State Intervention in the Industrialization of Developing Countries: Selected Issues

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Prepared by: Armeane M. Choksi
Office of the Vice President
Development Policy Staff

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STATE INTERVENTION IN THE INDUSTRIALIZATION OF DEVELOPING COUNTRIES: SELECTED ISSUES

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Many developing countries have attempted to promote industrial growth using the discretionary powers of the state, with significant curbs on the private sector. This paper, using the experience of several countries, attempts to clarify the issues and analyze the economic implications of state intervention in three specific areas: public sector enterprises, industrial licensing and price controls, and industrial planning. The paper concludes that the issue for developing countries is not whether the private or the public sector should be the vehicle for industrial growth, but that there is a selective role to be played by the state and the private sector in the process of industrialization. Many countries have, however, erred on the side of too much state intervention. On the basis of the analysis, this paper suggests some policy options that developing countries may follow to permit a greater interaction of the state with market forces, thus creating an economic environment that is conducive to the cooperation between the private and the public sectors.

Prepared by: Armeane M. Choksi
Office of the Vice President
Development Policy Staff
Table of Contents

SUMMARY AND CONCLUSIONS ................................................................. 1 - xx

I. INTRODUCTION .................................................................................. 1

II. THE PRODUCTION/OWNERSHIP OF GOODS AND SERVICES BY THE STATE... 5

2.1 The Reasons for the Creation of Public Enterprises ......................... 6

2.2 The Performance of Public Enterprises ............................................ 12

2.2.1 Public Enterprises in Turkey ...................................................... 15
2.2.2 Public Enterprises in India ......................................................... 20
2.2.3 Public Enterprises in Korea ....................................................... 25
2.2.4 Public Enterprises in Ghana, Nigeria and Uganda ......................... 29
2.2.5 Public Enterprises in Italy .......................................................... 35

2.3 Policy Implications .......................................................................... 42

2.3.1 The Use of Financial Profitability as a Criterion of Success ............ 44
2.3.2 Social Profitability and Accounting Prices .................................. 50
2.3.3 Multiple Objectives ..................................................................... 54
2.3.4 Managerial Autonomy and Decentralization ............................... 56
2.3.5 The Benefits of a Competitive Environment ............................... 61

2.4 The Role of the State in the Production Process:
A Synopsis ......................................................................................... 66

III. STATE INTERVENTION THROUGH DIRECT INDUSTRIAL CONTROLS .... 74

3.1 The Objectives of Direct Industrial Controls .................................... 74
3.2 The Economic Implications of the Direct Control System ................. 81

3.2.1 Industrial Licensing .................................................................... 81
3.2.2 Price Controls ............................................................................. 88

3.3 An Agenda for Reform ................................................................... 95

IV. THE ROLE OF THE STATE IN THE PLANNING PROCESS .................... 105

4.1 The Reasons for Planning .................................................................. 107
4.2 The Characteristics of the Planning Process ...................................... 111
4.3 The Problems Associated with the Planning Process ....................... 116

4.3.1 Problems of Plan Formulation .................................................... 117
4.3.2 Problems of Plan Implementation ............................................... 124
4.3.3 The Plan and the Market ............................................................ 132

4.4 The Potential Function of Planning .................................................. 138

V. CONCLUSIONS .................................................................................. 147
APPENDIX A  The Experience with Planning .......................... 152
  A.1  The Indian Experience of Detailed Centralized Planning ............ 153
    A.1.1  How Planning is Conducted .......................... 154
    A.1.2  The Five-Year Plans ............................ 156
    A.1.3  Reasons for Deviation from the Plans ........ 163
  A.2  Planning in Egypt .................................... 164
  A.3  Planning in Tanzania ................................... 169
  A.4  Yugoslavia:  The Transition from Central to Self-Management Planning ...... 172
    A.4.1  Central Planning ...................................... 173
    A.4.2  Planning by Global Balances (1956-61) .......... 174
    A.4.3  Indicative Planning ................................. 175
    A.4.4  The Procedures of Self-Management Planning ........ 176
  A.5  Ivory Coast:  An Arbitrage Approach to Planning .............. 181

REFERENCES ...................................................... 186
## LIST OF TABLES

<table>
<thead>
<tr>
<th>Table No.</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.1</td>
<td>A Partial List of the Objectives of Public Enterprises</td>
<td>8</td>
</tr>
<tr>
<td>2.2</td>
<td>Profitability (Including Depreciation) by Area and Industry</td>
<td>14</td>
</tr>
<tr>
<td>2.3</td>
<td>Net Income by Area and Industry</td>
<td>14</td>
</tr>
<tr>
<td>2.4</td>
<td>Surplus-After-Investment by Area and Industry</td>
<td>14</td>
</tr>
<tr>
<td>2.5</td>
<td>The Performance of Public Enterprises in Selected Developing Countries</td>
<td>16</td>
</tr>
<tr>
<td>3.1</td>
<td>List of Selected Countries Instituting Direct Industrial Controls</td>
<td>76</td>
</tr>
<tr>
<td>3.2</td>
<td>A Partial List of Price Controlled Commodities in Some Developing Countries</td>
<td>79</td>
</tr>
<tr>
<td>A.1</td>
<td>India: Indices of Industrial Production</td>
<td>159</td>
</tr>
<tr>
<td>A.2</td>
<td>India: Output of Industrial Sectors</td>
<td>160</td>
</tr>
<tr>
<td>A.3</td>
<td>India: Savings and Investment in the Fourth Plan</td>
<td>161</td>
</tr>
<tr>
<td>A.4</td>
<td>Yugoslavia: Plan Targets and Actual Performance</td>
<td>177</td>
</tr>
<tr>
<td>A.5</td>
<td>Ivory Coast: Plan Forecast and Implementation</td>
<td>185</td>
</tr>
</tbody>
</table>
STATE INTERVENTION IN THE INDUSTRIALIZATION OF DEVELOPING COUNTRIES: SELECTED ISSUES

SUMMARY AND CONCLUSIONS

The topic of state intervention is one that has been extensively debated by economists and policy-makers for a number of years. Two predominant schools of thought exist at either extreme. One school supports the pure laissez-faire market mechanism philosophy as the most efficient means of allocating resources and thereby contributing to economic growth. This argument is based on grounds that governments are political in nature, badly organized and administratively inefficient. The market mechanism and the private sector, therefore, should be permitted to bring about the development process. The other school argues that it is the private sector that is weak, unimaginative, risk averse and too traditionally bound to conduct such a monumental effort as economic development. The state should, therefore, be the prime mover in this process. Thus, detailed central planning, direct controls, and ownership and control of the production process provide the most effective route to rapid industrialization and economic growth.

The purpose of this paper is to clarify some of these issues with a view to suggesting some policy implications. Since the topic of state intervention is inherently extremely broad, this paper concentrates on three selected issues that have often been the focus of much debate. They are: (i) the production/ownership of goods and services by the state, i.e., public sector enterprises; (ii) the use by the state of direct industrial controls,
viz., industrial licenses and price controls; and (iii) the role of the state in the planning process. In each case, the reasons or justifications as stated by the developing countries for using the particular form of intervention are presented. The experiences of various countries are then used to focus on a number of points from which various policy implications are deduced.

The basis of the policy implications and the resulting conclusions is a blend of economic theory and country experience. The nature of this product is such that formal, rigorous analytical techniques are not possible. One is, therefore, restricted to the realm of "verbal correlations." There will, nevertheless, be the exception to any particular rule; but to minimize that eventuality, the experiences of several countries are used to highlight various different points.

Briefly, the view and conclusions of the paper do not support either of the extreme schools of thought mentioned above. The conclusions suggest that there is a role to be played both by the forces of the state and those of the market in the process of industrialization. However, many (though not all) developing countries have erred on the side of too much intervention. There is a strong case to be made for these countries to take a "few steps back" (i.e., away from intervention) and permit a somewhat greater play of market forces than is the case currently. It should be emphasized that this is not synonymous with advocating a laissez-faire system. Neither extreme—laissez-faire nor total interventionism—on its own is an effective force for
industrialization. The specific issues associated with each of the three forces of intervention and the resulting conclusions and recommendations are summarized below.

(i) The Production/Ownership of Goods and Services by the State

State intervention in the production process is very common in most developing countries. The justifications given by the state for this form of intervention are many and varied; they include reasons that are economic, political and historical in nature and in most countries these reasons are often intertwined with one another.

Most economic reasons are based on a variety of market failures including imperfections in factor markets, the paucity of information and high risk aversion on part of the private entrepreneurs. Thus, public enterprises are created frequently to promote those social objectives that would be consistent with social profit maximization but inconsistent with private profitability. State ownership and control of the production process, therefore, generally involves capital-intensive projects (e.g., fertilizer, steel and petrochemicals) for which investment requirements are very large and the expected private returns, at least in the short-run, are too low to provide an incentive for private profitability.

