

Reflections on Planning in India¹

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It gives me great pleasure to be here with you at the 61st Annual Conference of the Indian Society of Agricultural Statistics. I am indeed deeply conscious of the honour that has been conferred on me by your invitation to deliver the Dr. Rajendra Prasad Memorial Lecture. The luminaries who have graced this lectern in the past leave me with a feeling of profound humility, and indeed a sense of inadequacy at being able to meet the standards they have set. Nevertheless, it is a challenge I am more than happy to accept; if for no other reason than as a tribute to my illustrious precursors.

Since our independence more than 60 years ago, India has followed a path of planned development. This has over the years been a topic of debate and discussion, of strongly-held views both for and against. Nevertheless, it has persisted, and continues to do so. However, planning is only a tool, despite the ideological baggage that it has acquired, and its continuance should not be based on mere inertia, but on a realistic assessment of its relevance. It is, therefore, entirely appropriate that at this juncture of our history we take stock of our experiences with planning, and reflect upon its continuing utility in the future.

GROWTH THEORY: THE BASIS OF PLANNING

Before entering into the history of planning in India, it may be desirable to briefly sketch the path of progress in the analytical basis of all macroeconomic planning: namely growth theory. Plans and planning models are always based on a particular growth theory, whether explicitly or implicitly, and the appropriateness of the model is perhaps best gauged in terms of the appropriateness of the underlying growth theory. Therefore, any appraisal of planning processes requires a minimum degree of familiarity with the underlying theory.

Like most of economics, growth theory is concerned with maximizing an objective function (the rate of growth

of GDP [$g(y)$] in this instance) subject to the limitations placed by certain exogenous constraints. In its simplest and most commonly used form, the growth rate is specified as a function of the rate of capital accumulation or investments

$$g(y) = i/v \quad (1)$$

where i = the investment rate (investment/GDP)

v = incremental capital-output ratio (ICOR)

In the earliest growth models, it was believed that the primary constraint on accumulation was the availability of savings, behaviour of the economy. This gave the famous Harrod-Domar 'warranted' growth path

$$g(y) = s/v \quad (2)$$

where s = marginal propensity to save

Initially both 's' and 'v' were treated as parameters, so that the maximal attainable growth rate was seen to be outside the control of the policy-makers. The policy problem then was to attain and maintain the warranted growth rate, which was complicated by the 'saddle-point' nature of the growth path whereby even minor deviations

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from the path would lead to instability. It was, however, quickly realized by development theorists and planners that neither of the arguments could be treated as parameters. Three main lines of generalization emerged: (a) effect of income distribution on 's' (Pasinetti), (b) technological change (Kaldor), and (c) effect of the economic structure on 's' and 'v' (Mahalanobis/Feldman).

Although these developments led to a considerable increase in the sophistication of growth models, the essential problem remained simple – a single constraint. The real importance of these researches lay elsewhere. It was in the recognition that policies could be directed not only towards attaining the maximal growth rate for a parametrically given constraint, but they could also be directed toward relaxing the constraint itself. There were also the first stirrings of dissatisfaction with the single constraint model. This was most often articulated by applied economists and planners in terms of the 'absorptive capacity' of an economy, or the ability of an economic system to utilize productively the possible investments.

The first major complication was introduced in the early 1960s by Hollis Chenery in his 'Two-Gap' model, which explicitly recognized the role of imports in the creation and effective utilization of productive capacity. The 'Savings constraint' of the earlier models was, therefore, supplemented by a 'Foreign Exchange constraint'. As it happened, the full significance of the 'Two-Gap' model was not realized until much later. In the early versions, the classical assumption of a savings-constrained investment function continued to be made. This had a serendipitous effect on the relationship between the two constraints. The inflow of foreign exchange in the form of foreign savings (either aid or debt) would augment the availability of both foreign exchange and investible resources. Likewise, efforts at relaxing the domestic savings constraint would also tend to relax the foreign exchange constraint. Thus, there was apparently no real conflict between the two.

The most valuable contribution of the 'Two-Gap' model was in opening up the closed-economy structure of the earlier models. This added an entirely new dimension to development policy and planning. In particular, it laid emphasis on the trade-off between current production and capacity creation, and its sensitivity to the allocation of imports between capital goods and intermediates. Perhaps equally importantly, it

implicitly raised the likelihood of capacity under-utilisation – which was assumed away in earlier models. In practical terms, it also provided the most compelling justification for development aid and the continuing expansion of the multilateral aid agencies.

This model has been the most durable in so far as its influence on policy recommendations is concerned. This is not the least because it provides the intellectual *raison d'être* for the multilateral aid agencies, who are now the dominant purveyors of development advice in the world. But this is of course not all. This model is, if properly utilized, a very powerful one and sheds light on a number of important policy decision such as whether to follow an export-led strategy or an import-substituting one, when and how much to borrow on the international money markets, whether and on what terms to allow foreign direct investments, etc. Its place in the tool-kit of the development planners is unquestionable.

The next important conceptual development in this field was the introduction of the 'Agricultural constraint' to growth in the 1970s. This was uniquely an Indian contribution and arose out of the development experiences of the country. But its application range is very much wider. Unfortunately, it came at a time when development and growth theory were already in retreat and as a result, had much less impact than it deserves. The basic argument of this theory is that in a poor and primarily agricultural country, slow growth of the agricultural sector places a limit on the maximum *non-inflationary* rate of GDP growth which may be very different from the savings or the foreign exchange-constrained rates. The simplest version of this relationship is as follows

$$g(y) = n + [g(a) - n]/E \quad (3)$$

where $g(a)$ = exogenously given growth rate of agriculture

n = growth rate of population

E = income elasticity of demand for agricultural output

Simple though the above expression may be, this theory is of a considerably higher degree of sophistication than its precursors. In the first instance, it recognizes that growth and development are not synonymous terms and that development policies have objectives (in this case, inflation) beyond the maximization of the GDP growth rate. Second, it emphasizes the importance of the sectoral break-up of developing countries in terms of the relative

efficiencies of investment and their amenability to policy influences. Third, and perhaps most importantly, it brings out starkly the interaction between the growth constraints, and the need to be aware not only of the immediately binding constrained, but also the extent of slack available in the others.

