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PLANNING IN CRISIS

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MALLON

Planning in Crisis

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Planning as it is being carried out in many developing countries is in crisis in two respects. First, skepticism is growing both in these countries and among outside observers about the usefulness of planning per se. Albert Waterston, for example, after reviewing experience in more than 100 countries since 1958 for the World Bank, feels compelled to conclude: "Among developing nations with some kind of market economy and a sizable private sector, only one or two countries seem to have been consistently successful in carrying out plans. . . . Experience shows that countries with well-prepared projects coordinated by sound budgetary procedures and controls can dispense with comprehensive plans" (Waterston 1966). Few would dispute the first part of this statement, but in my opinion the second part is not based on a sound diagnosis of experience.

"Planning in crisis" also has another meaning which in turn provides a partial explanation for the failure of many plans and the growing skepticism about their usefulness: Many of the economies which are being "planned" are themselves in crisis, both economically (inflation, balance-of-payments disequilibrium, chronic budget deficits) and institutionally (weak administrations, ineffective policy instruments, political instability). It is no accident that the examples Waterston cites of successful development without comprehensive planning (Mexico, Germany, Puerto Rico) are also countries which enjoy relative economic and institutional stability and effectiveness. The same can be said of his example of a country (Pakistan) which has developed successfully with planning.

Does this imply that relative economic and institutional stability and effectiveness are preconditions for planning, without which comprehensive planning is not only irrelevant but also at times counterproductive? On the

When this paper was written, the author was head of the Harvard University Development Advisory Service group in the Argentine National Development Council. The opinions expressed, however, are of course his own and do not necessarily coincide with those of the organizations mentioned.

contrary, one of the chief purposes of planning should be to help establish these preconditions—in the sense that measures designed to achieve them should form an integral part of plans. The nature and degree of economic and institutional disequilibria, as well as the rate at which they can reasonably be expected to be corrected over time, should also be taken into account explicitly in the constraints imposed on development programs. It is difficult to conceive how this could be done coherently on a project-by-project basis, as suggested by Waterston, without comprehensive planning.

Planning in a Disequilibrium Economy

The initial disequilibria with which this paper is concerned and which it is suggested should explicitly be taken into account in development programming, are those associated with secular inflation. The analysis will be based upon the experience of Argentina, although the problem of secular inflation is common in the rest of South America and is not unknown in other developing countries. The relevance of my conclusions for planning in general will, however, be left to the judgment of the reader.

One of the main difficulties of planning in inflationary economies is inadequate recognition of the relationship between growth and stability. In the absence of effectively integrated development and stabilization programs, emphasis on growth tends to worsen inflation; conversely, efforts to stabilize the economy tend to halt growth. Although at times temporary progress has been made in achieving one of the two objectives, few if any of the countries facing this dilemma have succeeded in attaining a satisfactory rate of growth with stability for any length of time.

The difficulties of reconciling the two policy objectives are compounded by the fundamental disagreement between those who view inflation as a short-run phenomenon only requiring resolve and discipline to implement the "shock therapy" needed for immediate stabilization, and those who think of inflation simply as a symptom of underdevelopment. In fact, the essence of the notorious structuralist-monetarist controversy in Latin America amounts to disagreement over whether it is necessary to develop before stabilizing or to stabilize before developing. It is perhaps unnecessary to add that at least until very recently most planners have been structuralists and most treasury and central bank officials monetarists (if they held any position at all). Little progress toward breaking this impasse will be made until it is recognized that the so-called structural problems are both cause and effect of inflation, and that successful stabilization requires the right mix of both monetary and development policies.

Although it may seem like a digression, it is important to make sure at this point that the reader understands that the structural problems and

development policies we are talking about are not only the overall savings-investment gap and the balance-of-payments gap and ways of closing them. We are also referring to those mechanisms spawned by institutionalized inflation which are used to protect real income shares, to shift the burden of rising prices, and to thwart periodic stabilization measures. These mechanisms themselves tend to propagate inflation independently of its initial causes. We are concerned about the distortions in relative prices, factor remunerations, and resource allocation which are introduced by the unequal ability of different groups to defend themselves with these mechanisms and which cannot be rectified by once-and-for-all changes. On the contrary, given widespread downward inflexibility of prices and rates of remuneration, attempts to correct these distortions will at first generate further increases in the general price level.