Governments in many developing countries also choose to own monopolies rather than regulate them to ensure that profits accrue to the state rather than to the private sector. This includes the "natural" monopolies or the public utilities and other monopolies (or oligopolies) producing tradeable outputs such as fertilizers, steel and petrochemicals. In many
instances, the private sector is prepared to undertake the risk and invest, yet state ownership of these industries exists. This is usually due to the "commanding heights" justification.

The "commanding heights" of an economy are defined as the natural resource and capital intensive sectors of the manufacturing industries. This justification is usually tied up with the political philosophy of socialism and the belief that the state control of the commanding heights is a necessary condition for equitable growth.

Several studies have been undertaken with regard to the performance of public enterprises in developing countries. Most studies have evaluated performance on the basis of financial rather than social profitability. Based on this criterion, many (but not all) countries operate public enterprises that show low profitability or large and mostly continuing financial losses. The losses are mostly due to:

(i) inadequate planning and poor feasibility studies resulting in ill-conceived investments;
(ii) lack of skilled managers and administrators;
(iii) centralized decision making;
(iv) state intervention in the day-to-day operations of the firm;
(v) unclear multiple objectives; and
(vi) political patronage.

The continuous subsidization of unprofitable firms, in the long run, leads to a serious misallocation of resources brought about by the diversion of national savings; these savings could be put to better use in industries
that contribute to economic growth. In some countries, the financial performance of public enterprises has improved after several years. However, it is not clear that the cost associated with the continuous subsidization of the unprofitable firm has been less than the benefits of finally achieving a profitable public firm. In other words, the net welfare loss to the society, evaluated over the years of operation of the firm, is still likely to be quite large.

The basic problem facing the public enterprises in most developing countries is that on the one hand it is an economic unit required to perform its economic function efficiently, and on the other it is accountable to the state that issues vague and unclear objectives and feels compelled to direct the firm's operations. The task facing public enterprises is, therefore, a complex one; viz., of finding a proper balance between the various competing objectives expected of it and in determining the proper instruments to achieve these objectives.

Some developing and developed countries have, at various points in time, managed to mitigate if not eliminate many of the negative aspects associated with public enterprises. The conclusions and recommendations in this paper are based on some of these success stories. The implicit assumption that is made is that developing countries will continue to intervene in the production process through the use of public enterprises. The relevant question, therefore, is how can a public enterprise be used more efficiently by the state to achieve its objectives than has been the case to date? The conclusions are summarized below:
(i) The continuing financial losses made by the public sector enterprises in most developing countries indicate that such enterprises are, in general, not efficient tools for resource mobilization.

(ii) The measure of financial profitability, however, does not indicate by itself whether a firm is socially profitable or unprofitable. This is due to the distorted nature of the factor and product markets within which most public enterprises operate.

(iii) The non-quantitative aspects associated with poor financial performance (intervention in the management process, unclear multiple objectives, poor feasibility studies, political patronage, etc.) where they exist are, however, strongly suggestive that social profitability will also be low or negative. A quantitative measure of social profitability necessitates social cost-benefit analysis using shadow (accounting) prices.

(iv) The use of shadow prices is also essential for investment decision-making by the state to permit the selection of the socially most profitable public projects (enterprises). In the long run, this would lead to a more efficient allocation of resources. It would, therefore, preclude the automatic choice of the mandatory dam or steel mill which often constitutes a permanent drain on the national treasury.
(v) In order to improve the managerial efficiency of the firm, it is essential that a level of authority outside the public enterprise clearly identifies the goals and objectives to be sought by any public enterprise management. A careful analysis by the state is, therefore, imperative to identify the economic cost or subsidy associated with each social goal.

(vi) The subsidy should be determined \textit{ex-ante} rather than \textit{ex-post} to avoid the needless subsidization of poor management and firm inefficiency in general.

(vii) Political and economic autonomy must also be assured for public enterprises. The management and administration of the public enterprise must, therefore, be effectively insulated from political influence and interference. Thus, the day-to-day operations of the firm must be left to responsible managers, once the objectives have been identified and explicitly specified.

(viii) The "purely public" enterprises often used by the state are not the most cost-effective means of meeting the desired goals of the state. More cost-effective instruments such as "joint ventures" with the private sector exist. Thus, public finance (or equity) combined with private sector management is a feasible alternative which combines the strength of both sectors.
(ix) The state should not demarcate industrial sectors of responsibility, but it should encourage competition between the public and private firms within the same sectors. In addition, all firms (public and private) should be "regulated" by competition from the foreign trade sector. Thus, private and public monopolies would be inhibited and competitive efficiency would be encouraged.

(x) Once public sector firms "mature", the state should sell these firms to the private sector. Whether the state should sell only the successful firms or the marginally inefficient ones would depend upon the quality of private entrepreneurship available. The receipts from these sales may be used by the state to create new public enterprises in product markets where private entrepreneurship is weak or where market structures are non-competitive.

(xi) Finally, the state also has, at its hand, incentive mechanisms in the form of taxes and subsidies to encourage the private sector to meet social objectives such as regional development. These may well be the most efficient (cost-effective) means of attaining such goals rather than using public enterprises.

(ii) **State Intervention Through Direct Industrial Controls**

Direct industrial controls are another form of state intervention to overrule the market forces. They are administrative in nature and, thus, do not make use of or work in conjunction with market forces. The discussion in this paper is restricted to the direct domestic intervention instruments; viz., industrial licensing and price controls.
These tools of intervention are very common in developing countries. Industrial licenses have been used by governments primarily to control industrial investments and to allocate resources to conform to predetermined priorities and plan targets. There are two other major objectives of such control of investments: (i) the prevention of market structures from becoming monopolized and thus promote a competitive environment by encouraging and protecting the small entrepreneurs; and (ii) the promotion of regionally balanced industrial development. Price controls in most countries have been motivated by three considerations: (i) equity or "distributive justice" considerations which are designed to protect the consumer from excessive price mark-ups; (ii) the desire to ensure an adequate supply of raw materials and intermediate inputs to "priority" sectors at "reasonable" prices; and (iii) the prevention or mitigation of inflation.

The industrial licensing system in the developing countries has given rise to a variety of economic costs and to very few of the expected benefits. Various studies have shown that in these countries, when industrial licensing has been in force, the state has not been more knowledgeable than the market with regard to the social benefits that could be derived from the industrial sector. In most countries, the allocation of licenses has not been based on any sound economic criteria, but has in fact been rather ad hoc. Thus, the important issues of plant location, size, timing and choice of technology have rarely been addressed and the individual cases have not been examined in terms of their social profitability. The resulting uncertainty associated with the allocation process has resulted in real economic costs to the society in terms of increased gestation lags and significant delays in the
execution of projects. The delays, in turn, have resulted from a lack of a clear definition of responsibilities and from the overstaffing of public agencies.

Additional costs have been imposed on the society due to (i) the diversion of skilled manpower, in the form of extra civil servants required to handle the extra administration of the system; (ii) the diversion of the time of owners and managers to conduct non-productive activities inherent in such a system; (iii) the bribery, corruption and graft necessary to lubricate the process; and (iv) the negative impact on the efficient designs of goods and indigenous research and development.

The major objectives of the licensing system, viz., regional balance and monopoly control, have also not been achieved by most countries using this tool. Whatever regional dispersion has taken place, has done so at the cost of sub-optimal locations of plants and the proliferation of sub-optimal plant scales in each region. Thus, economies of scale have not been taken advantage of due to industrial fragmentation. The fact that industrial licenses act as a one-edged sword is a major reason for their ineffectiveness for location policy. They can proscribe entry to a certain region, but cannot, by themselves, stimulate the optimal amount of investment in the desired region; additional incentives in the form of subsidies are essential.

Monopoly control has been ineffective because of the sequential nature of allocating licenses; i.e., on a first-come-first-served basis. This has favored the large rather than the small entrepreneur. It has been the larger firms that have generally been able to allocate more resources in terms of manpower and time and have been generally better informed and organized than
the small firms. The latter have been generally devoid of contacts with the state officials, lack the necessary information and organization to obtain the licenses and are generally without financial resources to bribe officials or to engage professional manpower to deal with the system. Thus, contrary to the desired objectives, the licensing system, in practice, has generally been anti-competitive.

Price controls have also contributed significantly to raising the economic costs to the society. The control agencies generally have a small staff with imprecisely defined priorities. These priorities have often unintentionally contributed to the private sector subsidization by the state. The cost-plus pricing system, common in most countries instituting price controls, has also contributed to inflation rather than mitigating it. In addition, such a system provides no incentive for efficiency or cost-minimization. Another consequence of the price control system is the critical shortages of output that result from a lack of investment. This, in turn, is due to the lack of internally generated investment funds. Also, since no public sector firm is allowed to go into liquidation, losses resulting from price controls entail government subsidies which hide a number of inefficiencies which may be present in the firm. Thus, due to the massive problems associated with the administration, verification and control of prices, the price control agencies have not functioned effectively. As a result, the pricing system itself has tended to set up signals and incentives that are not conducive to efficient resource allocation.

