

Empirical Testing of the Macro-economic Planning in Japan*

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1. *The nature of the economic planning in Japan*

The Five-Year Plan of Japan, made public in December 1955, encompasses five years from the fiscal 1956 (April 1, 1956 to March 31, 1957) to the fiscal 1960 (April 1, 1960 to March 31, 1961), but actually incorporates in substantially the same form the plan for the last five years of the earlier Six-Year Plan which had been prepared by the Economic Council, a consultative body appointed by the Prime Minister. Thus the base year for projection in the Five-Year Plan remains the same as in the earlier Six-Year Plan; and it is the fiscal 1954. For the purpose of empirical testing, therefore, we now have two years in the record, namely the fiscal 1955 and the fiscal 1956.

The nature of the plan in Japan, however, is much more ambiguous than the term implies. Although it specifies definite objectives (such as "full employment" and "an equilibrium in international balance of payments"), postulates a set of probable conditions surrounding the country, and proposes an array of specific policies to be adopted, it nevertheless was not meant to be a *controlling* plan in the sense that there were implements for the plan uniquely associated with its objectives. The government

which drafted the plan took pains to make clear that their basic position was the maximum respect for private initiative and the minimum resort to any kind of centralized planning. Thus it may be more correct to visualize the Japanese Five-Year Plan as a *projection* of what is likely to occur than a *target* of what is proposed to be achieved. Even if it is a projection, it has a certain controlling significance in the sense that with its detailed ramifications developed it points up specific conditions that are required for the attainment of a balanced growth thus necessarily suggesting a set of measures which could be effective in correcting excesses and deficiencies within the limitation of the basic tenet of free enterprise.

By the very nature which is implied, such a plan lays no stress upon the year-to-year figures. Annual targets for various sectors of the economy are visualized simply as intermediate guideposts of average performance. A certain degree of fluctuations, considered as they are as a mark of healthy development under capitalism, is not excluded. Thus, although empirical testing will be attempted in this paper for the first two years of the original Six-Year Plan, any divergence in the figures between the plan and the achievement is not to be taken too seriously.

2. *The general methodology of planning calculus in Japan*

Since the Japanese Five-Year Plan is in the nature of indicating a set of guideposts and

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thus is being revised every year extending the target year accordingly, the method of planning calculus is also constantly revised. Here it is possible only to take up the method used in the original plan of December 1955 and to test in the following section the plan-deduced figures against the actual results.

The broad description of the method in question may be given as follows:

(1) The gross national product of the target year (the fiscal 1960) is estimated on the basis of the following formula: $GNP = m (rN - U)$, where m stands for output¹⁾ per man in 1955 yen, r the labor-force ratio out of the population of working ages, N , and U the number of totally unemployed. This formula itself is definitional, and the GNP for 1960 was estimated by assuming that:

- a) the average annual rate of growth of m will be approximately 2.5 percent;
- b) r remains constant at the value which obtained in 1954; and
- c) U in 1960 will be reduced to one percent of the total labor force.

The population of working ages, N , for 1960 can be estimated from the existing statistics of population. The resulting level of GNP for 1960 thus obtained would indicate a condition of full employment with the annual rate of increase of productivity of 2.5 percent.

(2) Any level of GNP implies a certain level of imports. Since the major portion of Japan's imports consists of industrial raw materials and staple food items, the propensity to import can be considered to be a fairly stable function of the level of economic activities. By making reasonable adjustments to the recent actual value of such a propensity, taking into account probable increase in the degree of dependence

1) Strictly, this is "value-added inclusive of depreciation" per man.

on foreign supply of industrial raw materials as the economy expands, we may estimate the level of commodity imports in 1960. One of the major objectives of the Five-Year Plan being the balancing of international accounts, the projected level of imports has to be matched by the more or less equivalent level of exports. However, a future level of exports six years hence hardly lends itself to a type of scientific forecasting which can be applied to some other economic quantities. Therefore, so long as the level of projected imports indicated by the level of GNP is not so high as to preclude the possibility of matching it by the more or less equal value of exports, the Plan proposes no special constraints on other economic quantities except to suggest those measures which are designed to boost exports to the needed level.