The 'dual economy' models of Lewis, Jorgensen etc. capture only a part of the implications of the agricultural constraint model, and are really the building blocks for it. In order to do full justice to poor, dominantly agricultural economies, the 'wage goods' constraint has to be married to the macro-economic issues of income distribution, inflation, balance of payments etc. which this theory seeks to do.

The next addition to the family of growth constraints is the 'Fiscal constraint', which originated in the Latin American Neo-Structuralist school in the 1980s. This constraint is based on the insight that productive utilization of production capacities requires a corresponding input of certain key infrastructural facilities. This is an important insight in itself since although the standard savings-constrained planning models can take into account infrastructural requirements, the long gestation lags in infrastructure sectors can inhibit growth unless planning is done sufficiently in advance. However, in addition, this theory points out that in most developing countries, infrastructural investments are and can be carried out almost entirely by the government or the parastatals. If in such a situation the government is unable to raise the necessary resources in a non-inflationary manner, either capacity utilization will fall or fresh private investments will not be made. In either case, the growth rate of GDP will be adversely affected and may well fall short of the rates permitted by the savings or the foreign exchange constraints.

Like the agricultural constraint, this one too recognizes the peculiarities and the imperatives that guide policy-making in developing countries. It also brings to the forefront the need for having an active public sector. Market forces clearly cannot be relied upon to provide all the necessary inputs for growth and development. It also explicitly highlights capacity utilization as an important adjustment variable, which had only been implicit in the earlier models. This model has an important dimension which is missing in all the others – it draws a well-defined distinction between real and financial sectors.

All the earlier models were in essence real in nature and discussion of monetary and financial issues were more in the nature of qualifications. It is this dimension that highlights the importance of the type and the recipients of foreign capital inflows – a feature which should have been central to the two-gap models, but was not.

The 1990s threw up an entirely new growth constraint, which can be termed as the 'Financial Intermediation constraint'. This explicitly recognizes the fact that the existence of adequate savings may not necessarily translate to a commensurate level of investment since the two processes of saving and investment are intermediated by the financial sector of the economy which mobilizes savings, on the one hand, and finances investments, on the other. Inefficiency in this intermediation process or incomplete financial markets can lead to situations where actual investment falls short of the level permitted by available savings. This constraint in some ways can be considered to be a part of the larger intellectual stream of the 1990s which is termed as the 'Endogenous Growth' theories. These theories focus primarily on institutional characteristics which determine growth processes, and are more rooted in microeconomic theory than its predecessors, which were mainly macroeconomic in nature. Another component of the endogenous growth theory which needs to be mentioned in the present context is 'skills', which has become a major issue in India today.

At present, therefore, there are at least five distinct constraints to growth which have been identified in the literature and have been analysed to a greater or lesser extent. However, these are not all that there is to development strategy formulation. Each country has a set of minimum socially necessary conditions that economic policy has to address. Inflation has already been mentioned in this context. There can be a number of others. A few which are of relevance to India, for instance, may be mentioned – a minimum rate of employment growth, poverty alleviation, and balanced regional development. Any formulation of development policies has to retain awareness of these conditions and how they limit attainment of feasible growth targets. This really is the substance and subject of planning. Therefore, although all macroeconomic planning is based on growth theories, development planning has dimensions which go well beyond the limits of these theories.

INDIAN PLANNING: A THUMBNAIL SKETCH

It should be apparent from the preceding discussion that the theoretical recognition of the complexity of growth processes has evolved significantly over the years. The question is whether Indian planning has shown the same degree of dynamism. There has been a tendency in recent years to view the development strategy followed by India for the first fifty odd years after independence as an undifferentiated *continuum*, with little substantive variation from Plan to Plan. Nothing could be further from the truth. Indian development strategies have evolved from one Plan to another in response to the objective conditions of the economy and to the challenges of the moment. Some of these changes have been strikingly bold and original, others more modest; but change there has been. Today, therefore, I would like to start by taking this opportunity to briefly reflect upon the shifts that have taken place in our development strategy and in our attitudes and approaches towards planning over the years, and to present a point of view which may be at variance with some of the recent popular discourse on the subject.

The First Five Year Plan in today's jargon would be called a 'virtual plan'. It never really existed on paper. It was in essence a reconstruction strategy following the immense damage that had taken place during independence and the partition of the country. The agenda was no doubt set by circumstances, but the foundations for the future were clearly also set during this period. One of the most important of these is that the statistical system as we know it today was created during this period under the guidance of Prof. P.C. Mahalanobis. Even with hindsight, we can only marvel at the originality and prescience that went into designing the statistical system. Everywhere else in the world, especially at that time, statistical systems relied almost exclusively on administrative records, with periodic censuses to supplement the demographic data. However, these countries did not have to cope with the huge size and informal nature of the Indian economy.

The Second Five Year Plan, which more than any other bore the *imprimatur* of Prof. Mahalanobis, set the stage of our essential development strategy during the early years. This Plan was not based on the Harrod-Domar growth model, which was the reigning theory of the day, and relied on what is now called the Feldman-Mahalanobis model – a completely heterodox approach.

The emphasis on the establishment of heavy industries, both as a means of rapid industrialization and for raising the low savings rate of the economy, was certainly original in its conception, and reflects the tremendous confidence that our economic leadership had in its analysis and judgement. The most remarkable feature of this Plan was that it was visionary in that it set targets which were considerably more ambitious than what would be warranted by a business-as-usual approach.