One very important example in Argentina is the effort since 1952 to improve the relative prices of agricultural goods, which were seriously deteriorated by policies followed in the first part of the Perón administration. The main methods used were large periodic devaluations accompanied by restraints on monetary expansion. Because of the struggle of labor unions to prevent adjustments from reducing real wages, and of other producers to prevent a shift in the internal terms of trade against them during a period in which total income was growing slowly and irregularly, it took seven to ten years to restore agricultural prices to their former relative position. A wage-price spiral, which is one of the chief mechanisms propagating inflation today, was set in motion during the process.

"Shock therapy" measures aimed at immediate correction of existing economic distortions are almost bound to introduce other equally serious distortions in countries where inflation has become institutionalized. Institutional barriers (weak administrations, ineffective policy instruments, political instability, and the aforementioned propagating mechanisms) make it virtually impossible to bring about the proper redistribution of income and resources if total real income is stagnant or declining, and redistribution therefore involves important real income losses for some to compensate gains for others. For example, even though monetary policy instruments were effective enough to restrict very severely monetary expansion in 1962, fiscal administration was not strong enough under conditions of relative monetary illiquidity to prevent a sharp decline in the collection of taxes and social security contributions. As a result the fiscal crisis deepened, respect for the tax authorities weakened still further, government was forced to absorb most of the permitted increase in bank credit, and the desperate need of the private sector for additional credit gave such a fillip to expansion of the uncontrolled extrabank money market that it undermined efficiency of monetary policy instruments.

The main reasons for the failures and frustrations of past stabilization

efforts in Argentina are, in my opinion, first, that the whole burden has been made to fall on a few short-run policy instruments, and second, that policies have been based on a strategy of stabilization now and growth later or vice versa. The result has been intermittent periods of recession and expansion and continuous underutilization of productive capacity, at least since 1958. Even in 1966, after two consecutive years of substantial expansion (7.5-8.5 percent per year), less than 70 percent of manufacturing capacity was being utilized, unemployment was running at over 5 percent, and the favorable foreign trade balance was expected to reach \$500 million.

It is my firm conviction that frustration will continue until stabilization and development programs are coordinated by operating simultaneously and coherently on all policy instruments; and until it is recognized that it will take time to correct distortions in relative prices, factor remunerations, and resource allocation and to strengthen the effectiveness of public administration, policy instruments, and political institutions. It is possible to repress the rise in prices more quickly, but only at the cost of introducing further distortions in the economy and/or prolonged stagnation, after which inflation will reappear once the brakes are released.

The Fiscal Problem: An Illustration

Solution of the fiscal problem is very rightly given top priority in prescriptions for stopping inflation in Argentina, since the fiscal deficit has been the most important single source of monetary expansion in recent years. But reduction of the deficit immediately comes into conflict with the development program—recent government investment levels must not only be maintained but increased to meet growth requirements. The fiscal problem thus serves as an excellent illustration of the need to formulate complementary stabilization and development policies.

A public investment program adequate to satisfy minimum desirable infrastructure needs probably requires between 4 and 5 percent of GNP in Argentina (excluding investment requirements of provinces and municipalities). Consolidated net central government savings, however, have fluctuated in recent years between something over 2.5 percent of GNP in 1961 to a slightly negative amount in 1964 (difference between current revenue and expenditure). It has also been possible to raise an additional amount to help cover the deficit, equivalent to about 1 percent of GNP, through ad hoc financing from outside the banking system (from foreign assistance, refinancing of the public external debt, sale of dollar bonds to holders of private foreign debt, increases in the floating debt to government suppliers, utilization of increases in idle balances of state agencies and enterprises and the social security system, and so forth). It is therefore clear that even in 1961 it would not have been possible to finance even a 4 percent rate of public investment without recurring to a substantial

amount of bank credit and/or relying to a very considerable degree on ad hoc sources, some of which are undesirable methods of financing. And public savings have recently been running at little more than 1 percent of GNP.

A combined development and stabilization program would therefore have to be predicated on eventually increasing central government savings by 2 or 3 percent of GNP over current levels. This is a very tall order indeed under conditions existing in Argentina. The dimensions of the problem can be better understood by giving a few examples of the kind of measures which would have to be adopted.

