change of sign, symmetric around the main diagonal which only contains zero.

1966 - FLOW TABLE

		1	2	3	4	5	
	TO FROM	Central Bank	Scheduled Banks	Public Sector	Private Sector	Foreign Sector	Total
1	Central Bank	0	(L_{12}) 813.32	(L_{13}) -581.51	(L_{14}) 273.04	(L_{15}) -112.00	(L_c) 392.85
2	Scheduled Banks	$(-L_{12})$ -813.32	0	(L_{23}) -8.29	(L_{24}) 512.06	(L_{25}) -63.30	(L_s) -392.85
3	Public Sector	$(-L_{13})$ 581.51	$(-L_{23})$ 8.29	0	(L_{34}) -1093.10	(L_{35}) -2741.70	(L_p) -3245.00
4	Private Sector	$(-L_{14})$ -273.04	$(-L_{24})$ -512.06	$(-L_{34})$ 1093.10	0	(L_{45}) 97.00	(L_r) 425.00
5	Foreign Sector	$(-L_{15})$ 112.00	$(-L_{25})$ 63.30	$(-L_{35})$ 2741.70	$(-L_{45})$ -97.00	0	(L_f) 2820.00
	Total	$(-L_c)$ -392.85	$(-L_s)$ 392.85	$(-L_p)$ 3245.00	$(-L_r)$ -425.00	$(-L_f)$ -2820.00	0

As already stated, the flow table given here presents a detailed picture of the net credit flows in the country and helps us arrive at a forecast of changes in the liquidity position of commercial banks as a consequence of certain planning decisions which are incorporated in the model illustrated here. It seems necessary to explain the procedure with which estimates were arrived at and how, in general, the table was constructed.

The main sectors of the table have been numbered 1 to 5. Each cell is assigned a symbol which explains itself; i.e., L_{12} means net lending of the Central Bank to the Scheduled Banks and L_c means total net lending of the Central Bank to all the other four sectors and so on. The marginal totals of L_p, L_r, and L_f are the same as derived above. Forecast for figures in other cells are made in the following way :

Having got the estimates for the maximum foreign finance availability in 1966, L_f the next requirement is to obtain break-down which is not difficult because foreign capital movements are controlled by the government and estimates for different flows are available in official and semi-official documents. We shall explain each of them in detail here.

(L_{15})   Balance sheets of the State Bank, which is the Central Bank, of Pakistan give year to year account of the total amount of foreign assets and liabilities both in the Issue and Banking Departments. The net change in the two in some previous years has been a small negative maount. The figures for 1965 showed that the net claim of the State Bank of Pakistan, henceforth to be called the SBP, on the foreign sector changed by -112 million rupees. We have assumed that this amount of negative net claim will hold true for 1966.

(L_{25})   Inorder to obtain estimates for L_{25}, first we fitted a simple regression line to foreign sector's percentage share in scheduled banks' total deposits overtime and found it to

rate. Since there has been no change in scheduled banks loans and advances to the Foreign Sector, taking 10.75% of increase in total deposits over the year under study yieldes estimates for net increase in scheduled banks borrowings from the foreign sector during that period.

(L_{35})   This is an estimate, as given in the government budget documents $\underline{/}3\underline{}$, of public sector's net foreign borrowings and other receipts less net debt retirement and other payments for the year 1966.

(L_{45})   Estimates for this follow as a residual from:

$$L_f - (L_{15} + L_{25} + L_{35})$$

The estimates for L_{45} found as a residual are much less than the Planning Commission's estimates arrived at independently $\underline{/}4$, pp: 75-76$\underline{}$. We shall discuss reasons for this discrepency in appendix B where we state the source of L_f estimates and carry out an evaluation of data in general.

(L_{34})   Budget details of the Center and the two Regions given in budget documents $\underline{/}3$, 5, 6, and 7$\underline{}$ include estimates of public sector's expected borrowings from the private sector during the year 1966. The figure included here is the sum of public sector's expected borrowings net of debt retirement, net interest receipts and net increase in pension, insurance and other funds.

(L_{14})   The only direct credit relations between the SBP and the private sector consists in the latter's holding of bank notes. In the case of Turkey, Hensen assumes that notes in circulation will increase directly proportional to expected increase in GNP which may be interpreted as Keynesian transaction motive equation. The proportionality assumption is more or less true in Pakistan also. Here, GNP in 1966 is assumed to increase by 6.5%. However, we found notes in circulation to have increased 5.13% annually over the last ten years. L_{14} was projected on the latter rate which was assumed to hold true for 1966.

(L_{24})   Having got the estimates for L_r, $-L_{34}$, $-L_{14}$ and
L_{45}, $-L_{24}$ follows as a residual which is entered as a
reciprocal into L_{24}.

(L_{23})   This was projected on the basis of previous year's
experience in which the net of public sector's working
balances and loans were found to be a small negative amount
(= -7.82), tending to grow slowly . On this slow growth rate
we estimated L_{23} to be - 8.29 for 1966.