The Third Plan, conceived during a period of serious balance of payments problems and falling international prices of primary products, introduced the concept of import substitution as a strategy for industrialization. Whatever be the merits of this strategy in hindsight, it received considerable attention, and even acclaim, from academics and practicing policy-makers, and was widely emulated by other developing countries. It is interesting that the Third Plan model embodied all the characteristics of the "Two-Gap" model, but preceded Chenery's seminal paper by several years. The main difference of course was that while Chenery sought a solution to the problem in foreign aid, the Indian planners looked for an indigenous and self-reliant answer.

The Fourth Plan came after one of the most difficult periods of Indian economic history. The two-year period 1965 to 1967 witnessed the worst drought in recent memory and consequent famines in large parts of north India. At the same time, all aid was cut off to India by the donor countries on account of the Indo-Pakistan War of 1965, including food aid. This traumatic experience brought food security into the forefront of our policy imperatives, which was further buttressed by the observation that sustained industrialization was not possible without adequate provision of wage-goods. This Plan followed four years of 'plan holiday' where all economic policy became subordinate to a single objective – food security. Unfortunately, the "Agricultural constraint" in the sense of evaluating the opportunities offered by non-binding savings and foreign exchange constraints was not embedded in the Plan, perhaps because it was yet to be articulated. The net result was a relatively non-visionary and unambitious Plan, which unfortunately set the trend for future Plans. Nevertheless, this Plan was also characterised by the introduction of another concept, which has only recently become popular in the international discourse – environmental sustainability.

The Fifth Plan was path-breaking in a completely different sense in that it recognized that growth and industrialization would not necessarily improve the living conditions of the people, particularly the poor – a recognition which only now finds echo in the development position being taken by the World Bank. The concepts of “minimum needs” and directed anti-poverty programmes were innovations of this Plan. The Fifth Plan also marks a point of departure from the Mahalanobis model, and a reversion to the Harrod-Domar. The significance of this shift has perhaps not been fully appreciated, but it is a clear pointer to the view that was emerging at that time that savings may no longer be the main constraint to growth.

The Sixth Plan, for the first time, explicitly recognized that the success of the Mahalanobis heavy industrialization strategy in raising the savings rate of the country had created a situation where the savings constraint was perhaps no longer binding and indeed excess capacities were becoming evident in certain industries. A shift in the pattern of industrialization, with lower emphasis on heavy industries and more on infrastructure, begins here. By this time, however, planning was in retreat and the “Infrastructural constraint” was not really evaluated in the manner it should have been. As a consequence, the institutional changes which should have been ushered in at this time simply did not happen.

The Seventh Plan represents the culmination of this shift in perspective, and may justifiably be termed as the ‘Infrastructure Plan’. There was a significant shift in the pattern of public expenditure towards infrastructure, but institutional changes were again not really contemplated. More importantly, the fiscal consequences of the larger infrastructure outlays were not taken into account, as it should have been if the Latin American ‘Fiscal constraint’ had been factored in. It was also during this period that a reappraisal of the import-substitution strategy and a shift towards a more liberal trading regime begins. The consequence of the expanded public investment programme and liberalization of the trading regime was a steady widening of the balance of payments deficit and a gradual reemergence of the foreign exchange constraint. It is clear with hindsight that one of the principal reasons why the collateral consequences of addressing immediate concerns was not recognized is that the Indian planning system never developed any short-run macroeconomic framework which could take account of these

implications. Planning models are usually too complex to build in such features.

The Eighth Plan was overtaken by the crisis of 1991, and the economic reforms that came in its wake. The dramatic events and policy initiatives of the two-year plan holiday period between 1990 and 1992 demanded a full reappraisal of the planning methodology, and the Eighth Plan represents the first efforts at planning for a market-oriented economy. In particular, a more complete and better articulated macroeconomic framework was introduced in this Plan, though the modeling of private investment behaviour was rudimentary at best. Although the shift in planning did not entirely take place, the economy performed unexpectedly well, recording an average annual growth rate of 6.7 per cent.

Unfortunately, this growth momentum could not be maintained in the Ninth Plan, even though the planning methodology had adjusted substantially to reflect the new conditions. The critical point to note about the Ninth Plan is that for the first time in Indian economic history it recognised the possibility that demand rather than investible resources could become the main constraint to growth. The warning was, however, not entirely taken to heart by the economic administration in the country. The pressures of fiscal rectitude in the face of the implementation of the Fifth Pay Commission award led to a sharp reduction in public investment both at the Centre and the States, which precipitated a cyclical downturn in the economy. Agricultural failure in three out of the five years exacerbated the problem. But the Ninth Plan was conceptually important for two reasons. First, it explicitly married planning and macroeconomic techniques, which is essential for any planning for a market economy. Second, for the first time in Indian planning history, the Ninth Plan attempted to integrate the financial sector into the planning framework.

The Tenth Plan marked the return of visionary planning to India after a long period of incrementalism. It sought to double the per capita income of the country in the next ten years and to create 100 million jobs over the same period. To a large extent, these targets were motivated by the demographic pattern that was emerging. It is quite clear that the single biggest challenge to Indian planners and policy makers at least for the next decade will be to provide employment to a labour force which is growing faster than ever before. The demographic

projections indicate that although there is likely to be a steady reduction in the rate of population growth in the country, the growth rate of the working age population attained a historical peak during the Ninth Plan period at about 2.4 per cent per annum and has declined only gradually thereafter. The growth rate of the labour force, however, is likely to be slower at 1.8 to 2.1 per cent per annum, but even this needs to be seen against our past record in creation of work opportunities. During the 1980s and early 1990s the average rate of growth of employment, which is a proxy for work opportunities had been around 2 per cent per year, but it apparently dropped sharply to around 1 per cent during the latter part of the 1990s and strongly recovered to nearly 2.8 per cent in the first half of the 2000s. Data problems apart, it appears that on a sustained basis, the rate of employment creation is probably in the range of 1.8 to 2 per cent per year, and much of even this is in agriculture with its disguised unemployment characteristics. Therefore, if the immediate past trends in work creation continue into the future, the country faces the possibility of adding about 2 million people to the ranks of the unemployed each year. Such a situation is clearly insupportable. As we are all aware, unemployment not only entails high human costs, but also imposes significant costs on society in terms of social unrest and deterioration of law and order.