Current net revenue of the central government declined to about 10.3 percent of GNP in 1965, compared with 11.9 percent in 1961, and more than 12 percent before 1958. Tax evasion is, of course, one of the principal reasons. In an effort to offset the erosion of the tax base, rates have in some cases been raised to exorbitant levels, and exemptions and the valuation of assets for income tax purposes have not been adequately adjusted to compensate for the loss in the value of money. Measures to improve drastically the efficiency of collection of arrears and current taxes might thus impose an intolerable burden on the taxpayer and introduce further distortions in relative prices and the allocation of resources. Therefore, such measures need to be accompanied by a reform of the tax structure.

Another reason for the decline in the net government revenue coefficient has been the large increase in central government transfers to the provinces, which have in general made only feeble efforts to broaden their own tax bases and prevent a deterioration in the efficiency of collection. A number of the provinces are now passing through serious crises of one kind or another (for example, problems of the Tucuman sugar industry, and excess production of yerba maté in Misiones) which in most cases call for additional central government assistance. Thus urgent measures to improve provincial taxation are required to prevent an increasing drain on central government resources.

Current public expenditure has also risen in recent years in relation to GNP. This is partly a problem of featherbedding, both in the central administration and in state enterprises; but it is also a problem of the decline in efficiency of public services. This decline in efficiency is partly due to the deterioration in real government wage rates, which not only has made it extremely difficult to attract competent professionals but also has made it necessary for government employees to hold more than one job. The excessive numbers of employees are thus, to a considerable extent, a reflection of the fact that most of them work only part time. What needs to be done is to dismiss unnecessary employees at a rate which would permit them to find alternative employment and to increase the salaries of those who are willing to remain on a full-time basis. This probably would

not reduce current expenditure much in the short run, but it would increase efficiency over the longer run.

Other fiscal problems could also be mentioned. The social security system poses a threat because its rising costs (now about 4.5 percent of GNP) are running ahead of contributions. The state railways are incurring a deficit which cannot be substantially reduced without considerable improvement in the efficiency of operation. Such improvement, in turn, requires better management and new investment; it would also require cutbacks in nonprofitable lines and laying off personnel who would initially have to be paid large unemployment indemnities. Techniques of budgeting, accounting, and control are inadequate, and the management of special funds and earmarked taxes need improving.

Three main conclusions can be drawn from these examples of the long-standing fiscal crisis: (1) Immediate revenue-raising and expenditure-reducing stopgap measures are necessary and possible. However, long-run solutions will require basic and complex reforms, some of which in the first instance will even tend to increase the budget deficit. (2) Although the optimal time path of improvement from the point of view of the stabilization program is rapid reduction of the deficit, basic reforms will pay off mainly in later years. As the rate of inflation declines, the real tax base will become more elastic and it will be possible to reactivate the government bond market. (3) Ex ante estimates of the net effect of this combination of stopgap and basic reform measures on annual public savings will be subject to wide margins of error, at least initially.

In summary, then, the essence of the integrated approach to stabilization and growth is not reluctance to bring about necessary but painful adjustments, but recognition of the fact that secular inflation has created profound distortions in the economy, the correction of which necessitates a basic overhaul of resource allocation and policy instruments. This requires a concerted effort which may not produce impressive results immediately, but which, if continued with perseverance, can snowball into a more lasting solution.

The Choice of an Appropriate Planning Model

Planning methods actually in use are in general not very suitable for integrated stabilization and development programming. In fact, it is probably no exaggeration to assert that most plans in developing countries have not been based on explicit models. The most common procedure has been to start with a set of growth targets, export projections, and estimates of investment requirements based on sectoral analyses and/or more aggregate relationships (such as capital-output ratios). Import needs derived from these projections often exceed export earnings; then it is necessary to close the gap by means of some combination of increased

foreign assistance and greater import-substituting effort. Domestic savings are projected on the basis of past experience, judgments with respect to the additional austerity which can be exacted from the community, and efforts to trim investment costs by means of greater efficiency or fuller utilization of existing capacity.

Through successive approximations reflecting the interplay of conflicting judgments of technicians and political authorities, a final plan program emerges, not because agreement is reached but because a deadline has to be met. Everyone has had to compromise, and innumerable adjustments have been introduced along the way. Thus it becomes difficult or impossible *ex post* to distinguish objectives from instruments, to identify independent versus dependent variables, or to trace through adjustments to check the consistency of the final numbers. It is even less feasible to find guidelines in such plans for current economic policy decisions.