(L_{13})   Now, having got estimates for L_p, L_{35}, L_{34} and $-L_{23}$,
$-L_{13}$ is found to be 531.51 as a residual which is entered into
L_{13} as a reciprocal of $-L_{13}$.

(L_c)   Hensen assumed this to be zero but as an actual
outcome for 1965 in Pakistan we found it to be a substantial
positive amount. We projected L_c for 1966 by simply taking
the ratio of L_c in 1965 to GNP in 1965 and applying this
ratio to the projected GNP for 1966.

(L_{12})   Having fixed estimates for L_c, L_{15}, L_{14}, and L_{13},
L_{12} follows as a residual.

(L_s)   When L_{12} is entered as a reciprocal in $-L_{12}$, this
completes estimates for all cells in row 2 and yields its
total as L_s.

V.   FIXING THE MONETARY POLICY.

As indicated earlier, one of the main targets is the
private sector's investment and the problem for the monetary
policy is to make sure that this target will be fulfilled.

The flow table gives us an idea of the crucial
liquidity problem of the scheduled banks which developes
as a consequence of certain production and investment targets.
The private investment planned for 1966 seems to require subs-
tantial net credit flow from the scheduled banks to the private
sector as shown by L_{24}. But at the same time the flow table
shows that all other credit transactions imply a steep fall in

the scheduled banks to the State Bank of Pakistan increases enormously, as indicated by L_{12}. Though there are some indications that the scheduled banks have been increasing loans to the private sector on the basis of funds borrowed from the State Bank of Pakistan, but it seems highly unlikely that they can do so on a continued basis.

If we assume that the credit market strongly influence the private fixed investment then the possibility that the private sector will get the required amount of loans from the scheduled banks on terms easy enough to induce them to fulfill investment targets, while the scheduled banks themsleves are heavily indebted to the SBP, is very very low. In such a situation the lending terms of the scheduled banks are bound to be stringent which will hamper investment targets. The flow of funds, therefore, must be modified to achieve given targets. Several things seem possible to relieve the scheduled banks of their liquidity problem.

Firstly, the State Bank can lower reserve requirements and release some free reserves for scheduled banks. Secondly, since there is no market for open market operations, the State Bank may refrain from placement of government securities with scheduled banks any more. Thirdly, the public sector may very well reduce its borrowings from the private sector or increase its lending to it so that it may directly have sufficient funds to fulfill planned investment targets. This will reduce the private sector's necessity to borrow from the scheduled banks and, hence, increase the latter's liquidity. There can be a substitution between L_{34} and $-L_{13}$ but the aggregate L_p must not be affected because in that case a macro-balance between demand for and supply of goods and services, given all targets, would not be achieved.

VI.   CONCLUSIONS

at different places what gaps exist in data; what improvements
are needed in the budgeting methodology and what are the
implications of different decisions with respect to production
and investment targets. We would like, therefore, to end this
paper with a general note on the simple excercise undertaken
here.

It must be admitted that the model used here is
highly aggregative and is fed on some crude data that were
available to us. As a consequence we cannot put complete
faith in the conclusions reached in the fiscal and monetary
fields. At the same time, however, we cannot overlook the
main results found on the application of this straight forward
technique of achieving a macro-balance of uses and availability
of resources. The magnitude and the gravity of the fiscal and
monetary problems may not be as great as indicated here but
still it raises serious doubts about the adequacy of fiscal
measures proposed for 1966 and the possibility of carrying
out the monetary measures that it implies, given all targets.

The model attempts to present a broad perspective
within which key decisions for setting targets of production
and investment, government expenditure and imports etc., may
be looked upon in a single framework and highlights policy
guide-lines for appropriate fiscal and monetary measures needed
to be undertaken inorder to achieve the given targets under
certain constraints. We strongly feel that development of
such a perspective and the framework is essential to prevent
target setting and target achieving policies from recoiling
into an excercise in contradiction.

At present a number of decisions are taken which seem
quite correct within individual perspectives but do not easily
fit into a general perspective which, as we have stated, is
very necessary to devise appropriate policies. For example,

decisions affecting the level of government expenditure and domestic demand. On the other it is the seven-member Foreign Exchange Committee which takes decisions on imports and is guided mainly by exchange availability that may have only an indirect reference to production and investment targets which, in turn, are the sole responsibility of the Planning Commission. Further still, the control on the flow of credit from scheduled banks, which directly affects the demand situation and the private investment activity, is within the domain of the SBP alone. Unless this problem of uncoordinated decision making, as it exists, is solved we cannot successfully come to grip with financial problems of development planning.