It should be realised, however, that creation of work opportunities in itself may not solve the problem of unemployment and poverty. Since the growth of the labour force is unevenly distributed in the different regions of the country, the pattern of creation of work opportunities becomes extremely relevant. It would be naïve to believe that there are no barriers or costs to large-scale migration within the country. How this confluence can be achieved is a planning issue, and cannot entirely be left to the markets. In particular, there will always be a tendency for private investment to focus on the already developed regions, which will accentuate regional disparities. Unless public intervention, particularly in infrastructure, can gradually redress the initial imbalance, matters will simply become progressively worse. Therefore, the Tenth Plan laid considerable stress on the issue of regional balance and for the first time has a separate volume on States. In addition, the Tenth Plan also clearly pointed out the

emerging skills constraint and the need to move decisively on this issue.

Thus, whatever be the criticism of Indian planning, it cannot be accused of being either static or unimaginative. The Indian Plans have either anticipated or, at worst, closely followed the development of growth theory. In fact this is a record of which we can be justly proud. By and large, the track record too has not been bad. We have managed to decisively reverse the trend of falling per capita incomes that had characterised the first 50 years of this century, and have steadily accelerated our growth rates from an average of 3.5 per cent per year during the 30 year period from 1950 to 1980 to 5.5 per cent during 1980s, to 6.3 per cent during 1990s, and further to 6.9 per cent during 2000s. Food security too is no longer a matter of pressing concern, although it may reemerge in the future, and the scourge of famines seems to have been decisively eliminated from the country. The incidence of poverty has also been brought down, although not as fast as we would have liked. Social indicators have shown significant improvement from the abysmally low levels that existed at the time of independence.

PLANNING UNDER SIEGE : A DEFENCE

Despite these achievements, however, in recent years Indian planning has come under attack from a number of quarters, both within and outside the country. As we are all aware, the winds of change are sweeping across the globe. Countries which for long had centrally planned economies are steadily reorienting themselves to a more market-oriented system. It sometimes comes as a surprise to people abroad that India continues to preserve planning as a central pillar of its development strategy despite having had a vibrant market economy for many years now. I would like to submit to you that there is no contradiction at all; and planning has just as important a role to play in a market-economy as it did in a controlled one.

Within the country, dissatisfaction with planning emanates from two main directions. First, there is a view that planning is almost synonymous with *statism*, and is symptomatic of a desire of the government to intervene excessively in economic matters. Second, the fact that a number of developing countries have performed better than India by following different growth strategies is laid at the door of planning. Much of the criticism, I believe,

is misinformed, since it represents not a criticism of planning *per-se*, but either of its ideological underpinning or of the success it has achieved in India.

In so far as the first criticism is concerned, it relates to a particular form of planning - namely, investment planning, whereby the government determines the quantum of investment that will go into any sector or even industry. The argument appears to be that central planners are less competent to take and direct investment decisions than entrepreneurs operating under the discipline of market forces. While this view is certainly true at the present stage of development of the Indian economy, there are two points that need to be made to place the issue in perspective.

First, it needs to be realised that investment planning in its pristine sense has not existed in India at least for the last fifteen years, when the dilution and eventual dismantling of the industrial licensing regime was initiated. Second, investment planning in the sense of working out the investment requirements of different sectors of the economy in order to ensure inter-sectoral consistency continues to be valid, and will be so until such time as India becomes a capital surplus country and the importance of public investment diminishes significantly. Interestingly enough the Indian corporate sector appears to share this view. Our experience at the Planning Commission indicates that the single largest user of the Plan projections is in fact the private corporate sector, which recognises the value of sectoral forecasts made in a consistent, economy-wide framework for its own investment decisions.

The second stream of criticism is even less valid, at least as far as the manner in which it is usually couched. The first major error that is commonly made is to base the criticism on inter-country comparisons and not on the basis of counterfactual simulations. The simple fact is that development experiences will differ between countries for a host of reasons, of which the approach taken towards development strategy is only one. Political, social and cultural factors are just as important, and it is difficult to make allowances for these in a cross-country context. The second error lies in assuming that the countries with which India is being compared do not have planning as well. This is generally simply not correct. Almost every country which has performed well in recent years has strong planning systems, perhaps even stronger than ours.

All this is not to say, however, that the planning methodology should not change so as to reflect the new economic realities and the emerging requirements. It must, it has and it will. A significant beginning was made in the Ninth Five Year Plan itself. In sharp contrast to the past, the Ninth Plan did not lay down investment patterns in a deterministic manner. It indicated the sectoral investment requirements, the investment that is likely to occur and thereby the areas which may receive excessive or insufficient resources. Such an analysis focuses attention on the sectors which require policy change in order to achieve the desired targets. This approach to my mind is what policy planning is all about, and it has been further strengthened and refined in the Tenth Plan. The Tenth Plan had also explicitly taken into account the emergence of endogenous business cycles in the Indian economy and the need to develop a medium-term approach which identifies and reacts to turning points in the growth cycle. You will have noticed the startling similarity between this form of national planning with the corporate plans made by large corporate houses. No economic entity which has a long term vision can operate effectively in the absence of a mechanism by which future scenarios are generated, opportunities and threats are analysed, and a consistent strategy evolved. In future years this approach will need to be strengthened and made more precise and accurate.