An impressive effort has been made in recent years by Hollis Chenery and a number of other economists of similar persuasion to formulate planning models which explicitly relate development objectives and strategies to policy instruments and behavioral characteristics in developing countries.¹ In these models, the rate of growth of GNP is related functionally to such aggregate variables as savings and investment, foreign exchange income and payments, labor productivity and level of unemployment, and government revenue and expenditure. The projection of probable maximum and minimum values of exogenous variables permits *ex ante* definition of a feasible area of choice constrained by the corresponding values of endogenous and instrument variables. Although in practice attention has been focused on the aggregate savings-investment gap and the balance-of-payments gap, there is no *a priori* reason why the fiscal and monetary constraints of stabilization policies could not also be introduced into such models.

My first impression, however, is that it would be exceedingly difficult to establish functional relationships between stabilization policies and growth variables, and that the models in their present form cannot handle the crucial problems of timing and uncertainty.

With regard to the first point, it is unfortunately true that we know very little about the relationship of taxation, bank credit, liquidity, price expectations, and the like, on savings and investment decisions in developing countries. Moreover, the whole purpose of stabilization measures and complementary development policies is to introduce a state of affairs quite different from that existing during the previous period of secular inflation. How can regression analysis of historical time series or cross-

¹ See, for example, Chenery 1955 (the case of southern Italy); Chenery and Goldberger 1961 (Argentina); Chenery and Bruno 1962 (Israel); Baer 1966 (Brazil); and Tims 1968 (Pakistan).

section analysis of the fragmentary statistical data available help to quantify the response of savers and investors to tax reform, to a rise in interest rates in the controlled money market, or to an incomes policy?

The functional relationships expressed in the equations of existing models are in fact much too aggregative and simplistic to define the policy options which decision makers feel are open to them. Take the example of the Argentine model previously cited (Chenery and Goldberger 1961), in which the export function is:

$$E_t = \bar{E}_t \left(\frac{P_{et}}{r} \right) \epsilon,$$

where \bar{E}_t represents exports at constant base year prices; P_{et} , export price index in domestic currency; r , exchange rate index (pesos per dollar); and ϵ , price elasticity of export demand (assumed equal to -1.5).

This equation implies that the critical policy variable for increasing the value of exports is the exchange rate, which operates through a reduction in the dollar price of exports and an elastic response on the part of foreign buyers. Anyone familiar with the behavior of the British meat market at Smithfield, in which Argentine supplies normally have represented about 50 percent of total supplies, with the operation of the variable levy applied to meat imports into the European Common Market or U.S. sanitary regulations, with the nature of state trading agreements in grains (particularly vis-à-vis Communist-bloc countries), with the international linseed-oil market centered in Rotterdam, and so on, can understand why decision makers would consider this formulation not only an oversimplification, but an outright distortion of their policy options, perhaps inspired by ulterior motives of foreign advisers.

Furthermore, empirical evidence indicates that the favorable effect of exchange devaluation on exports operates mainly on the supply side in the short run (the increase in relative domestic prices of export goods reduces internal demand and thus raises export availabilities), not through the price elasticity of foreign demand. Since Argentine exports are also basic domestic wage goods, large devaluations have extensive repercussions on other economic and social variables which the decision makers must also take explicitly into account. Finally, the longer-run problem of raising exports is not viewed mainly as a function of further increases in the real rate of exchange (which over the past fourteen years have helped to raise relative agricultural prices roughly to the pre-World War II level with disappointing output response), but as a result of direct measures aimed at improving agricultural productivity. These more direct measures include agricultural research and extension, supervised credit, more rational tax policy, and improved availability and prices of inputs. Exchange-policy strategy is increasingly being viewed in terms of maintaining stability of relative foreign and domestic prices by means of a more flexible rate and

providing incentives for nontraditional exports through compensated devaluations.