(3) The level of GNP for 1960 indicated under (1) is taken to be equal to the level of gross national expenditure for 1960 composed of personal consumption, private gross capital formation, and government purchase of goods and services. The current international accounts are assumed roughly to balance themselves in the target year. Of these components, gross capital formation (including government investment) is estimated *first* on the basis of the formula:

$$V_t = \beta(Y_{t+1} - Y_t)$$

where V stands for gross capital formation, β for gross capital coefficient, and Y for gross national product. β is taken to be approximately 5 for each plan year mainly on the basis of its pre-war value which was 4.96 as an average of 1930 to 1935. Once V is calculated, it is broken down into its four components (plant and equipment, increase in inventories, private residential building, and government investment) more or less in same proportions as they obtained in the pre-war average condition except to give a slightly greater weight to govern-

ment investment. Next, government consumption expenditures are assumed to remain at the same relative ratio to GNP throughout the Plan years as in 1954, i. e., 12 percent. Then the remainder should be equal to the sum of personal consumption and whatever we assume as the current surplus in international accounts. If the latter is assumed to be zero, the level of personal consumption is uniquely determined.

(4) However, the level of personal consumption can be checked independently by postulating a probable course of change in the propensity to consume defined as the ratio between personal consumption and national income distributed. This latter is estimated from the figures of GNP by deducting capital consumption allowances and indirect taxes (minus subsidies). Capital consumption allowances generally fluctuated around 7 percent of GNP before the war and occupied 7.5 percent in 1954. The Plan assumes this percentage to increase gradually to 8.2 per cent in 1960. As for the level of indirect taxes (minus subsidies), their ratio to GNP is assumed to decline slightly over the six years from 1954 to 1960. After the level of distributed national income is thus calculated for each year, it is proposed that the marginal propensity to save will be maintained at 30 percent in the first half of the Plan period and then will de-

cline somewhat. The resulting level of personal consumption for each year is checked against the one deduced under (3), and the discrepancies which were found to be small were absorbed through adjustments in minor parameters. (5) By nature of the case, the social accounts figures estimated as above could be consistent with multitudinous combinations of industrial structure and individual investment plans. But there are bottleneck industries and expanding industries. There are also policy considerations related to the necessity of saving foreign exchange. Thus, independently of the social accounts figures, various sectoral estimates by industries are also projected to the target year taking heed to considerations unique to each particular industry, and, after appropriate aggregation, checked against the macroscopic figures. As a result, certain adjustments are made in both to arrive at the final Plan figures.

3. Empirical testing

(1) The projections of gross national product:

Table 1 summarizes the relevant figures in the process of projecting gross national product for 1960 giving also intermediate guideposts for 1955 and 1956 along with the actual results for these latter two years. Table 2 brings out into relief the divergence between the "plan" figures

Table 1. *The Projection of Gross National Products*
—Plan Figures and Actual Results—

	1954a)	1955		1956		1960	Increase over 6 years	
	Actual	Plan	Actual	Plan	Actual ^{b)}	Plan	Absolute	Relative
Population (1,000)	88,350	89,260	89,340	90,170	90,280	93,230	4,880	5.5%
Population of working ages ^{c)} (1,000)	59,660	61,010	61,620	62,350	62,980	66,830	7,170	12.0%
Labor force ratio (%)	67.8	67.8	69.0	67.8	68.7	67.8		
Total labor force (1,000)	40,460	41,370	42,540	42,270	43,270	45,310	4,850	12.0%
Unemployment (1,000)	640	640	720	600	600	450	-190	-29.7%
Total employment (1,000)	39,820	40,730	41,820	41,670	42,670	44,860	5,040	12.7%
Output per man per year (¥1,000) ^{d)}	181.8	186.1	182.5	190.6	196.0	215.6	33.8	18.6%
GNP (billion yen) ^{d)}	7,241	7,580	7,634	7,942	8,364	9,673	2,432	33.6%

Notes: a) All the years in the table refer to the fiscal year, i.e. from April 1 of the year indicated to March 31 of the following year.

b) Preliminary figures.

c) The population of 14 years old or over.

d) In real terms, given in 1955 yen. The deflator used is the one adopted at the time of final drafting of the Plan. Recently, the Japanese government revised the deflator.

and "actual" figures on the basis of the first two years results.