The other principal function of planning in a federal system is to evolve a shared vision of and a shared commitment to the national objectives and the development strategy not only in the Government at all levels, but also among all other economic agents. No development strategy can be successful unless each component of the economy works towards a common purpose with the full realisation of the role that it has to play within an over-all structure of responsibilities. For this to happen, the vision and the strategy have to be clearly articulated in a formal document which is readily available to all players in the national economy. This function will always remain valid, and its proof is that there is no country in the world which does not have such a vision articulated at the highest level of government.

Finally, the third function of planning which needs to be recognised is that in a dynamically evolving world, conditions change continuously and the development strategy also has to evolve in a consistent and pro-active manner. This can only be done through a system which tracks emerging trends both in the international and the

domestic economies, analyses the opportunities and dangers, and indicates the direction for policy change.

One issue which is often raised is whether there is still a relevance for the Planning Commission in the new scenario or can the functions be carried out by some other agency. My answer would be that there are certain functions which the Planning Commission is best equipped to perform. For instance, a body like the Planning Commission is required in order to address the national objectives of poverty alleviation, population control, employment generation and balanced regional development in a holistic manner. Leaving these issues to the sectoral Ministries runs the danger of the inter-linkages and synergies being overlooked. The Planning Commission is also best equipped to evolve a long-term economic strategy for the development of the country. It has brought out a Vision 2020 Document outlining the priorities for the country over the next twenty years and the challenges we will face. We hope that it will lead to a national debate and eventually to a consensus on the development strategy that we need to follow.

Another area where the Planning Commission is relevant is in coordinating the economic activities of the central and state governments and among the central ministries. There is no other agency that is better equipped to play this role. As you are aware, India is a federal country in which the authority and responsibility for handling various public activities are vested in different tiers of the government by our Constitution. Coherent policy-making, however, requires that some agency ensures that these different and autonomous tiers do not work at cross-purposes. For this it is essential to have an institution which has an economy-wide mandate. This function will become increasingly more important in the future as the process of globalisation continues. Under the Constitution, the authority to enter into international treaties and arrangements vests only in the Central Government. Thus, there is always the possibility that the developmental responsibilities which are vested in the States may come in conflict with international obligations unless there is a coordinating mechanism which can ensure convergence.

CONCEPTUAL ISSUES IN DEVELOPMENT STRATEGY FORMULATION

Having argued for the continuing relevance of planning, the question that now needs to be addressed is

the manner in which the planning methodology must evolve in order to take into account the greater market orientation and increasing complexity of the Indian economy, its growing integration with the international economy, and the persistence of poverty and other forms of deprivation. It should be apparent that the emergence or recognition of additional constraints to growth has rendered simplistic the view that accumulation and efficient use of capital is the sole or even primary basis of growth which underlay virtually all of development planning and policy in the earlier years. While it remains true that sustained growth is impossible without accumulation, there is need to retain awareness of the nature and interrelationship of all the constraints if the sacrifices made in current consumption and well-being implied by savings are not to be rendered in fruituous. Indeed, the new role of planning is to ensure that the economy operates at the maximum growth rate warranted by the binding constraint of the moment, whichever it may be, and the slack available in the others are utilized to their fullest for relaxing the binding constraint over time.

Of the five growth constraints identified in the previous section, four – namely foreign exchange, agriculture, fiscal (or infrastructure) and financial – are considered as structural constraints, in the sense that they originate from rigidities in specific sectors. This is in contrast to the general demand-supply indication given by the savings constraint. This distinction between the structural constraints and the savings constraint has a crucial bearing on the conduct of policy.

In a structurally-constrained economy, the very fact that the saving-constrained growth rate is greater than the attainable implies that the investment necessary to attain the maximum constrained growth must be less than the *ex-ante* savings. This is not a serious problem in centrally planned economies where either consumption or planned investments in long gestation projects can be easily adjusted, but it creates complications in a market or a mixed economy where private investments are large. Regardless of the nature of the investment demand function, if private investors are not willing to tolerate increasing capacity under utilization, *ex-ante* private investment demand is likely to fall considerably short of *ex-ante* savings. Thus, a generalized aggregate demand problem arises, whereby the actual demand constrained growth rate falls short of even the structurally constrained one. Moreover, depending upon the specification of the

investment demand function, the system may well become unstable or at the very least display large cyclical swings around a relatively low trend growth rate.

This problem is precisely analogous to the well known instability problem in growth theory which arises when the Harrodian warranted rate exceeds the natural rate. In such a scenario, public expenditure becomes crucial in order to avoid problems of current demand. The issue that needs to be worked out is the necessary level of public expenditure. Let the savings constrained growth rate be approximated by the Harrodian warranted rate as given in equation (3). If the structurally constrained rate is 'g' then 'v.g' is the growth in capacity required to maintain the constrained rate. If the private sector left to itself increased capacity at the rate 'i' then the government must spend at a rate of $(v.g-i)$ in creating capacity and at $(s-v.g-t)$, where 't' is the marginal propensity to tax, on non-capacity creating expenditure on domestic goods and services in order to avoid aggregate demand problems and the resulting instability. This emphasis on non-capacity creating expenditures by the government is most important and is totally ignored in virtually all of mainstream economics literature. There is a general feeling among most economists and laymen that non-investment expenditures of the government are a dead loss to the system and should be held to a minimum. This is simply not correct. Under certain circumstances, over-investment can be almost as bad as under-investment since it can lead to cyclical behaviour, and this must be borne in mind. The experience of the period from the mid-1990s to the mid-2000s should be a permanent reminder of the adverse consequences of high-amplitude business cycles.