With regard to the question of timing, the chief constraints on joint development and stabilization programs in disequilibrium economies are related as much to time paths and second-order conditions of key variables as they are to end-year targets and average rates of change. Achievement of plan targets depends crucially on the rate at which inflation, balance-of-payments disequilibria, and chronic budget deficits are brought under control by measures which require for their success stronger public administration, more effective application of policy instruments, and institutional stability. No one really believes that this process is linear, but at least some advocates of the models under discussion talk as if time paths and second-order conditions are not essential to planning models: "I would argue that it is much more important to have a clear idea of the nature of the changes in the structure of the economy that will be required by economic development than of the speed at which these changes will take place" (Chenery 1958).

Finally, planners have tried to handle uncertainty mainly by projecting a range of values for exogenous variables to determine a feasible area for the values of endogenous and instrument variables. This procedure, however, does not take care of situations in which the degree of uncertainty should be explicitly reflected in decision criteria.² Writings in the field of decision making under conditions of risk and uncertainty are quite extensive, but as far as I know they deal chiefly with problems facing the individual firm. National development planners, on the other hand, are faced with a more complex problem: Most factors contributing to risk and uncertainty which are exogenous to the individual firm are endogenous to governments, whereas the process by which public resources are committed can best be described, not in terms of once-and-for-all allocations set down in a development plan to reach predetermined growth targets, but in terms of a successive series of interrelated and contingent decisions through time.

These criticisms should not, however, be interpreted as an attack on planning models per se. The alternative to formally consistent planning techniques is arbitrary subjectivity and often chaos. But the planner must be aware of the limitations of these techniques and continue to search for ways to make them more relevant for decision making. Specifically, the tentative conclusions which seem to be warranted by the foregoing analysis in this section are:

1. It does not appear feasible, given the present state of our knowledge about the relationship between financial and growth variables in develop-

² Vernon (1966) emphasizes the problems of multivariate, uncertainty, and ignorance.

ing countries, to establish functional relationships between the variables of stabilization and development programs in a single set of equations.

2. Further disaggregation and specification of more complex relationships between growth parameters and policy instruments would be desirable to make models more responsive to the policy options perceived by decision makers. This could perhaps be done by means of exogenous submodels.

3. Although computationally difficult, it would be helpful to make planning models more dynamic by specifying the time paths of key variables which play a crucial role in stabilization programs.

4. Uncertainty must enter into policy and resource constraints in an essential way.

Remaining sections of this paper suggest means for solving only some of these problems. First, an annual submodel for stabilization policy will be presented which might serve to determine exogenously some of the key short-term constraints on development programs and to quantify the trade off between alternative stabilization and growth objectives. Second, an approach to contingency planning will be described which attempts to take account of timing and uncertainty in the determination of investment priorities and allocation decisions.

A Short-Term Stabilization Submodel

In Argentina, the Harvard Advisory Group to the National Development Council has dedicated much of its attention, particularly during the last year and a half, to trying to diagnose the inflation and identify the right mix of corrective monetary and development policies. Our conclusion is that significant demand-pull factors have been operating in recent years, with varying degrees of intensity, but that the high observed *rates* of inflation have been due mainly to cost-push factors. Furthermore, efforts directed mainly at correcting monetary disequilibria, unaccompanied by effective measures operating on costs, have resulted chiefly in depressing the level of economic activity rather than slowing down the rate of inflation (Maynard and Van Rijkeghem 1968).

The stabilization model developed by Maynard and Van Rijkeghem (see Appendix) is thus essentially an underemployment model, since investment and new additions to capacity are not explicitly included. We nevertheless feel that at least over the next two or three years this model is suitable for quantifying some of the most important constraints under which any development plan will have to operate in Argentina if growth is to be accompanied by progressive stability. These constraints are based on annual percentage changes in three main policy variables:

1. The relation between the increase in money-wage contracts during the current year and the rise in prices during the previous year.

2. The expansion of bank credit to the private sector in relation to the increase in money-wage contracts.

3. The relation between the expansion of bank credit to the private sector and the increase in total means of payment.

The essential point of this model is that the expansion in bank credit to the private sector, deflated by the increase in money wage contracts, is a key determinant of the level of nonagricultural output, whereas the expansion in *total* means of payments is a main determinant of the rise in the price level. Thus, assuming that the effect of the foreign sector on money supply is neutral, a reduction in the rate of inflation without depressing output or real wages requires that the rate of expansion of bank credit to finance the fiscal deficit be reduced more rapidly than credit to the private sector. The growth in real output is also determined in the model by the exogenous rate of expansion of agricultural production and of maintenance imports.³

This model can be used to generate time paths for the value of key policy variables according to different targets for decelerating inflation. If, for example, it is desired to reduce the rate of inflation from the current 30 percent per annum to less than 10 percent in three years without seriously restricting the rate of growth of GNP or real wages, one alternative would be to fix the following coefficients for the relations given above:

- a) increase in money-wage contracts = 0.6 (rise in prices in year)
- b) expansion of bank credit to the private sector = 1.0 (increase in money-wage contracts)
- c) expansion of bank credit to the private sector = 1.25 (increase in total means of payment).