The conclusions and recommendations for the reform of this system may be divided into two parts. The long-run recommendations and the short-run ones. The former are presented first below.
(i) The evidence shows that competition is not enhanced by the encouragement of several small, inefficient units whose growth is discouraged, but rather by the free entry and exit of firms without the social costs associated with obtaining an industrial license. Monopoly control and regional balance may be more efficiently achieved through tools other than industrial licenses, which should be eliminated.

(ii) Monopolies may be controlled by the use of:
(a) tariff policies, i.e., by denying protection and, thus, imposing a constraint on the pricing decisions of monopolies;
(b) the power of the state to tax and subsidize; this can combat the growth of monopolies; and
(c) antitrust legislation.

(iii) Regional economic balance can be achieved more efficiently through the use of:
(a) tax incentives;
(b) wage and interest subsidies; and
(c) the provision of infrastructure.

(iv) Policy-makers who use tax incentives to promote industrialization should recognize the reinforcing characteristic of incentives which raises the total level of incentives; i.e., that the whole is greater than the sum of the parts.

(v) In the long-run, most factor and product prices should be decontrolled so that they may reflect their true opportunity costs.
Exceptions, however, may be made for the "natural" monopolies and where income distributional considerations are truly overriding.

Despite the above recommendations for reform, countries that have a history of direct control mechanisms are unlikely to disband them overnight. The recommendations made below are intended to ease the transition process. They are, therefore, of a short-run nature.

(i) The disbanding of all industrial controls should be phased over an announced and specified period of time. The gradual transition away from direct controls is not likely to provide benefits beyond a certain point without the introduction of coordinated reforms in the domestic capital markets and the foreign trade sector.

(ii) The length of the transition process depends crucially on the extent of domestic distortions created by the control system.

(iii) The policy recommendations that begin the transition process of decontrol of investments using industrial licenses include the following:

(a) governments should clearly establish and identify high priority sectors and specify the criteria for allocating or denying licenses;

(b) the criteria for allocating licenses must be based on a careful cost-benefit analysis;

(c) the sequential allocation of licenses should be replaced by a simultaneous one conducted periodically;
(d) for all other ("non-high priority") industries licenses should be eliminated and appropriate fiscal incentives should be used;

(e) periodic announcements of the administrative reforms should be made to eliminate uncertainties and delays.

(iv) There are no general principles for the transition associated with price decontrol. On political and economic grounds, rapid price decontrol is not encouraged, but rather a gradual one is. The rate of decontrol depends very much upon the economic environment and the existing distortions in the economy as a result of price controls.

(iii) The Role of the State in the Planning Process

The raison d'être for planning in developing countries is the inadequacy of the markets as a signalling device for future opportunities in a rapidly changing economic environment. The resulting divergence between private and social profitability necessitates the planned direction and coordination of investment. It is believed by the state that, in the absence of such direction and coordination, economic growth would be retarded.

The formulation of plans is, therefore, a very common activity in developing countries. The "ideal" plan would consist of three inter-linked plans: the long-term perspective plan which spans a horizon of fifteen to twenty years, the medium-term plan which is usually of a five-year duration, and the annual plan. Most developing countries concentrate their resources on the medium-term plan. Perspective plans are usually very rudimentary and are often not published, and annual plans are the exception and not the rule; where they exist, they are very loosely linked to the medium-term plans.
A typical medium-term plan consists of the specifications of overall growth targets, "key" industrial projects, the investment requirements and the source and availability of the investment funds. Some countries also present inter-sectoral or inter-industry commodity flows, and national income and foreign account balances.

The planning process, which in this paper is defined to include plan formulation and plan enforcement or implementation, implicitly presumes the availability of adequate resources in terms of capital (physical and financial) and skilled technicians and administrators. Most developing countries, however, are unable to allocate sufficient resources to this process. The shortage of capital and skills in developing countries is well known. Thus, medium-term plans become the focus of the plan formulation activity with inadequate attention given to perspective and annual plans.

Therefore, even though the "technology" of plan formulation has advanced considerably, both in terms of high-speed computers and the associated software, and planning techniques have become increasingly sophisticated, the developing world has been unable to use this technology efficiently due to the high shadow prices associated with skills and capital. These countries, therefore, use techniques and models that are more suited to their resource endowments, but are not adequate for proper plan formulation and policy purposes.

There are two issues which compound this problem of formulating plans. The first is the unavailability of data or the poor quality of the available data for even the simplest models. The second is the penchant of many (though not all) developing countries for detailed centralized plans.
which are often imperative in nature. As a result, plans in many developing countries are beset by poor economic and technical analysis, and simultaneously, the plans are very detailed in nature, specifying a number of poorly evaluated industrial projects. This results in sub-optimal plant locations, size and choice of technology, often combined with an incorrect time-phasing of the investments. Thus, there is simultaneously excess capacity in some industries with acute shortage of inputs in others (such as steel and cement). Consequently, there are crucial bottlenecks created with a resulting unanticipated increase in prices. In some countries, the poor plan formulation results in too many "high priority" projects with inadequate investment resources. Some countries then initiate all projects with insufficient funds to achieve their completion, while others make "across the board" cuts without any rational economic criterion to select the projects.

As a result, many planning exercises become annual budgetary exercises where the budget authority becomes the ultimate decision-maker regarding project selection. This authority often tends to ignore the central planning agency and the national plan. There are also problems associated with the budgets which often tend to be incomplete statements of public investment. These are often static (one year) in nature rather than multi-year; they are, therefore, unsuited to the needs of development which is a dynamic process. In addition, the poor quality of technical staff and administrators render these budgets ineffective as they are also based on unreliable costs and benefits of alternate projects.

In addition to the problems of plan formulation, there are significant problems associated with plan implementation. Successful implementation of plans implicitly assumes a stable economic and political environment.
However, exogenous shocks such as wars, national disasters (e.g., droughts) and economic uncertainty associated with balance of payments difficulties have often impeded the implementation of plans. As a result of these events, plans that have already been formulated are abandoned mid-stream, and short-run problems have often taken precedence over longer term development programs. This has, in many cases, resulted in medium-term plans being converted into a series of annual plans.

The methods of plan enforcement used in many developing countries instituting detailed central planning have also increased significantly the economic costs to the society. Three such tools have already been discussed (i.e., public enterprises, industrial licenses, and price controls). There are also other tools that have been used (e.g., tariffs, preferential credits, etc.). In many cases, since, in the first place, planned priorities have not been based on sound economic criteria, inefficient industrial enterprises are fostered and nurtured to achieve the plan targets through various high-cost protective devices. The inefficiencies are further compounded as the costs of the downstream projects also begin to rise due to the high cost of protected inputs. Thus, poor plan formulation, the subsequent encouragement of inefficient industries, and the attempts to implement such a plan ultimately tend to be self-defeating.

The difficulties associated with detailed central planning can be traced to two (broad) major reasons: (i) the paucity of information and skills on which planning decisions are made, and (ii) the lack of an automatic error-correcting mechanism inherent in such a process. The former makes central planning an extremely expensive exercise for those countries that do not have the necessary human capital and informational infrastructure. The
latter increases the social cost of planning by nurturing inefficient industrial projects rather than permitting their demise; the automatic error-correcting mechanism is an essential characteristic of the market mechanism.

The problems associated with the planning process do not negate the need for industrial development plans, but suggest that the market mechanism may be effective in adapting some aspects of the plan. The scarcity of resources available to the state requires that planners should concentrate on areas that the market is least able to take care of. The issue, therefore, is not whether to plan or not to plan, but rather how and what to plan.

The goals of the planners should, therefore, be on establishing national priorities based on rational economic criteria, setting the "rules of the game" and determining the nature and volume of public goods and services. Thus, the process of planning should be treated as a rational application of policy instruments, of generating the necessary information that is not provided by the market, and modifying the market signals, where necessary. It should be recognized that detailed central planning and controls do not automatically ensure compliance and that successful planning entails an interdependence between the state and the private sector; the relation between the two is not a zero-sum game. Thus, the following conclusions emerge:

(i) There is a strong need for a consultative approach to planning that incorporates the consensus and objectives of the state as well as that of the private sector; thus the detailed direct vetting of individual projects is neither necessary nor sufficient to affect the private patterns of investment.

(ii) There is a role for the state to play in the formulation and the coordination of sectoral investment programs; this
is necessitated by the interdependence of industrial investments which generate strong externalities that cannot be reflected in the market system.

(iii) The plans, once formulated, should not be rigid and inflexible, but should be periodically updated to take account of uncertainties and to include new information and correct deviations; thus the planning process should be an iterative one; i.e., one which incorporates the concept of "rolling" or "sliding" plans.