Table 2. *Divergence of "Actual" from "Plan" Figures in the Projection of Gross National Product*

	Planned increase from 1954 to 1956 (A)	Actual increase from 1954 to 1956 (B)	Planned increase from 1954 to 1960 (C)	(B) - (A) (A)	(B) (C)
Population (1,000)	1,820	1,930	4,880	6.1%	39.6%
Population of working ages (1,000)	2,690	3,320	7,170	23.4%	46.3%
Total labor force (1,000)	1,810	2,810	4,850	55.2%	57.9%
Total employment (1,000)	1,850	2,850	5,040	54.1%	56.7%
Output per man per year (¥1,000)	8.8	14.2	33.8	61.3%	42.1%
GNP (billion yen)	701	1,123	2,432	60.2%	46.3%

Notes: The notes given in Table 1 apply here also.

Inspection of these tables will reveal that there was an underestimate on every relevant category except on the item of "unemployment" which in the case of Japan is for the moment a relatively insignificant factor. The last column in Table 2 gives the measure of achievement in two years in terms of percentage ratios to the projected net increase over six years. If the constant annual rate of increase were assumed over six years, such a percentage should range anywhere between 30 and 33 percent for the range of the rate of increase of 5 and 1 per cent. In the light of this, it appears that the estimate of total labor force, in particular, was wide of the mark and that the projection on output per man was also clearly out of line.

The divergence in the case of total labor force is compounded of a number of factors, even aside from purely statistical errors in the estimate of actual results. For one thing, it should have been possible, in view of the reputed excellence of the Japanese vital statistics, to estimate, for the short span of only two years, the number of population of working ages much more closely than it turned out. But far more complex is the parametric value of the labor force ratio. The Plan had assumed the ratio to remain constant at 67.8 percent throughout the Plan period. It turned out that the ratio was higher both in 1955 and 1956. If one were to aim at a more precise calculation of prospective

values of the ratio, there are a number of factors which could be taken into account. For example: (a) Specific labor force ratios are known to be distinctly different according to age groups and sexes.²⁾ Assuming these specific ratios to remain constant, the overall ratio could change as the composition of population by ages and sexes undergoes a shift. (b) A shift in the industrial structure of the economy would cause a change in the overall ratio. For example, a declining trend of the agricultural sector, which makes a greater use of family labor than in urban manufacturing, would tend to reduce the overall ratio. (c) There is a large category of "fringe" labor force in Japan in the forms of domestic side work, part-time jobs, etc. taken especially by older people and women in order to supplement the chief breadwinner's income. When prosperity prevails, it is quite likely that this category tends to shrink. And for a more long-run consideration, the specific ratios for the age group of 65 or over, which at present are quite high compared with west European countries, may be assumed to shift downwards as the standard of living rises in Japan. (d) The social customs of Japan, which once kept un-

2) Such ratios in broad age groups in the census year of 1955 were as follows:

Age-group	Male (%)	Female (%)
14-19	52.3	46.4
20-39	94.0	61.8
40-64	92.9	57.3
65-	60.0	29.1

married girls of the middle or higher class families at home, have changed radically in the post-war period; and far more of them are now seeking jobs. This trend is still continuing, and the labor force ratio of female younger age group in urban areas cannot yet be regarded as having been stabilized. These considerations can be spelled out in terms of their numerical effect on the prospective overall ratio; and although there may be some cancelling-out effect, a more refined calculation is certainly to be preferred.

Important and complex as the question of the labor force ratio may be, the matter of output per man (m) is still more so. The overall m for the economy as a whole is always an average of sectoral m 's weighted by respective sectoral employment. Thus it can easily happen that the overall m rises without any change in sectoral m 's if a sector with a relatively high m expands faster than others. What actually happened is not as extreme as this; but there was an element of such combination of events in Japan as is evident from the following table where the actual net increase of productivity and employment over the first two years is expressed as a ratio to the planned net increase over six years by three major industrial sectors and also in overall.

	Primary sector	Secondary sector	Tertiary sector	Overall
Employment	0	63.2%	68.9%	56.7%
Output per man	31.7%	32.1%	37.6%	42.1%

Note: As in Table 2, if the constant annual rate of increase were assumed over six years, these ratios should range anywhere between 30 and 33 percent for the range of the rate of increase of 5 and 1 percent.