Given rather modest assumptions about the behavior of exogenous variables during the period, GNP could grow at between 3 and 4 percent per annum and the rate of increase in real wages could rise from 1.5 to 2 percent in the first year to about 4 percent in the third. Net bank credit financing of the fiscal deficit, on the other hand, would have to fall from about 1.2 percent of GNP in 1966⁴ to approximately 0.6 percent in the first year thereafter, and 0.25 percent in the third.

The rapid initial reduction in bank financing of the fiscal deficit necessary to implement this particular stabilization strategy would act as a

³ Although agricultural output and imports are exogenous to the model, since year-to-year changes are due largely to factors such as weather, international price movements, and administrative decisions, the implications of the model for stabilization and development policy are incomplete unless complemented by an explicit foreign-exchange rate policy. In this regard see Mallon 1968.

⁴ Since this coefficient was first estimated, a new budget and financial program have been prepared which call for larger bank financing of the fiscal deficit in 1966.

very severe constraint on the first and perhaps even the second year's public investment program. Thus, implementation of this program would have to be made contingent on successful fulfillment of the combination of stopgap and basic reform measures mentioned earlier as necessary to solve the fiscal crisis.

Although the next section will emphasize the fiscal-policy implications of this model for contingency planning and the determination of public investment priorities, this should not be interpreted to represent an opinion that this approach is less important for other aspects of development planning. The choice of an explicit incomes policy consistent with the stabilization program, for example, would have large repercussions on plan projections of savings and consumption and would provide more specific guidelines in determining the desirable incidence of tax policy. Likewise, the credit limitations imposed by the stabilization program would permit more rational formulation of official lending programs and Central Bank rediscount policy. And the parameters of the model for maintenance imports and agricultural growth, complemented by an explicit exchange-rate policy, would be of help in planning development programs, designing policies to promote import substitution and "non-traditional" exports, and determining external financial requirements (debt refinancing needs, adequate foreign exchange reserve levels, and acceptable financing terms for capital goods imports).

Contingency Planning

The fact that government decisions are interrelated and contingent through time means that if programs and policies are not largely fulfilled in a particular year of a plan, then provisions for later years are at best no longer necessarily optimal, and at worst they may be downright irrelevant. Recognition of this fact has led to recommendations concerning the need to keep plans up to date through periodic revisions. A few countries have even experimented with "rolling plans"; these are revised annually with an additional year tacked on the end to replace the initial year already completed. But such plans have not received much support from planning authorities, partly because governments cannot afford to have scarce, skilled manpower tied up full time in writing and rewriting documents and partly because rolling plans do not provide fixed targets which the political authorities can publicize in their efforts to mobilize support for the development effort.

The main reason why periodic revisions of five-year plans do not provide a satisfactory solution, however, is that time paths and uncertainty are not thereby incorporated into allocation and policy recommendations in an essential way. This can only be done if the most likely

causes and probability of possible failure are taken into account in formulating plans. Rather than the standard "two-gap" model (based on terminal year targets, average rates of change, and once-for-all allocations), what is needed is a "blunder-gap" model suitable for contingency planning.⁵

To make the development program reflect realistically the above-mentioned fiscal policy constraints, public investments would need to be budgeted on a contingency basis. A firm hard-core program, containing the most urgent and high-priority expenditures together with their schedules of execution, could be established at a level equal to a conservative estimate of available public savings and other sources of financing. Similarly, a supplementary program of expenditures listed in order of priority could be prepared, the execution of which either in whole or in part would be made contingent upon the degree of success of the fiscal reforms. The hard-core and supplementary programs would not be exclusive, in the sense that projects in the hard-core program in the third year of the plan might appear in the first or second year of the supplementary program, and that the latter could contain additional allocations to accelerate the rate of construction of hard-core projects.