(iv) In addition to the "rolling" plans, "rolling" multi-annual budgets which make provisions for the availability of financing the investments should be prepared. These budgets should be integrated with the plans to make the latter operational.

(v) The greatest potential benefit of planning lies not so much in the selection of particular alternatives, but in periodically generating such alternatives, in identifying bottlenecks and problems, in determining the key factors that should be considered and in assessing the sensitivity of certain variables to potential changes in other policy variables whose values are not known with any degree of certainty.

(vi) The consultative approach to plan formulation may be made effective and operational through the use of incentive mechanisms that work in conjunction with the market forces (e.g., taxes, tariffs and subsidies) rather than direct administrative controls (e.g., industrial licenses, price controls and import quotas). Thus, the indicative approach to planning is to be preferred to the
imperative approach commonly associated with detailed centralized planning. The finite resources of the state and the uncertainty associated with the future preclude the use of the latter approach and suggest the need for greater judicious use of the market forces.

(vii) Finally, the coordination and rationalization of government policies probably constitute the most important functions of planning. Planning should, thus, be treated as a rational instrument for organizing information, to explore the impact of alternative policies and to determine the costs and benefits of alternative objectives. As a result, the state can keep the private sector informed of its own investment programs and of the impact on economic growth of alternate investment strategies.
I. INTRODUCTION

The economic growth of the West has been accompanied by two divergent economic philosophies: laissez faire capitalism and Marxist economics; the latter purported to mitigate the undesirable effects of capitalism and to bring about a more equitable distribution of income. These divergent views regarding economic growth have had a strong impact on the independent nations of the developing world and the competing political ideologies and economic philosophies characterize the growth process in these countries today. In many cases, the result has led to the increasing involvement of the state in the process of industrialization.

In addition to the political ideologies that have justified increasing state intervention, there is also the economic rationale. The basic postulate is that in a developing country the market mechanism systematically misallocates resources between different uses at a given point in time or between current and future use of different resources. When markets fail, an alternative has to be found. The case for state intervention is, therefore, appended to arguments for market failure. In the case of the industrial sector, the market mechanism may lead to a non-optimal allocation of resources for any of the following reasons: (i) the divergence between private and social profit maximization; (ii) the insufficient exploitation of external

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economies; (iii) complementarities (interdependence) of industries which necessitate simultaneous rather than a sequential evaluation of investment possibilities; (iv) the absence of competitive futures markets which are necessary because the amount of information carried by the existing price systems tends to be inadequate for efficient investment planning; (v) the imperfection of investors' foresight due to the long lifetime of capital equipment; (vi) the individual entrepreneur's risk which may be higher than that confronting an overall investment program; (vii) the indivisibility of capital which leads to large rather than incremental changes; it is the latter which are necessary for a proper functioning of the market; and (viii) the imperfections in the capital and labour markets which are governed by prices, quotas and institutions.

Notwithstanding the general political and economic rationales for state intervention, there are many areas in the developing countries in which policy guidelines are needed and in which the differences in opinion continue to be very large. In the implementation of such policies, most developing countries have the choice of depending upon the indigenous private sector, or on private foreign enterprises, or on the state to act as the major force for development. These three options are obviously not mutually exclusive, and to varying extents most countries depend on some combination of all three. Discussion in the literature, however, tends towards the two extremes mentioned above. One school of thought argues that, since governments are politically motivated, generally badly organized and managed, state intervention would hinder rather than promote industrial growth. Thus, it is the private sector, both domestic and foreign, that is best suited to effectuate a reasonable, well-organized and efficient development effort.
At the other extreme is the school that claims that central planning and government ownership and control of the production process provide the most effective mechanism to growth. This viewpoint is based on arguments that central planning is a more efficient means of allocating resources, the existing private sector is weak and unimaginative and that it should be replaced by government ownership and detailed direct controls. In the middle lie the policy-makers who do not espouse either extreme and search for reliable guidelines to make policy decisions regarding the roles of the private and the public sectors.

The purpose of this paper is to clarify some of these issues which surround the role of the state and its contribution to industrial growth in the developing countries; the paper will also discuss some of the trade-offs associated with these issues. To the extent possible, the issues will be highlighted by the experience of developing and (some) developed countries. Thus, the approach taken here is to draw together and synthesize the lessons that may be learned from the various experiences.

Since the topic of state intervention is an extremely broad and general one, it is necessary to focus on selected topics. Three such topics are discussed and the paper is organized accordingly. The first topic, taken up in Section II, deals with the production of goods and services by the state; it focuses primarily on the role and efficacy of public sector enterprises. The second topic deals with the issue of direct industrial controls and instruments of intervention (Section III). The third topic (discussed in Section IV) deals with the role of the state in the planning process. Each section deals with the justifications for that particular form of intervention, the experience of selected countries, and the economic (or efficiency) implications associated with that intervention mode. In each of these
sections, it is shown that intervention has been excessive in many developing countries. The resulting policy implications suggest how this may be remedied and the interventions made more effective; they are presented at the end of each section. Since each of these three topics merits a separate paper in its own right, their treatment in this one paper is, by definition, not exhaustive. Section V concludes the paper.
II. THE PRODUCTION/OWNERSHIP OF GOODS AND SERVICES BY THE STATE

The dissatisfaction of the State with economic growth in the developing countries has led to state intervention in a variety of forms. The formation of public enterprises for the production of goods and services is merely one manifestation of this intervention. Over the past twenty years or so, this form of intervention, through state ownership or control of the means of production, has become increasingly popular in developing countries.

Most of the work in the field of analyzing public enterprises has been conducted by disciplines other than economics, primarily law and public administration. Thus, a considerable amount of the literature is concentrated on the legal status and on formal organization and types of public enterprises. The analytical economic work conducted in this field concentrates mainly on pricing and investment policies of public enterprises. Though useful and important (as will become clear later, see Section 2.3.2) the analysis is really independent of whether the goods in question are produced by private, public or "mixed" enterprises; it does not address the issue of determining the conditions under which public ownership and control are an effective means of organizing production.

The purpose of this section is to pull together the common strands of the many and varied aspects of public enterprise production in developing and developed countries and to distill some of the lessons of these experiences. It will selectively discuss the justification and objectives of public enterprises in developing countries (Section 2.1); their performance in a few selected countries will then be presented (Section 2.2). This will be followed by a discussion of the reasons for the performance and the errors
frequently encountered in practice (Section 2.3). The final section will discuss how these errors may be eliminated and the policy implications for developing countries.

2.1 The Reasons for the Creation of Public Enterprises

Public enterprises have been used as an instrument of state intervention by developed and developing countries alike. In many cases their creation is a response to the perceived limitations of the market mechanism, particularly where private entrepreneurship is weak as is the case in many developing countries. In other situations, it is a deliberate response to break out of the historically determined relationships faced by many newly independent nations.

The actual or stated reasons for the creation of public enterprises are many and diverse. They are expected to fulfill a number of functions and attain, often simultaneously, several social objectives; the relative weights attached to each objective vary from country to country. Public enterprises are created to promote those social objectives or externalities that, in general, would be inconsistent with private profit maximization. The attraction of the public enterprise to the state, therefore, stems from the fact that it offers an additional policy instrument to move the process of development in the direction desired or determined by the state. Its (potential) misuse lies in the attempt by the state to use this single policy instrument for multiple, often mutually exclusive, targets or objectives. Table 2.1 presents an incomplete list of the objectives of public enterprises; it is intended to be illustrative only. Even this partial listing of objectives is too long to warrant a detailed discussion; the remainder of this section will, therefore, discuss only a few of the most salient justifications for the creation of public enterprises.
Most motives for state intervention arise from a variety of market failure involving imperfections in factor markets, paucity of information, and high risk aversion. Thus, entrepreneurial support and entrepreneurial substitution motives 1/ of the state are prevalent in activities in which private profitability is low, but social profitability is high. The state may compensate for this entrepreneurial failure through the provision of technical assistance and subsidized credit (i.e., entrepreneurial support), or it may undertake the activity itself (i.e., entrepreneurial substitution).