(2) The propensity to import and the international accounts:

On the basis of the recent record and also for policy considerations of encouraging import substitutes at home, the Plan authorities assumed that the propensity to import (as a percentage to GNP) would be 11 percent³⁾ and satisfied

themselves that the wherewithal to pay for this level of imports should not be too difficult to earn assuming that Japan's exports would expand *pari passu* with those of the world as a whole which in turn might be assumed to maintain their rate of growth of recent years. The concern of the Plan authorities was more as regards making the detailed import plan consistent with the projected growths of various industries which would necessarily call for expanding input of imported materials. In view

Table 3 Imports of Major Items

	1954 ^{a)}	1956	1960	$\frac{1956}{1960}$
	Actual	Actual	Plan	(%)
Staple food:				
Rice (1,000 tons)	1,070	565	960	58.8
Wheat (")	2,200	2,194	2,490	88.5
Barley (")	482	941	400	235.2
[Above total]	3,752	3,700	3,850	96.2
Industrial raw materials				
Raw cotton (1,000 tons)	522	692	510	133.8
Raw wool (")	69	139	106	131.2
Iron ore (")	4,688	8,258	7,850	105.2
Coking coal (")	3,264	4,122	3,400	121.2
Rubber (")	79	119	114	104.3
Rayon pulp (")	97	134	115	116.4
Phosphate rock (")	1,402	1,685	1,800	93.7
Salt (")	1,918	2,275	2,400	94.8
Others				
Suger (1,000 tons)	1,057	1,166	1,320	88.5
Soy beans (")	576	667	800	83.4
Crude oil (1,000 kilo-litres)	7,416	11,587	12,900	89.8
Heavy oil (")	2,401	3,165	780	406.5
Total value of imports (including others) (billion yen) ^{b)}	815	1,232	1,004	
Gross National Product (billion yen) ^{c)}	7,241	8,364	9,673	
Imports+GNP (%)	11.2	14.7	11	

Notes: a) All the years in the table refer to the fiscal years, except the actual figures of crude oil and heavy oil imports in 1954 and 1956 which are for calendar years.

b) In real terms, given in 1955 yen, deflated by the general import price index. The 1960 plan figure is derived from the GNP figure by applying the planned coefficient of propensity to import of 11 percent.

c) In real terms, given in 1955 yen, deflated by the appropriate index constructed by the Japanese government.

3) See Yujiro Hayashi (ed.) *Nihon no Keizai Keikaku* (Economic Planning in Japan), 1957, p. 198. Lately, such a ratio fluctuated between 11 and 14 percent.

of this, the actual import figures of the fiscal year 1956 have turned out to be a great surprise. As is shown in Table 3, the propensity to import jumped to 14.7 percent and in the cases of several important industrial raw materials the quantities imported were higher than those planned for 1960.

Two questions arise in this connection so far as the planning calculus is concerned: (a) Is not the assumption of the stable average propensity to import (11 per cent) unrealistic? (b) Is it not essential somehow to bring the constraints of the rest-of-the-world sector to bear upon the major planning decisions of the Japanese economy? The first of these two problems can be tackled more easily. On the one hand, it cannot be denied that during the fiscal 1956 there occurred a fair amount of inventory accumulation of imported raw materials. Even relative to the higher level of industrial production in that year than before such raw materials in manufactures' hands were in most cases bigger than in the previous two years. But, of course, not all the increase in such imports was due to the inventory accumulation. The Economic White Paper, published by the government in July 1957, makes an estimate that of the net increase in imports in 1956 (fiscal year) over the previous year of 835 million dollars (in 1955 prices) only 174 million, or 21 percent, could be accounted for by the inventory accumulation and the remainder by the increase in industrial consumption. Thus, if we subtract from the total imports the part accounted for by the inventory accumulation, the total real imports (in 1955 prices) will amount to 3, 248 million dollars, or 1, 169 billion yen, i. e. 14 percent of the gross national product. It appears that unless technological coefficient of Japan's manufacturing industries undergo a radical change the propensity to import cannot be kept down at the

Plan-assumed level of 11 percent. The evidence to corroborate this judgment can be presented in the form of a regression equation of the industrial consumption index of imported raw material (Y) on the index of manufacturing production (X): $Y = -28.24 + 1.32 X$. This equation, constructed on the basis of the records of recent six years, 1951—1956, with both indexes expressed with 1951 as 100, fits the scatter almost perfectly and indicates, for example, that when the index of manufacturing production rises from 100 to 200 the index of the industrial use of imported raw materials rises from 100 to 236. Such a situation is only natural in view of the generally limited flexibility of domestic supply of industrial raw materials. A somewhat similar thing can also be said for the domestic supply of staple food. But here the unusually favorable weather of 1955 and 1956 helped Japan to produce record bumper crops in two successive years and enabled her to limit imports to the minimum. At any rate, it appears to be safer for Japan to assume the normal coefficient of the propensity to import to be nearer 14 percent than 11 percent.