In summary, financial short falls during the plan period would not affect the composition of the five-year development program so much as it would the date of commencement and the rate of execution of individual projects. Since these factors are critical in estimating costs and benefits of many projects, it is better that they should be taken into account explicitly and as far as possible in the preparation of development plans. Some of the waste involved in arbitrary cuts or across-the-board reductions in projects during execution could thus also be avoided.

With respect to the effects of timing on project cost-benefit ratios, most attention in the literature has been devoted to the choice of an appropriate discount rate to convert cost and benefit flows to present values. There is a difference of opinion as to whether this rate should reflect pure community time preference (the marginal productivity of capital), or, alternatively, whether it should be equated to the cost at which the government can raise money in the market. In the situation we are analyzing, the relevant rate should reflect the social cost of increasing the fiscal deficit above the programmed level.

Presumably some estimate of this cost could be made on the basis of the direct and indirect effects which the increased deficit might exert on inflation, expectations regarding the capacity of government to implement its stabilization policy, and the burdens which additional revenue-

⁵ I am indebted to Professor Julio Olivera of Buenos Aires University for the term "blunder-gap," which he used in an address to the University Women's Club of Buenos Aires.

aising and expenditure-reducing stopgap measures might impose on the economy. But as was pointed out above, the risk of financial short falls is likely to be much greater at the beginning of the plan than later. Toward the end of the plan, additional reductions in the deficit need not be as large, basic reforms begin to pay off, and it again becomes possible to float government bonds outside of the banking system. Consequently the method of constraining public investment should fall especially heavily on the hard-core program in the first year and less heavily in future years.

It is not at all clear, however, that the appropriate array of shadow prices for public savings during the planning period (in descending order over the horizon of the stabilization program) should necessarily work against projects with larger fixed-capital requirements or longer gestation periods. This method would instead penalize projects which require particularly large first-year outlays and those whose construction schedules are relatively inflexible, since we are dealing here not with a general capital constraint but with a specific public savings constraint which is expected to diminish rapidly over time.

Most large fixed-capital, long gestation-period projects can be phased in different ways. In a recent analysis of a flat steel mill project in Venezuela, twenty-seven alternatives were identified which differed mainly with regard to the staging and phasing of construction of different processes. Even with constant parameter values, a difference of 15 percent was found to exist between the highest and lowest cost of identical technical processes staged differently. In the report on this project it was stated: "The importance of correct phasing and staging is very great when large capital investment is required as in steel, and when substantial economies of scale exist. . . . Indeed the 'best' technical process and 'best' staging are not even defined in a cost of output sense unless the phasing is specified" (Wein, Sreedharan, and Maal 1965, pp. 5-6).

If public investment priorities were thus determined in terms of a variable constraint on public savings, much greater emphasis would have to be placed on specifying the staging and phasing of alternatives for different projects. This, I suggest, would be of immense assistance to planning authorities in designing public investment programs which are more meaningful to those responsible for annual budgeting.

The problem of variance in expected public savings and project costs should also influence priorities. Projects of the "two-wheel" variety should, in general, not be included in the development budget unless they fit into the hard-core program. Two-wheel projects are those which must be executed at a particular rate or maintain a certain momentum to avoid complete collapse or great waste if slowed down (for example, construction of facilities to house equipment which must be ordered for delivery on a specific date; projects which are partly foreign-financed and which require renegotiation of foreign credits if they fall behind schedule; sanitary

campaigns which must proceed at a certain pace or have to start all over again, et cetera). "Four-wheel" projects, on the other hand, are particularly appropriate for inclusion in supplementary public investment programs. These are projects which can be accelerated or slowed down without incurring as much waste, or projects whose date of initiation or rate of execution are tied more loosely to the phasing of other parts of the development program.

The variance in estimated project costs could be accounted for by adding a risk premium to projects whose costs are less firmly established when priorities are set, or if such projects are included in hard-core programs, by making sure that budget allocations include a margin for contingencies. Given the limited portfolio of well-prepared projects in Argentina and the existing shortcomings in budgeting, accounting, and control procedures at all levels of government, planners should not, however, delude themselves into believing that these methods of project selection and budgeting can be made fully operational in the short run. Planners should proceed pragmatically by using criteria which budgeters and controllers can understand and which they consider relevant for annual allocation decisions. Once effective communication is established between project proponents, planners, and implementers, and once decisions are made which stick, more rapid progress will be possible.