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Appendex 'A'

EXPLANATION OF SYMBOLS

Items	1964-65, Actual (ex poste)	1965-66 Planned (ex ante)
GNP at market prices	$\overline{Y}$	Y
Foreign aid and loans	$\overline{L}_f$	L_f
Total available resources	$\overline{A}$	A
Private consumption	$\overline{C}_r$	C_r
Adjusted private consumption		C_r^a
Public consumption	$\overline{C}_p$	C_p
Private fixed investment	$\overline{I}_r$	I_r
Public fixed investment	$\overline{I}_p$	I_p
Private stock changes	$\overline{K}_r$	K_r
Public stock changes	$\overline{K}_p$	K_p
Total uses of resources	$\overline{U}$	U
Direct and indirect taxes	$\overline{T}_p$	T_p
Subsidies by government	$\overline{B}_p$	B_p
Public sector income from property	$\overline{Y}_p$	Y_p
Public sector interest payments	$\overline{i}_p$	i_p
Public sector disposable income	$\overline{y}_p^d$	y_p^d
Private sector disposable income	$\overline{y}_r^d$	y_r^d
Private sector adjusted disposable income		y_r^{ad}
Private sector savings	$\overline{S}_r$	S_r
Public sector savings	$\overline{S}_p$	S_p
Private sector net lending	$\overline{L}_r$	L_r
Public sector net lending	$\overline{L}_p$	L_p
Central Bank net lending	$\overline{L}_c$	L_c
Scheduled banks net lending	$\overline{L}_s$	L_s
Ratio of private consumption to private disposable income	$\overline{c}_r$	c_r
The resource gap	$\overline{g} = \overline{U} - \overline{A} = 0$	$g = U - A$

SOURCES AND EVALUATION OF DATA

Section III

(Y) $\underline{/}$4, p:19$\underline{/}$

(L_f) $\underline{/}$2, p:199, table 8$\underline{/}$

($\overline{C}_r$) $\underline{/}$4, p:62$\underline{/}$

($\overline{C}_p$) $\underline{/}$4, p:62$\underline{/}$

($\overline{I}_r$) $\underline{/}$4, p:47$\underline{/}$

($\overline{I}_p$) $\underline{/}$4, p:47$\underline{/}$. The estimates given here are between 4150 and 4250. We have assumed it to be 4231 because it is what we find as a residual and it is within the expected range of the Planning Commission.

Section III-a

(Y) The procedure and assumptions on which the estimates are arrived at are given in the text.

(L_f) $\underline{/}$4, p:98$\underline{/}$. This estimate was one of the most difficult to arrive at. At one place $\underline{/}$4, p:19, table I$\underline{/}$ the Planning Commission expects the external resources to amount 3690 million rupees for 1964-65, rising upto 4185 million rupees by 1969-70. If we get estimates for 1965-66 simply by :   3690 + (4185 - 3690)/ 5 = 3789, then this figure, one must admit, looks out of proportions, particularly when total disbursements in 1964-65 did not even exceed the 2300 million limit $\underline{/}$2, p:199$\underline{/}$. At another place in the Third Five Year Plan $\underline{/}$4, p:98$\underline{/}$, there are reasonable estimates about the expected external resources for 1965-66. When this figure of 2820

is compared with the level of external resource
disbursements in 1964-65, the estimates seem
acceptible and we have settled on it.
It is hoped that official sources in future will
put out firm estimates of maximum foreign finance.
At least estimates about actual disbursements
should not be widely divergent and, that too, in
the same document.

(I_p) /¯4, p:47_7. We have accepted this estimate
because it is reasonably close to the Economic
Survey estimate /¯2, p:188_7 which can be projected
for 1966 on a growth rate implicit in their
figures for the five previous years.

(I_r) /¯ 2, p:179_7. Here, too, we had great difficulty
of picking up the appropriate estimates. The
Planning Commission gives estimates of 3700
for 1966 /¯4, p:47_7. On the other hand we have
a table in the Economic Survey /¯2, p:179_7 which
gives estimates of private sector's total invest-
ment for five previous years, 1961 through 1965.
Estimates for 1966 were projected at 4561. Since
the behaviour of the private sector is based on
their past experience and I_r is a target variable,
we have accepted this estimate for calculating
implications of fulfilling this target for policy
considerations in fiscal and monetary matters.
There is an obvious necessity of improving estimates
for private investment in previous years so that
planned investment could be projected with a
reasonable degree of accuracy.

(C_p) /¯4, p:62_7. The Planning Commission expects
public consumption in 1964-65 to be 5094 and in
1969-70 to be 7250. We have estimated C_p for

($\overline{y}_p^d$) $\underline{/}3$, 5, 6, and 7$\underline{\_/}$. The amount included in the case of the Center is direct and indirect taxes net of the provincial share plus other net income and net interest receipts. In the case of the Provincial budgets, the amount includes direct and indirect taxes including their share in the Central taxes plus other incomes and net interest receipts. It must be stated that somewhat better estimates and clear statements of receipts and payments which constitute public disposable income are needed in budget documents.

(y_p^d) The estimate was obtained by simply taking the ratio of $\overline{y}_p^d / \overline{Y}$ and applying it to the expected GNP in 1966.

(c_r) First, the consumption ratio for 1965, $\overline{c}_r$, was obtained through dividing the total private consumption in 1965 by the disposable private income in that year which in turn was obtained by deducting the public disposable income in 1965 from the GNP in that year. Our estimate of c_r arrived at this way is very close to the Planning Commission estimate $\underline{/}4$, p:63$\underline{\_/}$. We expect $\overline{c}_r$ to hold for 1966 as well.