Therefore, in a situation where the binding constraint to growth is other than the savings constraint, the government not only has to decide on the total level of public expenditures, but also its break up into investment and consumption on the grounds of macroeconomic stability. This also has to be seen against the backdrop of claims on government finances on the grounds of socially necessary objectives. Monitoring the necessary level of government expenditure, although theoretically determinate, is not easy since the parameters are likely to change over time. However, in a predominantly agricultural economy, a rise in aggregate demand will, *ceteris paribus*, raise the prices of agricultural goods relative to those of other sectors. This of course does not apply to sectors which have administered prices. Thus, a convenient rule of thumb for judging the adequacy of

public expenditures is provided by the agricultural/manufacturing terms of trade. So long as this figure, on a trend basis, does not move against agriculture, public expenditure levels may be deemed to be adequate.

In general, this sort of expansionary government behaviour contains a danger of inflation. If there is a downward rigidity of non-agricultural prices because of mark-up pricing and a ratchet effect in wage formation, an improvement in agricultural terms of trade can come about only through an inflationary process. This, however, is a necessary cost of maintaining growth levels under uncertainty and should not be a cause for concern unless indexation is so prevalent in the system as to make any inflationary pressure explosive. In such cases the solution is not to permit the emergence of a demand squeeze-based recession, the dangers of which have already been discussed, but to reduce the extent of indexation through political processes. Unfortunately, the standard prescriptions for inflation are all based on a savings-constrained view of the economy. As a result, the knee-jerk reaction is to prescribe a dose of monetary and/or fiscal contraction.

When the fiscal constraint is in operation, however, the danger is much more serious. Since, by definition, the government is unable to raise the required resources for bridging the gap between *ex-ante* savings and investments through non-inflationary means, monetary expansion is the most likely result. In the short run, under normal conditions and with widely dispersed holdings of cash balances, nothing much may happen. If, on the other hand, the cash balances are held by a few or if the economy is disturbed by exogenous shocks which lead to a switch in portfolios from money balances to speculative real commodity stocks, an inflationary cycle may be triggered off. In the longer run, however, if the fiscal problem is not solved, any adequate and steady rate of growth will inevitably be associated with accelerating inflation.

In addition to the general problem discussed above, there are a number of other differences that arise in policy making under different operative constraints. First, issues of resource generation and allocative efficiency are much less important for structurally constrained economies than for savings constrained ones. The primary objectives of medium and long run policy making for the former should be to stabilize the constraining sector and then to maximize the growth of the other sectors within the limits

set by either the acceptable level of inflation or by the balance of payments as the case may be. If doing so requires that allocative efficiency be sacrificed it must necessarily be accepted.

In this context mention must be made of the large volume of literature that has been developed in recent years on the 'rent seeking' or directly unproductive (DUP) activities that are created by import restrictions in general, and quotas in particular. The argument is that in such restrictive regimes real productive factors are used not for production but for cornering scarcity rents. This represents a net loss to the economy. It should be remembered, however, that this argument applies only when the resources used in the DUP activity are the constraining factors. For the most part, such resources are capital and not agricultural goods or foreign exchange. Thus, the argument applies mostly to savings, fiscal or financial-intermediation constrained economies – a distinction not drawn by the proponents of this theory, although it is obviously crucial. In the case of the fiscal constraint, it may be argued that tax evasion is a major source of such funds and therefore compounds the problem. However, it seems to be a little far fetched to claim that tax evasion is resorted to for generating slush funds – the implication is a very peculiar form of the 'Laffer curve' indeed.

Second, the effects of one-off aid and foreign borrowing are very different under the various constraints. With the savings and the fiscal constraints, foreign resource inflows do not cause output to be higher in the short to medium run, but allow extra capacities to be installed for higher output in later years. With the other three constraints, however, foreign funds can have a more immediate impact by allowing the import of constraining goods, if the resources are so used. These windfall foreign exchange receipts, therefore, cause only step changes in output levels under the agriculture and foreign exchange constraints with very little growth effects, but have the potential for a more sustained growth raising effect under the savings and the fiscal constraints.

Sustained inflows of aid or debt receipts, on the other hand, have the potential of raising growth rates in all cases. The magnitude of these effects, however, is very different between different structural constraints. The output response of the economy to additions in import

capacity in any year depends upon the foreign exchange multiplier. With the foreign exchange constraint, imports are required only for the non competitive forms of imported goods. With the agricultural and the fiscal constraints, however, marginal requirements of agricultural goods or competitive imports of infrastructural capital goods also have to be provided. As a result, the foreign exchange multiplier in any given country and at a given constrained level of output is always less in agriculture or fiscal constrained one.

Third, domestic income policies which attempt to bring out desired income distributions also have very different effects depending upon the operative constraint. With the savings constraint, if marginal propensity to save is positively related to real income levels, all other considerations apart, greater inequality of incomes will *ceteris paribus* result in a higher (lower) rate of growth. In the short run, however, the effects are asymmetric, in that increased savings may well result in the demand constraint becoming effective such that the level of current output falls, whereas decreased savings will have no output expanding effect since the problem of one of an overall supply constraint. The most likely outcome in such a case will be a deterioration of the balance of payments and a tightening of the foreign exchange constraint.

With the foreign exchange constraint, where the bottleneck is a shortage of producer goods or relative luxuries, both of which are demanded more out of non-wage incomes than wages, a more (less) egalitarian incomes policy will increase (decrease) the constrained growth rate. In case of the agricultural constraint, however, where the bottleneck is in necessities which are primarily wage goods, increased egalitarianism will tend to reduce the rate of growth. The fiscal constraint, unlike the other, places a direct limitation on the conduct of an incomes policy. Since taxes are assumed to be rigid, any fiscal redistribution necessarily implies a reduction in public investments in favour of higher current expenditures. This will almost always lead to a reduction in the growth rate. The problem gets further compounded if the tax system is truly progressive. In such cases, income redistribution will lead to a reduction in tax receipts and hence to a further tightening of the fiscal constraint.