Conclusions

One of the main reasons for growing skepticism about the usefulness of comprehensive planning in developing countries is the lack of relation between development objectives and programs and current policy problems. In disequilibrium economies suffering from secular inflation, this relationship can only be established by integrating stabilization and development programs and policies. Such integration has been obstructed by those who believe that secular inflation is a temporary phenomenon which can and should be corrected quickly by once-and-for-all shock therapy measures, or by those at the other pole who maintain that inflation is merely a symptom of underdevelopment and will go away after a period of sustained and balanced growth.

It is argued in this paper, on the other hand, that the economic and institutional distortions introduced by secular and institutionalized inflation are so serious that permanent solutions can only be achieved by coherent and persistent action on a broad policy front over a sufficiently long period of time, and that continued economic growth will facilitate the necessary adjustments. Development plans and programs will, however, have to be constrained by stabilization programs. Unfortunately, existing planning models and techniques are not particularly suitable for this purpose. The relationships between financial and growth variables have

not been specified in these models (nor is it likely that they can be until our knowledge of these relationships is improved in developing countries), and existing planning models do not take into account the problems of timing and uncertainty which are crucial elements of stabilization programs.

A short-term stabilization submodel is described which might be used to quantify the constraints of alternative stabilization policies on development programs. Combined with a system of contingency planning, this approach appears to the author to be more suitable than present methods for bridging the gap between long-term development aspirations and short-term policy struggles. It recognizes more accurately that the process by which resources are committed can best be described in terms of a successive series of interrelated and contingent decisions through time.

Appendix

The three basic equations of the Maynard-Van Rijkeghem (1968) submodel, derived from regression analysis of statistical data for the period 1950-64, are as follows:

$$z_r = 2.30 + 0.13(B_r - \eta) + 0.22m_{0-1/2} + 0.13z_a \quad (1)$$

(0.04) (0.05) (0.09)

$$R^2 = 0.81, D-W = 1.74,$$

where:

- z_r = the annual percentage change in gross output of the "rest" sector (nonagriculture);
- B_r = the annual percentage change in bank credit to the private rest sector;
- η = the annual percentage change in "agreed" wages paid by the rest sector, (agreed wages are the wage rates agreed upon during the annual wage negotiations; their increase is measured as the geometrical average of the monthly increases obtained by twelve representative occupations, all in the rest sector);
- m_0 = the annual percentage increase in "other" imports, that is, of imports which are not capital goods. An implicit lag of a third of a year is obtained by taking two-thirds of the percentage change of the current year and one-third of the change during the previous year;
- z_a = the annual percentage change in agricultural gross output.

$$P_r = 7.16 + 0.70M_{-1/2} - 0.89z_r - 1.82\pi_c + 0.30\eta \quad (2)$$

(5.85) (0.47) (0.57) (0.72) (0.26)

$$R^2 = 0.86, D-W = 1.85,$$

where:

- P_r = the annual percentage change in the price level of the "rest" sector;

$M_{-1/2}$ = the average of the percentage changes in the money supply (which includes term deposits as well as currency and demand deposits) in the current and previous year measured at the end of each year;

π_c = price controls—a dummy variable which is given a value of 10 in 1953 and 1954 (when price controls were in operation), and minus 10 in 1959 when all were abandoned.

$$S_t = 3.95 + 0.68\eta + 0.25\eta_{-1} \quad (3)$$

(6.75) (0.08) (0.08)

$$R^2 = 0.87, D-W = 1.99,$$

where:

S_t = percentage change in actual (as distinct from "agreed") wages.

Substituting the output equation into the price equation, the following reduced form equation is obtained:

$$P_t = 0.35M + 0.35M_{-1} - 0.12B_t + 0.42\eta - 0.20m_{0-1/2} - 0.12z_t - 1.82\pi_c + 5.11. \quad (4)$$

The three policy relationships mentioned in the text are: $\eta = (a)P_{t-1}$, $B_t = (b)\eta$, and $B_t = (c)M$, in which (a), (b), and (c) are policy parameters.

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