Such a judgment leads us naturally to the second of the two problems mentioned above. If exports can be expanded *pari passu* with imports the method of planning calculus which proceeds from the full employment premise with rising productivity may more or less limit itself to the domestic scene. But the fact that such cannot be hoped for has been eloquently illustrated by the Japan's record of 1956 when exports rose by \$460 million while imports increased by \$1,020 million over the previous year. Again, if the international equilibrating mechanism were sufficiently at work, the situation like that of Japan in 1956 would automatically generate deflationary forces at home to induce expansion of exports and contraction of

imports. Unfortunately, however, the present world is full of restrictions and controls, so that for example, the price elasticity of demand for Japanese products from abroad cannot be relied upon as a mechanism of relief. All the more, therefore, is it essential for the planning authorities of Japan to pay a closer attention to the problem of a level of imports which she *can afford*. By nature of the case, this is not a problem of a precise level, but of a range, where the upper limit is indicated by the type of methodology here under discussion and the lower limit will be achieved by the maximum efforts to suppress luxury imports and to create import substitute industries within economic rationality. The latter efforts would involve a greater

degree of planning and control than the present Japanese government seems willing to permit.

(3) The projection of major components of gross national expenditure:

Projections according to the Plan of major components of gross national expenditure along with actual figures for 1955 and 1956 are given in Table 4, and some measures of divergence between the "actual" and the "plan" are presented in Table 5. Superficially, the divergence is varied and substantial; but there is one consistency in the pattern of divergence, i.e., the consumption type of expenditure is generally behind the plan and the investment type is far ahead. As a matter of fact, the ratio of gross capital formation to gross national expenditure

Table 4. *The Projection of Gross National Expenditure*
— Plan Figures and Actual Results —

Unit: Billion yen in 1955 prices

	1954a)	1955		1956		1960	Relative increase over 6 years (%)
	Actual	Plan	Actual	Plan	Actual ^{b)}	Plan	
Gross National Expenditure	7,241	7,580	7,634	7,942	8,364	9,673	33.6
Personal consumption	4,615	4,774	4,669	4,958	4,859	6,014	30.3
Private gross capital formation	1,110	1,256	1,303	1,350	2,014	1,714	56.8
Plant & equipment	758	783	742	949	1,256	1,238	63.3
Increase in inventories	254	341	427	262	603	329	29.5
Residential housing	98	132	133	139	155	174	77.6
Government purchase of goods & services	1,385	1,489	1,530	1,557	1,542	1,896	36.9
Consumption	869	924	849	961	876	1,161	33.6
Investment	516	565	681	596	666	735	42.4
Current surplus in international accounts	131	61	132	77	-51	22	

Notes: a) All the years in the table refer to the fiscal year.
b) Preliminary figures.

Table 5. *Divergence of "Actual" from "Plan" Figures*
in the Projection of Gross National Expenditure

	(A)	(B)	(C)	(B) - (A)	(B)
	Planned increase from 1954 to 1956 %	Actual increase from 1954 to 1956 %	Planned increase from 1954 to 1960 %	(A) - (C) %	(C) %
Gross National Expenditure	9.7	15.5	33.6	70.1	46.2
Personal consumption	7.4	5.3	30.3	-28.4	17.5
Private gross capital formation	21.7	81.6	56.8	276.2	143.6
Plant & equipment	25.2	65.7	63.3	160.8	103.6
Increase in inventories	3.1	137.2	29.5	4325.8	465.0
Residential housing	41.8	58.2	77.6	39.2	75.0
Government purchase of goods & services	12.4	11.3	36.9	-10.5	30.7
Consumption	10.6	0.8	33.6	-92.3	2.4
Investment	15.5	29.1	42.4	87.7	68.7

Notes: Note given in Table 4 apply here also.

was as high as 32 percent in 1956, one of, if not, the highest in the economic history of modern Japan. It may be recalled that the first step in the projection of major components of gross national expenditure was to apply the gross capital coefficient of 5 to annual net increase of gross national product which in turn had been estimated on the assumptions of full employment and the rate of growth in productivity of 2.5 percent per annum.