SHORT RUN POLICY MAKING IN DEVELOPING COUNTRIES

The points made above relate to the longer-run consideration that must underlie the formulation of any development strategy. A distinction is often drawn between development strategy and short-run policy making for meeting exogenous shocks. This is wrong. It should be remembered that all economic shocks affect each of the constraints to a greater or lesser extent. The policy response should, therefore, be based on an awareness of which constraint bites post shock and the extent of slack available in the others. Proximate indicators may well lead to inoptimal policy responses.

A major source of short run fluctuations in developing countries is weather-related agricultural failure. In most cases this is a transient shock and does not affect the long run position of the various constraints in any significant manner. It is, therefore, unnecessary to take any steps which would lead to irreversible changes in the economic structure. The immediate outcome of such shocks is some degree of inflation. It is, however, important to bear in mind the fact that with an oligopolistic industrial structure, relative price adjustments can take place only with some inflation. Such inflation, therefore, should be viewed not as a disequilibrium, but as an adjustment phase in which relative prices are adjusting to changed supply conditions within a 'competitive' market framework.

Efforts at curbing such inflation by contractionary means are distinctly counterproductive. In the first instance, it can be achieved only by reducing non-agricultural output – which simply means adding output contraction to output contraction. Moreover, the massive reduction in the income terms of trade of the agricultural sector caused by this may trigger off hardship selling of assets, and consequently lead to an unalterable structural change within the sector. This will almost certainly have longer run consequences on the position of the various constraints and on the attainment of socially necessary objectives.

The alternatives to contraction are either to impose a wage-price freeze on the non-agricultural sector as a whole which reduces non-agricultural real incomes at a given output level, or simply to allow inflation to continue and make what adjustments are required. The first option in general will imply a tightening of the savings, fiscal

and agricultural constraints, and a relaxation of the foreign exchange one. Thus, other than the political and administrative problems involved, this option is credible only when the foreign exchange constraint is binding and slack is available in the others.

As far as the second option is concerned, the major problem lies in the balance of payments implications. The rise in the domestic price level will *ceteris paribus* lead to increased non-competitiveness of domestic products *vis-a-vis* foreign ones, and thereby to a deterioration of the trade balance. The subsequent price decline which will occur with the recovery of agricultural output does not in itself solve the problem since non-agricultural prices would have settled at a permanently higher level. Financing the increased trade gap by drawing down reserves or by borrowing is a temporary measure which is permitted only if the foreign exchange constraint is non-binding. In all other cases, some form of real effective exchange rate adjustment must be implemented.

The other major source of exogenous shocks is international developments such as the oil price shocks or world recession. If the shock is a transient one, and the foreign exchange constraint is not binding, financing the increased trade gap or minor reallocation of imports is usually sufficient. If, on the other hand, the foreign exchange constraint is binding, some reduction in short-run growth performance is inevitable. This may be achieved by an appropriate reduction in the import-intensive components of government expenditure, such as public investments. It should be noted, however, that in such a situation there is a strong danger of a generalized demand problem arising which will drive down the growth rate to below that warranted by the foreign exchange constraint. Therefore, care must be taken to ensure that the cut-back in import-intensive government expenditure is matched by an increase in domestic expenditures.

In the case of more permanent international shocks, which involve a shift not only in the intercept of the foreign exchange constraint function but also in the slope, an entire reappraisal has to be made of the constraints scenario. If the foreign exchange constraint remains non-binding, nothing much needs to be done except for some reallocation of imports for ensuring that the reduction in the slack falls only on non-essential imports and not on essential ones. If, however, the foreign exchange constraint replaces some other as the binding constraint,

the entire policy framework will have to be re-evaluated in order to accommodate this new reality. Failure to do so will involve large and totally avoidable costs.

The confusion between the short run and the long run is rampant. Most often it involves treating short-term transient changes as if they are permanent. Sometimes, however, it works in the opposite direction as well. A classic example of this is the paradox that has been observed of, efforts at increasing urban employment in developing countries actually leading to even greater urban unemployment in the medium to long run. This phenomenon, which has received considerable attention in the development literature, strongly suggests the existence of adjustment mechanisms which are usually not present in developed countries and which argue for an entirely different macro-economics for developing countries. Unfortunately, such an integration of the micro economic phenomenon with the development strategy framework is as yet not available.

Another such instance relates to the advice that is frequently given to developing countries which have chronic balance of payments problems to allow large inflows of direct foreign investment. Although the motivation is more often than not ideological, the arguments are usually couched in terms of short run positive BOP effects. It can be shown, however, that in developing countries such inflows will almost invariably be associated with a negative BOP effect in the short run. Thus, if any argument in favour of such a policy is to be advanced it must be made in long-run terms, and incorporated into a wider policy framework.

PLANNING NEEDS AND RELEVANT TECHNIQUES

It should be clear from the previous sections that the nature of planning in an open market economy is considerably more complex than in a closed command economy. The planning system not only has to set a vision for the economy, but also chart out the policy measures which will allow that vision to be realized in a smooth, sustained manner without short-run disruptions. This requires a wider variety of analytical instruments than have been deployed so far, which places new demands on the statistical system of the country. There is also a need for far greater degree of coordination between the long-term planners and the short-run policy makers, such as the Ministry of Finance and the Reserve Bank. The

importance of institutions has again reemerged as a major consideration for planners, which was very much a part of our early planning systems but had been relegated to the back-burner for many years.