Public enterprises have, therefore, been created in countries where the investment requirements for the projects are very large and the private expected returns, at least in the short run, are too low to provide a sufficient incentive for private capital. Related to this is the private sector's perception of risk; there is a difference in the attitude towards risk between the private and the public sector. This is particularly true where large investments are necessary as in the capital-intensive industries such as fertilizers, steel, and petrochemicals; the private sector may be too cautious and risk averse to undertake the investment. If the project is deemed socially desirable but is expected to be privately profitable, at least in the short run, then this provides the justification for state intervention in many countries. However, in some cases, ex-post the cautious behavior of the private sector has been justified, while the state, instead, has seriously erred on the question of economic viability. Leaving the issue of risk aside, in many developing countries capital scarcity is very common and the private capital markets and institutions are not sufficiently well developed to

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1/ These terms are borrowed from Jones [58] who has a three-group-nine-category classification of motives.
<table>
<thead>
<tr>
<th></th>
<th>Objective</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Provide entrepreneurial support/substitution</td>
</tr>
<tr>
<td>2</td>
<td>Control monopolies</td>
</tr>
<tr>
<td>3</td>
<td>Control commanding heights</td>
</tr>
<tr>
<td>4</td>
<td>Provide public services</td>
</tr>
<tr>
<td>5</td>
<td>Earn profits for investment</td>
</tr>
<tr>
<td>6</td>
<td>Utilize resources efficiently</td>
</tr>
<tr>
<td>7</td>
<td>Prevent business failure</td>
</tr>
<tr>
<td>8</td>
<td>Offset externalities</td>
</tr>
<tr>
<td>9</td>
<td>Train skilled managers and technicians</td>
</tr>
<tr>
<td>10</td>
<td>Increase employment</td>
</tr>
<tr>
<td>11</td>
<td>Raise output</td>
</tr>
<tr>
<td>12</td>
<td>Reduce income inequality</td>
</tr>
<tr>
<td>13</td>
<td>Promote regional development</td>
</tr>
<tr>
<td>14</td>
<td>Stabilize prices</td>
</tr>
<tr>
<td>15</td>
<td>Subsidize necessary commodities</td>
</tr>
<tr>
<td>16</td>
<td>Set &quot;modernization&quot; example</td>
</tr>
<tr>
<td>17</td>
<td>Earn/save foreign exchange</td>
</tr>
<tr>
<td>18</td>
<td>Promote primary exports</td>
</tr>
<tr>
<td>19</td>
<td>Achieve socialism</td>
</tr>
<tr>
<td>20</td>
<td>Counterbalance power of domestic capitalists</td>
</tr>
<tr>
<td>21</td>
<td>Increase national self-sufficiency</td>
</tr>
<tr>
<td>22</td>
<td>Enhance national prestige</td>
</tr>
<tr>
<td>23</td>
<td>Implement government policy</td>
</tr>
<tr>
<td>24</td>
<td>Promote national security</td>
</tr>
<tr>
<td>25</td>
<td>Offset multinationals</td>
</tr>
</tbody>
</table>

1/ The rank ordering is not intended to be suggestive of priorities.
intermediate between savers and investors. Thus, ceteris paribus, the problem of mobilizing investment is greater for capital-intensive sectors; state ownership or control (through state financial institutions), therefore, becomes inevitable.

Governments also often choose to own monopolies rather than regulate them in order to ensure that the profits accrue to the public sector rather than the private. Monopolies tend to arise in industries with strong economies of scale. Public utilities provide an example of the output of a "natural monopoly." Most developed and developing countries, therefore, have nationalized or closely regulated industries such as railways, public utilities and communications. In general, these industries are characterized by strong forward linkages and weak backward ones. They do not lead to or initiate growth, but are necessary to avoid bottlenecks. In addition, they produce non-tradeable goods and tend to be highly capital-intensive. The scarcity of private investment capital and the associated risk factor necessitate public operation; the possible alternatives are private monopoly, regulation or no operation.

The capital-intensive manufacturing industries provide examples of monopolistic or oligopolistic industries with tradeable outputs. Fertilizers, steel, petrochemicals may be traded on the international market and, in an open economy, would not require state control; the external sector would provide the required control or competitive pressure. Yet, it is not unusual to find that in many countries, even where the private sector is prepared to undertake the risk and provide the capital, state ownership of these industries exists. This leads to the "commanding heights" justification.
The "commanding heights" or the "key sectors" of an economy, particularly of one that is in the early stages of development, are defined as the natural resource and the capital-intensive sectors of the manufacturing industries. This control of the commanding heights rationale for intervention is often tied up with the political ideology of socialism and the belief that state control of the "commanding heights" is a necessary condition for equitable growth.

In many countries, however, nationalization has taken place not to capture the commanding heights or monopoly profits, but primarily because of the perceived failure of the initiatives of the private sector. Coal, airplanes and Renault automobiles in France and coal, steel and road transport in Britain are examples where increasing the efficiency of the sectors was an important consideration and which led to the substitution of the private sector by the public. In many developing countries, public enterprises have been set up outside the "traditional" fields because the private sector does not or is not expected to perform well. This "managerial substitution" motive is also the rationale behind those cases where private sector operation has resulted in the bankruptcy of an enterprise (i.e. a bail-out or salvage operation). For "social" reasons, the governments of many developed and developing countries are reluctant to accept the laws of economic Darwinism. In the U.K. there are the examples of British Leyland and Rolls-Royce. In Argentina, nationalization of important local firms facing bankruptcy has been undertaken. In Israel, nationalization has been motivated by the need for capital infusion in ailing firms and also in firms in which the foreign owner ceased operations; an example of the latter is the Haifa refineries which were owned by the British Petroleum Company and which the government was obliged to purchase when the company ceased its operations [45].
There are also other constraints that help to determine the choice between the private and public sector in developing countries. The extent of public enterprise is often limited by the administrative, technical and managerial skills available to the government; similarly the extent of the private enterprise is limited by the willingness of entrepreneurs to innovate and of investors to assume risks. Hence, the "mixture" of public and private enterprise through which industrialization is brought about may well be decided by considerations other than political or ideological ones. This situation is well illustrated by the experience of Turkey, where the scarcity of individual entrepreneurship compelled the government to intervene and substitute its own entrepreneurial capacity for the private one. Another example, in the opposite direction, is India, where the resilience of the private sector permitted its participation and operation in industries which had been effectively demarcated for the public sector by the two Industrial Policy Resolutions of 1948 and 1956 [44].

In general, most developing country governments view their role in the production process as one of "gap-filling" or of "pioneering." In a UN-sponsored study of thirty-two countries in Africa, Asia, Europe and Latin America [45] it was found that nearly all the governments tended to regard themselves as performing a "pioneering" rather than a "gap-filling" role. In addition, those governments with economic plans stressed their pioneering role more than those without.

It can, therefore, be seen that there are many justifications for state intervention in the production process. They incorporate economic, political and historical considerations. This will become more apparent as
specific examples are discussed below. The crucial issue facing many developing countries today is how has the decision to intervene in the production process been justified in terms of the public enterprise's contribution to economic growth and income distribution? In other words, has the process of development benefitted or has it been hindered by the creation of public enterprises? The option to use such enterprises to promote growth is supported by the fact that in many developing countries it takes time to develop an enterprising private sector. On the other hand, public enterprises that waste resources are obviously detrimental to the growth process. To delve further into this issue, we now turn to the available evidence regarding the performance of public enterprises in developing countries.

2.2 The Performance of Public Enterprises

There are several studies that have, in one form or another, inquired into the performance of public enterprises in various countries. Many studies leave a lot to be desired and the evidence that is available with regard to the performance of public enterprises is mostly based on financial data leading to financial profitability as the predominant indicator of performance 1/. Based on this criterion, the picture of state-owned enterprises is a rather dismal one involving large and mostly continuing financial losses.

Gantt and Dutto [37] conducted an aggregate study of the financial performance of sixty-four government-owned corporations in twenty-six countries covering an average period of seven years. The countries included in the study covered the continents of Africa, Asia, Europe, and Latin America.

1/ Section 2.3.1 discusses in detail the limitations of using financial profitability as a measure of performance.
The industries investigated were the Railways, Other Transport, Petroleum, Electricity, Communications and Other Industries. They showed that the performance of these enterprises varied substantially by industry and by continent. On the average, however, the profitability excluding depreciation amounted to 8 percent of "current activity." 1/ (See Table 2.2 for details.) Depreciation for the group averaged 24 percent of current activity, resulting in an average operating deficit of 16 percent of current activity. The group as a whole, therefore, did not generate sufficient funds for replacement capital. Within the group, the petroleum industry performed the best (13.8% of current activity) and the railways the worst (-40.5% of current activity). (See Table 2.3 for details.) After taking investment requirements into account, the financial positions of the firms showed that on the average, for each unit of "current activity," the corporations needed 66 percent of the funds to be provided from external sources to finance deficits and/or investments. In the study, external financing was required for all industries in all areas except communications (in Europe) and other transport (in Africa). (See Table 2.4.) The experience of state-owned corporations, therefore, showed that a developing country, on the average, cannot expect to generate internal funds from the creation of public enterprises. There were, however, exceptions within the group when some corporations generated surpluses in some years; but they were the exceptions and not the rule.