At least for the first two years of the Plan period the numerical value of the capital coefficients that had been assumed turned out to be grossly mistaken. We tabulate below the planned coefficients of different coverage in contrast with the actual results obtained:

	1954-5	1955-6
	Plan	Actual
β	5.0	4.1
β'	4.0	3.2
β''	2.5	1.9

Notes: β =gross capital formation (including government investment) of the period t divided by the increase of GNP from the period t to the period $t+1$.

β' =private gross investment in plant and equipment plus government investment of the period t divided by the increase of GNP from the period t to the period $t+1$.

β'' =private gross investment in plant and equipment of the period t divided by the increase of GNP from the period t to the period $t+1$.

Whereas the Plan assumed the coefficient of 5, the actual figure as an average of two years was 3.4, suggesting that the productivity of investment has been much higher than expected. Assuming that the methodology is correct, there is, first of all, a problem of choosing the right numerical value of capital coefficient. In the prosperous period of pre-war, i. e. during 1934 to 1938, β had the average value of 3.5, while it was higher, and accountably so, in the preceding depression years. In the post-war period,

β has been consistently below the pre-war average due most likely to the possibility of expanding capacities simply by repairs. The Plan authorities had reasoned, however, that a large-scale modernization was called for during the Plan period and therefore that it would be safer to assume a higher value of β . At least thus far it must be said that they have been mistaken.

Further, there is a much more important question of methodology. It is doubtful how serious the Plan authorities were in the use of the concept of capital coefficient except simply to aim at obtaining a plausible set of macroscopic guideposts in a roughest fashion. That they did not pursue the logic implicit in the application of this concept is evident when we calculate capital coefficients from the data apparently deduced by them without explicit awareness of productivities of sectoral investments. If we calculate the sectoral β'' 's (private gross investment in plant and equipment of the period t divided by the increase of the sectoral output from the period t to the period $t+1$) according to the plan figures of investment and output apparently derived separately and juxtapose them with sectoral β''/θ 's (β'' divided by incremental capital requirement per man added, which amounts to the additional labor requirement per unit of incremental output), we obtain the following table for three major sectors.

	Primary industries	Secondary industries	Tertiary industries
1954-55			
β''	3.2	3.5	1.4
β''/θ (per million yen)	1.3	2.5	3.0
1955-56			
β''	3.3	1.9	2.1
β''/θ (per million yen)	5.2	2.2	2.7

Two observations can be made: (a) As *planning* figures there seem to be too erratic a change from year to year. (b) Since these two sets of figures (β'' 's and β''/θ 's) correspond to incremental requirements of two major factors (capital and labor) for an additional unit of output,

they may be regarded as technical coefficients for the three sectors. If so, the test of economic rationality may be applied to them. Then it is found that the pattern of the second year is especially irrational as can be easily seen by plotting the calculated coefficients on a quadrangle with capital requirement on the one axis and labor requirement on the other. (Three points lie almost on a straight line passing the origin.)

Although the use of the concept of incremental capital coefficients for sectors may be theoretically called into question, the implied numerical values in the Japanese Plan calculated above are so erratic that we are inclined to question if the Plan authorities were serious in the use of the overall concept as well.

Since the derivation of gross investment figures was of primary importance in the estimate of components of gross national expenditure, the testing of other component figures may be dispensed with.

(4) General comments:

Actually, the Japanese Plan consists of projections of extreme detail, combining, on the one hand, a consistent skeleton of macro-economic

figures with minute details of separate industries on the other. Here we have dealt only with the former. In conclusion it may be observed that (a) the Japan's Plan is more in the nature of projections for a free economy than a plan for a consciously-directed economy; that (b) as such it depends largely upon two suppositions, one of an average annual rate of growth in per-man output of 2.5 percent and the other of gross capital coefficient of 5; however, that (c) in testing the records of the first two years of the Plan period we find weaknesses in the methodology especially as regards the degree of integration in the Plan, each step in the projection being treated more or less independently of other steps (for example, the rise in output per man in major sectors of the economy is simply assumed without relating it to investment expenditures flowing into the sector concerned); and that (d) the care with which several coefficients of key significance are estimated leave much to be desired, notably, the labor force ratio, the propensity to import, and gross capital coefficient.