Let me first turn to what I perceive to be the new analytical demands that are being placed on planning systems and planners. First of all, let me reiterate the point that I have made earlier – intersectoral balancing and investment planning, at least in the sense of working out the optimal investment programme, will continue to remain important in the foreseeable future. Despite the much greater openness of the Indian economy, our very size and diversity will ensure that imports will continue to play a relatively small role in the economy, except in a very few products. More importantly, traditional planning models are the only analytical tools that we have at present which can accommodate the ‘visioning’ role of planning. All other tools are limited for this purpose. Thus, the central planning *problematique* of estimating sectoral investment needs for a visionary target will remain, and consequently so will the use of traditional planning models. For this, input-output analysis is essential. The main issue in this context is that the nature of production processes has changed dramatically in the past decade or so, especially in terms of the usage of information technology and other services. Most input-output systems have simply not incorporated these linkages in any meaningful manner, although they have now become crucial to any sectoral analysis of the economy. I recognise of course that this is not easy to do since the standard Leontieff assumptions may not, and probably do not, apply in such cases, but it can lead to serious projection errors unless they are incorporated satisfactorily. Considerable research needs to go into these issues, but there does not appear to be sufficient academic interest in this area within India.

Secondly, the planning models need to be significantly re-specified in order to take into account all the new growth constraints that have been identified over the years. This too is no easy task since the behavioural specification of some of these constraints have not really been worked out for the Indian economy, and nor are there sufficient international practices which can be readily drawn upon. It is also more than likely that the data base for estimating the parameters of many of these constraints may not even exist today. It is essential,

therefore, that academic research into planning models with more than one constraint has to take place in right earnest, and we cannot today rely on others in view of the virtual demise of interest in planning in almost all developed countries. As far as data is concerned, the statistical system in the past has risen to the challenges thrown up by the planners and policy-makers, and there is no reason to believe that it cannot do so again provided that the data needs are worked out in sufficient detail by the theorists.

However, planning models, especially those which are used to embody a vision, have two major limitations that have to be addressed by other forms of modeling within a consistent conceptual framework. First, although planning models are ideally suited to trace the path that the economy will need to follow in order to attain the targets set by the vision, they are not designed to project the trajectory the economy is likely to take on a business-as-usual basis. In the absence of the latter, it is impossible to determine the nature and magnitude of the interventions that the government needs to take, both in terms of policies and programmes, in order to move the economy from its projected growth path to the desired. Macroeconometric models with suitable sectoral disaggregations are best suited for this purpose, and it is necessary to have such models as a complement to the planning model. It should be ensured, however, that the *closure* of such an econometric model is chosen carefully and reflects the binding constraint of the moment.

Second, neither planning models nor macroeconometric models are particularly suitable for determining the impact of specific policies and other interventions on the parameters of the economy. The two taken together certainly give an indication of the parametric changes that are desirable given the vision and the likely business-as-usual trajectory, but they do not accommodate the effects of policy changes *per se*. Therefore, in order to determine the most effective interventions, recourse has to be taken to models that are explicitly designed to perform this function. The class of models known as "computable general equilibrium" (CGE) models falls into this category, and are especially suitable for market economies where prices play a dominant role in determining equilibrium. Some of these models can also be used to determine the effect that policies may have on income distribution and, with fairly stringent assumptions, even on poverty.

Thus, the modern planner needs to have more than one analytical arrow to his bow if he is to do justice to planning for a market economy. This may not in itself appear to be a daunting task, but the fact is that developing even one large economy-wide model is an extremely time-consuming and resource-intensive task. The problem becomes even more intractable if these models have to be embedded in a global framework, which has today become a necessity as the Indian economy progressively becomes more integrated with the global. Fortunately, there is no reason why all of these tasks have to be carried out by the national planning system itself. Both macroeconomic and CGE models are in great demand by corporate houses for their own corporate planning, and there are a number of non-government initiatives in building and operating such models for such customers. Moreover, there are several good models of the international economy available with various degrees of disaggregation. The task of the planner then is to identify such existing models which best suit her purpose and to develop networks that will enable these models to "speak" with each other. One function that cannot be outsourced, however, is the planning model, which has to reflect the priorities and constraints faced by the planner herself.

In the Indian context, however, macroeconomic or economy-wide planning is only one component of the larger planning system that is essential for the development of the country. This is by no means a new recognition. Indian planning has always been supposed to operate in a tiered manner where the Centre developed the economy-wide strategy and States worked out more specific interventions taking into account the specific needs and capabilities of each State. Ideally, the State-level plans were expected to aggregate to the national targets, barring a few sectors which did not come under the States' domain. Unfortunately, this has almost never happened since there was no method through which such reconciliation could be carried out.

One of the main points made in the Tenth Plan document is that the role of the States in economic development of the country is becoming progressively more important, but the planning capacity in most States has been seriously eroded. For this reason, the Tenth Plan specified a State-wise breakdown of the major targets in order to enable the States to plan more effectively. Given the federal nature of our country, there are limitations on the extent to which the Planning Commission can go in making state-level plans. This will have to be done by

the States themselves, and they require considerable assistance in rebuilding their planning capabilities. Unfortunately, the existing data system does not permit the application of standard planning techniques which are used at the national level for planning at the State level. More importantly, the nature of planning at the State level should be different from that used at the national level. States, by and large, do not have macroeconomic instruments available to them, and almost all State-level policy interventions are either at the meso- or even the micro-level. This recognition dictates the use of completely different planning techniques. The fact, however, is that most states attempt to apply techniques similar to those used for national planning. This is simply wrong, but we cannot blame the States for it. Economic literature does not have any well-established body of literature on planning at the sub-national level.

The problem has been further compounded with the 73rd and 74th Constitutional Amendments, which have created the third tier of Government. It is a Constitutional requirement that the *Zilla Parishads* must develop District Plans. Unfortunately, no one has any real idea as to how such plans are developed. It is obviously clear that district plans will have to be mainly micro-intervention oriented, but it does not take away from the need to assess the impact of each intervention. Moreover, the data-base to make such assessments does not exist at present, and will not exist until the theoretical methodologies are first worked out. Therefore, I believe that considerable theoretical research needs to be done to evolve suitable planning methodologies for these lower tiers of Government. Indian planning will remain incomplete until this is done and the data bases established for this purpose.