1/ In order to convert data to a comparable form across corporations and to avoid currency conversion problems across countries, the authors used percentages of a base. Instead of taking assets as a base, they used "current activity" of the corporations which they define as the average of current revenues plus current expenditures; i.e., half the sum of current revenues and expenditures. The use of this base was justified by the authors in order to avoid the problems of calculating the current value of assets; a problem they considered to be virtually insurmountable in countries with high inflation rates. The authors claim that the use of this base has no significant effects on their results and conclusions.
### Table 2.2: Profitability (Including Depreciation) by Area and Industry

(Percent of Activity)

<table>
<thead>
<tr>
<th>Industry</th>
<th>Europe</th>
<th>Latin America</th>
<th>Africa</th>
<th>Asia</th>
<th>Over-all Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Railways</td>
<td>-20.0</td>
<td>-57.1</td>
<td>18.2</td>
<td>16.6</td>
<td>-13.5</td>
</tr>
<tr>
<td>Other transport</td>
<td>-0.5</td>
<td>-3.8</td>
<td>30.2</td>
<td>14.5</td>
<td>10.9</td>
</tr>
<tr>
<td>Petroleum</td>
<td>10.1</td>
<td>43.3</td>
<td>...</td>
<td>...</td>
<td>33.8</td>
</tr>
<tr>
<td>Electricity</td>
<td>27.4</td>
<td>21.0</td>
<td>21.4</td>
<td>37.7</td>
<td>27.2</td>
</tr>
<tr>
<td>Communications</td>
<td>24.8</td>
<td>26.7</td>
<td>-27.3</td>
<td>-10.2</td>
<td>5.7</td>
</tr>
<tr>
<td>Other industries</td>
<td>-12.4</td>
<td>-6.6</td>
<td>31.7</td>
<td>...</td>
<td>-6.3</td>
</tr>
</tbody>
</table>

Over-all mean      | 0.7    | 2.1           | 19.5   | 16.4 | 8.0           |

Source: Gantt and Dutto [37]

### Table 2.3: Net Income by Area and Industry

(Percent of Activity)

<table>
<thead>
<tr>
<th>Industry</th>
<th>Europe</th>
<th>Latin America</th>
<th>Africa</th>
<th>Asia</th>
<th>Over-all Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Railways</td>
<td>-47.0</td>
<td>-84.1</td>
<td>-8.8</td>
<td>-10.4</td>
<td>-40.5</td>
</tr>
<tr>
<td>Other Transport</td>
<td>-30.5</td>
<td>-33.8</td>
<td>0.3</td>
<td>-15.5</td>
<td>-19.1</td>
</tr>
<tr>
<td>Petroleum</td>
<td>-9.9</td>
<td>23.3</td>
<td>...</td>
<td>...</td>
<td>13.8</td>
</tr>
<tr>
<td>Electricity</td>
<td>6.4</td>
<td>-</td>
<td>0.4</td>
<td>16.7</td>
<td>6.2</td>
</tr>
<tr>
<td>Communications</td>
<td>4.8</td>
<td>6.7</td>
<td>-47.3</td>
<td>-30.2</td>
<td>-14.3</td>
</tr>
<tr>
<td>Other Industries</td>
<td>-36.4</td>
<td>-30.6</td>
<td>7.7</td>
<td>...</td>
<td>-30.3</td>
</tr>
</tbody>
</table>

Over-all mean      | -23.3  | -21.9         | -4.5   | -7.6 | -16.0         |

Source: Gantt and Dutto [37]

### Table 2.4: Surplus-After-Investment by Area and Industry

(Percent of Activity)

<table>
<thead>
<tr>
<th>Industry</th>
<th>Europe</th>
<th>Latin America</th>
<th>Africa</th>
<th>Asia</th>
<th>Over-all Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Railways</td>
<td>-37.7</td>
<td>-89.4</td>
<td>-8.6</td>
<td>-12.5</td>
<td>-41.0</td>
</tr>
<tr>
<td>Other Transport</td>
<td>-15.3</td>
<td>-50.2</td>
<td>5.5</td>
<td>-4.5</td>
<td>-19.3</td>
</tr>
<tr>
<td>Petroleum</td>
<td>-14.0</td>
<td>-26.7</td>
<td>...</td>
<td>...</td>
<td>-23.1</td>
</tr>
<tr>
<td>Electricity</td>
<td>-21.9</td>
<td>-93.2</td>
<td>-79.5</td>
<td>-171.1</td>
<td>-102.0</td>
</tr>
<tr>
<td>Communications</td>
<td>4.5</td>
<td>-24.9</td>
<td>-41.1</td>
<td>-58.1</td>
<td>-32.0</td>
</tr>
<tr>
<td>Other Industries</td>
<td>-174.4</td>
<td>-55.1</td>
<td>-417.4</td>
<td>...</td>
<td>-138.1</td>
</tr>
</tbody>
</table>

Over-all Mean      | -80.0  | -56.3         | -61.1  | -74.8| -66.3         |

Source: Gantt and Dutto [37]
Government transfers of funds were required for all corporations in all areas except the petroleum industry in Europe and Latin America. These transfers were the source of half the external funds required to keep the public corporations afloat. The remainder of the external funds were obtained in the form of loans from the central government, from other lenders in the country or from abroad. Based on this rather aggregate study, the authors concluded that "government-owned enterprises rather than serving as a focal point for collecting resources for their own investment or for other purposes have generally placed a financial burden on parent governments." [37, p. 128].

In addition to this aggregate study of state-owned enterprises, country-specific studies have also been conducted. They tend to paint a similarly bleak picture; i.e. they do not indicate any significant difference in the financial performance of public enterprises. (See Table 2.5.)

2.2.1 Public Enterprises in Turkey

In Turkey, the extent of state intervention in the production process is quite extensive. After the collapse of the Ottoman Empire and the establishment of the Republic in 1923, the state began to play an important role in the social and economic development of the country. During the early period of economic recovery (1923-32) the economic programs resulted in little increase in private industrial activity. Due to the scarcity of private entrepreneurship and capital, the state assigned the job of establishing a modern industrial sector to the public enterprises. Thus, the intellectuals and government leaders were persuaded of the need for state intervention in the industrial sector. Consequently, the government eventually adopted a policy of "etatism" or government intervention in the economic affairs of the
Table 2.5: THE PERFORMANCE OF PUBLIC ENTERPRISES IN SELECTED DEVELOPING COUNTRIES

<table>
<thead>
<tr>
<th>Country</th>
<th>Year</th>
<th>Profitability (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Turkey</td>
<td>1966/67 [94]</td>
<td>1 a/</td>
</tr>
<tr>
<td></td>
<td>1968 [112]</td>
<td>4.8 b/</td>
</tr>
<tr>
<td></td>
<td>1972 [112]</td>
<td>6.2 b/</td>
</tr>
<tr>
<td>India</td>
<td>1960/61 [90]</td>
<td>2.8 c/</td>
</tr>
<tr>
<td></td>
<td>1970/71 [12]</td>
<td>Low</td>
</tr>
<tr>
<td></td>
<td>1972/73 [54]</td>
<td>3.8 c/</td>
</tr>
<tr>
<td></td>
<td>1974/75 [122]</td>
<td>11.5 d/</td>
</tr>
<tr>
<td></td>
<td>1976 [53a]</td>
<td>2.0 e/</td>
</tr>
<tr>
<td>Korea</td>
<td>1972 [58]</td>
<td>High</td>
</tr>
<tr>
<td>Ghana</td>
<td>1964 [35, 64]</td>
<td>Large Negative</td>
</tr>
<tr>
<td></td>
<td>1969/70 [64]</td>
<td>Large Negative</td>
</tr>
<tr>
<td>Nigeria</td>
<td>1967 [12, 46, 47]</td>
<td>Large Negative</td>
</tr>
<tr>
<td>Uganda</td>
<td>1971/72 [35]</td>
<td>High</td>
</tr>
</tbody>
</table>

| a/ Profits as a percent of investment. |
| b/ Net income before interest and corporate tax as a ratio to net assets. |
| c/ Overall rate of return. |
| d/ Gross profit as share of capital employed. |
| e/ Net profits (after depreciation and interest) as a percent of total assets. |

Notes:

1. The figures in square brackets in the second column refer to the studies from which the financial probability figures are taken.

2. Where figures for financial probability are not available, "High," "Low," and "Large Negative" have been used to indicate the rough orders of magnitude.
country. Through the public enterprise sector, the state became the sole producer in many areas. Among the new industrial enterprises were textile plants, cement factories, paper mills, a glass factory and an iron and steel works. Government activity in transportation, communications and finance also became increasingly important. Etatism also resulted in the nationalization of existing privately owned enterprises such as the coal mines and sugar factories.

Currently there are more than one hundred non-financial public enterprises, with active state participation in about sixty-five others. They employ 20 percent of all non-agricultural wage earners and account for 40 percent of public sector investment. They operate in many sectors of the economy. Most of the value added, however, is concentrated in the transportation, communications and industrial sectors [71].

One study of Turkish public enterprises showed that the financial profits of these corporations averaged 1 percent of investment in 1966 and 1967; private industry averaged 20 percent in the same years [94]. Another, more current study based on Turkish published data [112] indicates that the net income before interest and corporate tax as a ratio to net assets increased from 4.8 percent in 1968 to 6.2 percent in 1972. However, the author expressed some concern regarding the validity of this published information which tended to overstate the actual returns. A third study [71] indicates that, in general, the profitability of public enterprises has been low. The financial performance of these enterprises, therefore, does not appear to be outstanding.

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1/ For a discussion of comparing the financial profitability of public and private enterprises, see Section 2.3.1.
The studies indicate that the market structure within which these public enterprises operate in Turkey is essentially a non-competitive one. A monopoly position at home for some enterprises eliminates domestic competition; in addition high tariff barriers and quantitative restrictions insulate these corporations from foreign competition. Extra benefits include tax exemptions, priority on allocations of scarce resources, first claims on foreign currency and priority access to government credit. In addition, state intervention in the operations of these enterprises is rife at every level. The wage rates are set by legislation, the selection and promotion of managers is subject to state interference which also extends to the pricing and investment decisions of the firms. Price control is also common for some public enterprises, resulting in less than maximum profits and low returns to capital. Government pricing policies have often resulted in a lower than the equilibrium price in the market, at the same time wage rates have often exceeded the market equilibrium. Consequently profits and returns to capital have been depressed.

The studies also indicate that a substantial amount of public enterprise investment was financed from external sources, mainly by borrowing from the Central Bank and other public financial institutions. Despite high inflation rates, the public enterprises were unable to generate surpluses to completely finance their investments, primarily because of the financial and pricing policies imposed on them. "The carefully circumscribed decision-making of public enterprises by the government hierarchy, the low quality of management that characterizes most of the enterprises, and the use of enterprises to carry out non-economic social policies of the government have all
initiated against a vigorous public enterprise sector that aggressively seeks to maximize growth by the creation of larger surpluses "[71, p. 73]. A side-effect of the polices followed, and one which also had an impact on the industrial sector as a whole, was the (resulting) decrease in the sources of credit for private sector investment brought about by the extensive borrowing of the public sector enterprises. In 1977, the public enterprises borrowed 20 billion lira from the central banks. Moreover, budget transfers to these enterprises rose from 18 billion lira ($1 billion) in 1976 to 32 billion lira in 1977. For 1978, the total financing requirements of these public firms is expected to reach 87 billion lira ($3-1/2 billion) [33a].

The impact of public enterprises on the Turkish industrial sector, however, has not been all bad. The growth rate for public transportation, communication, and industrial public enterprises averaged about 8 percent for a long time [94]. The resulting industries established in the public sector had important externalities for the private sector due to their training programs which supplied skilled workers to other industries, the introduction of new technology to Turkey, and the setting-up of modern sales organizations. The public sector also operated many plants that served as models for the other firms. These public enterprises, however, required large investment capital which was obtained by borrowing from the other sectors of the economy.

The type of analyses conducted in these studies makes it very difficult to establish whether the performance of the industrial sector would have been significantly better had these firms operated as private profit maximizers free of government control and more responsive to market pressures. The inordinate amount of bureaucratic interference, however, does appear to have taken its toll and constrained the growth of these enterprises. It is
interesting to note that at one stage (in the 1950s) there was an attempt to reduce the influence of the government and of the public enterprises. However, plans to sell the profitable ones to the private sector were met by political outrages and there were no buyers for the unprofitable ones. 1/ In addition, high capital outlays or the potential lack of profitability precluded private sector investment in those industries that the state wished to establish. There was, therefore, no resulting decrease in state influence during this period.

2.2.2 Public Enterprises in India

The situation in India is not too different. The historical legacy of public sector enterprises lies in the two Industrial Policy Resolutions of 1948 and 1956. The first one in some sense represented a compromise between the political and economic rivalries that were prevalent prior to independence; i.e., between the industrialists who opposed central planning and nationalization, and the socialist leaders of the Indian National Congress. This first Industrial Policy Resolution demarcated the public utility industries and some of the heavy manufacturing industries for the public sector. The rest of the industrial sector was open to both the private and the public sector. Total nationalization, however, was held in abeyance for 10 years. The second resolution of 1956 was very similar to the first in that it re-emphasized the allocation of industries between the public and the private sector, but with greater emphasis on the state’s involvement. It also made no mention of the nationalization policy stated in 1948 [15].

1/ The causes of unprofitability of these firms is not clear; these causes (e.g., bad investment or poor management, etc.) may possibly explain the lack of buyers.
In the early years after independence, the economic/political, private/public issue was for all practical purposes non-existent; there was a convenient merging of economic and ideological factors as the state was in a much better position than the private entrepreneur to invest, particularly in the heavy industries where large-scale capital requirements were necessary and risks were high. However, by the early 1960s, it was no longer possible to justify state intervention on those grounds alone; i.e. that the private sector would not invest in socially desirable projects. Investments in heavy industries were not always considered privately unprofitable because of the investment and protectionist policies established by the state. In addition, financial institutions established by the state made available the necessary capital for large-scale investments. As the private sector became increasingly able and interested in investing in such industries, the conflict between pragmatic economic considerations and the ideological and purely political factors became more pronounced. The inevitable result was the increase in restrictions placed on the private sector and in the political and bureaucratic involvement in the operations of the public sector enterprise.

The economic efficiency of the public enterprises is an important issue given the extent of public sector investment in India. Similar to the other cases cited above, investigations into the economic performance of public enterprises have concentrated on the financial aspects. Social profitability figures are unavailable. In India, until 1959, no emphasis was placed on the issue of profitability of public enterprises; the principle under which they operated was that of "no-profit-no-loss." Profitability was given greater consideration after that period when the Government experienced difficulty with raising the necessary finance for its Five Year Plans through
the traditional methods of taxation; profits generated by state enterprises were expected to alleviate that problem. Since then, emphasis has been placed on the financial obligations of the public sector in the form of targets set for surplus generation. The public enterprises did not meet these target levels. The Central Government enterprises fell short of the Third Plan (1960/61-1965/66) Targets by 10 percent and the State Government enterprises by 30 percent. Overall the shortfall was 17 percent. In the Fourth Plan (1969/70-1973/74) the targets were lowered by 36 percent for the Central Government Enterprises and by 33 percent for the State-level enterprises [12].

The earnings of public enterprises in India have varied but on the average they have not covered the opportunity cost of capital. The financial profitability is low despite the fact that interest rates on public loans to these companies are arbitrarily low and in some cases zero. One study calculated an overall rate of return of 2.8 percent for 1960-61 [90]. This was the best of the three years studied in detail. The average return was lowered due to the heavy losses of Hindustan Steel which was a new concern at that time. However, a more recent study for 1972-73 shows Hindustan Steel still being unprofitable and the average return for public sector enterprises up to only 3.8 percent [54].

Another study indicates that for the FY70-71, the public sector enterprises the profitability, in general, was also low [12]. The losses were concentrated in the Industrial and Manufacturing Category where investments have traditionally been the largest. Enterprises operating in the quasi-monopolistic markets of petroleum and oil performed the best, whereas those associated with steel and mining performed the worst. However, these are aggregate figures which tend to cloud variations in performance. The study
shows that the 10 firms accounting for 43 percent of investment had losses totalling up to 87 percent of all deficits; i.e., the losses were incurred by few very large firms. Crude comparisons with the private sector showed that, on the average, the returns in the private sector were higher than in the public sector; this calculation took into consideration the greater subsidization of inputs into the public sector; e.g., lower interest rates, which indicate that public sector performance relative to the private sector was in fact much worse.

The World Bank Report of 1977 indicates a similar picture for some selected public sector firms in India. Until 1971/72, the net profits were negative and from 1974/75 they became positive. In that year, the gross profit as a share of capital employed amounted, on the average, to 11.5 percent, the highest since 1966/67. This turnaround in performance has also been noted by Jha [57] who attributes this change mostly to "learning-by-doing". However, the learning process has simultaneously operated in the private sector which, according to Jha, continues to perform better than the public sector firms. 1/ His studies of the performance of the public sector (steel, engineering and chemicals) relative to that of the private sector indicate that the financial performance of the private sector has been superior to that of the public sector throughout the period 1961-75. In 1976, however, public enterprises appear to have earned a rate of return of just over 2 percent; the private sector, on the other hand, earned a rate

1/ It should be noted that in India the private sector often has significant government capital/equity in it. It is the management that remains "private." The purely private sector, i.e., with no government equity, is very small.
of return of over 9 percent. Moreover, between 1972 and 1976, the inefficiencies in the public sector have been estimated to cost the country about Rs. 32 billion (approximately $3 billion) [53a].

Among the many possible reasons for the poor financial performance stated, the political decision to invest in heavy industries is considered to be important. The concentration on capital-intensive investment has not been the result of any process of comparing economic returns. The investment has been based on an a priori definition of key industries and was institutionalized by the Second Industrial Policy Resolution of 1956 which effectively demarcated the public and the private sector industries. This might be explained as a method of channelling private enterprises into fields in which entry is easier and competition more likely, while limiting the scope for high profits in potentially concentrated fields. This has, however, had the (unintended?) effect of reducing, if not eliminating, any competition between the private and the public sector firms. This approach appears to be inferior to that used in Mexico where public enterprises were used as a positive force for growth in oligopolistic markets in the steel industry [95]. 1/

It has also been argued that the technical and economic analysis underlying public sector decisions has been of extremely poor quality. This has been compounded by the political intrusion of the state in the selection of skilled staff and by the overstaffing of unskilled labor in the interests of local employment. In addition, the widespread nature of bureaucratic controls and the concommitant corruption has had the inevitable result of the atrophying of initiatives on part of civil servants and the tendency to

1/ See Section 2.3.5 for details regarding the Mexican steel industry.
"routine-mindedness and inflexibility" to ensure that no conceivable rule was broken.

The improvement in performance, as detected by Jha, seems to indicate that the public enterprise management appears to have at last come to grips with the complexities of planning and production. Over a ten-year period, they appear to have determined the "correct" organizational and staffing patterns necessary. It appears to be a significant externality of the state's decision to pioneer the establishment of a capital goods industry [57]. However, the total economic cost to the nation of achieving the improved performance of the public enterprises has not been determined. Thus, even if public enterprises in India are now able to attain their targets, it is unclear whether this has been the most cost-effective method of achieving them.

2.2.3 Public Enterprises in Korea

Public enterprises in the Republic of Korea (henceforth "Korea") are of particular interest because the government and the political structure is associated with the "right" whereas public enterprises, which are used quite extensively in Korea, represent a tool commonly associated with the "left." From 1963 to 1972, the output of the public enterprise sector grew at a real average annual rate of 14.5 percent while the economy as a whole grew at 9.5 percent and the non-agricultural economy at 12.2 percent. During the same period, about 30 percent of gross investment was absorbed by public enterprises. In 1971, the public enterprise sector as a whole had direct and indirect imports that exceeded total exports, resulting in an 11.6 percent sectoral trade deficit. The newer enterprises established were largely import substituting and it has been estimated that the nation's current account
deficit would have been 25 percent larger in the absence of these enterprises [58].

As in many developing countries, most of the public enterprises in Korea are in the very capital-intensive sectors which exhibit strong economies of scale. They operate in highly imperfect product markets and dominate the most concentrated sectors of the economy such as petroleum refining, fertilizers, tobacco manufactures, and non-ferrous ore-mining. [1] In addition, they rely more heavily on subsidized capital than do firms in the private sector. Thus, while they absorb approximately 30 percent of the investment, the direct and indirect contribution to employment is of the order of 5-6 percent. Employment generation would be lower except for the tendency of these sectors to overstaff the firms [55, 58].

Unlike many developing countries, the state’s reliance on the public sector is not a function of ideological or historical imperatives; it is rather a pragmatic response to the deficiencies and imperfections of the market which could have resulted in socially undesirable results as perceived by the state if left to the private sector. Some of these imperfections are those created by natural monopolies and are common to most developing countries. Up to 1961, public enterprises were confined to these activities except for that of the revenue-generating cigarette monopoly. It was the new enterprises established subsequently for development reasons that contributed to their high growth; these enterprises were intended to overcome the various private entrepreneurial, managerial and market shortcomings. The expansion of this sector led to the production of 13.6 percent of all non-

[1] The concentration ratios in each of the above industries in 1972 were 0.98, 0.70, 0.77 and 0.92 respectively [58].
agricultural output in 1972. This is high by international standards for mixed economies; it is similar to that in India in 1968-69 (13.5 percent) and higher than that of U.K. (11 percent in 1967) and Italy (12 percent in 1971-72).

The performance of public enterprises in Korea is considered to be very good, particularly by world standards [55, 58]. At the disaggregated firm level no significant example of inefficiencies that characterize public enterprises in many developing countries has been found. In the particular cases of Korean iron and steel and fertilizer industries, the engineering efficiency was found to be high by developing country standards and not too different when compared with similar industries in the developed countries. Unlike many developing countries, the public enterprise sector in Korea made a total accounting profit (of 90.4 trillion Won) in 1972. Of the 125 firms considered by Jones [58], 41 (or 33 percent) made losses, but the profits generated by the remainder outweighed those losses, resulting in a net surplus for the sector. 1/ Moreover, in 1978, it has been estimated that with the exception of the railways and the Grain Management Fund (GMF), Korea's major public enterprises "pay their own way" [53a, p. 56].

The studies [55, 58] suggest that the public sector enterprises are less cost-efficient than enterprises in the private sector. As in most developing countries, however, public enterprises in Korea benefit from explicit subsidies in the form of lower interest rates, and implicit subsidies in the form of transfers of special rights yielding monopoly profits. Therefore, the accounting profits as presented are not indicators of economic

1/ It should be noted that the performance figures presented included all public enterprises, not just those in the industrial sector.
efficiency; a detailed analysis at the enterprise level would be necessary to determine this.

The underlying reasons for the performance of public enterprises relative to private ones are similar to those in most countries; viz. the employment structure of public enterprises which results in large wage bills; the risk-aversion of bureaucrats which results in satisficing rather than maximizing behavior; the political considerations involved in management appointments and the lack of any relationship between salaries and performance. "In sum, it is arguable that public enterprise managers are generally capable of carrying out a clear command, but the effective signals given by the control structure do not stimulate cost efficiency" [58, p. 180].

If the above is true, what explains the performance of public enterprises in Korea relative to those in most developing countries? Unfortunately, no detailed and analytical investigation of this issue has been conducted. The impressionistic views, however, are that the absolute level of efficiency of public enterprises is high due to the government's general dedication to growth and to the skilled and energetic labor force. Any prolonged or blatant inefficiency is not tolerated for too long and is eventually brought to the attention of the President of the Republic; the incentives for efficiency under such circumstances are quite strong. "Public enterprises may thus be potentially less inefficient in "hard" states where political authority is able to act decisively" [58, p. 207].
2.2.4 Public Enterprises in Ghana, Nigeria and Uganda

Public enterprise activity in three African countries, Ghana, Nigeria and Uganda, provides interesting comparisons of performance. The first two, Ghana and Nigeria, show patterns of poor performance, whereas Uganda, until 1971 (when Amin took over the reins of power), was the outstanding African example of superior performance. The experience of these three countries is briefly discussed below.

In Ghana, prior to 1960, state intervention in the form of public enterprises was quite small. Government activity was restricted to public utilities, a few industrial and some agricultural schemes. After the Second Five-Year Plan in 1959, government activity in productive enterprises increased substantially and by 1966 the number of state enterprises had grown to fifty-four and there were twelve joint state/private establishments.

The performance of the state enterprises was uniformly bad. The most current study available shows that in 1964 thirty-two out of thirty-five enterprises reported an accumulated loss of £39.7 million. The other three enterprises had not reported. The joint state/private enterprises performed better in that year; only one reported a loss [35]. This poor performance of public enterprises led to the formation of the State Enterprises Secretariat. It was supposed to safeguard the interests of the state in the joint enterprises. The Secretariat conducted a series of courses for management and supervisors. Special management agents were hired for those enterprises with severe technical problems. This had some salutary effect; many enterprises began to break even or report profits whereas others were able to reduce losses. By the end of the decade (1969/70), another study [64]
shows that the financial profitability of public enterprises had improved somewhat, though the aggregate losses recorded were still quite high. In addition, this study confirms the superior performance of the joint state/private enterprises and notes "the persistent co-existence within individual industries of loss-making public enterprises with private firms which may be assumed to have been profitable by virtue of their continued existence" [64, p. 218].

One reason for the poor performance of public enterprises in Ghana was that Nkrumah's policy of building mass popular support led to the alienation of a significant number of educated and powerful elites. This resulted in public projects that tended to be impressive and visible in order to reflect nationalistic aspirations; they were also primarily used to generate mass employment opportunities. This concern with project visibility and employment generation, however, conflicted with the objective of operating a profitable state enterprise.

Another reason for the poor performance of Ghanian state enterprises in the early years is that a large proportion of them had just begun operations. This is not atypical; many enterprises accumulate losses in the development stage. What is striking is that the emphasis on public enterprises had produced only firms with outstanding financial losses. Further, some of the companies reporting profits had been investigated because of their inaccurate reporting of their accounts and because of bribes and possible fraud. In an attempt to correct these problems, the post-Nkrumah regime took steps to reverse the policies of the former regime. They included the sale of some state enterprises to the private sector, the lay-off of workers
to rectify the blatant overstaffing that had taken place, and the tightening of the control of the remaining state enterprises by the secretariat. Nevertheless, poor projects planning, the overstaffing of public firms, corruption, and multiple objectives expected of managers are among the many problems that still continue to plague public enterprises in Ghana [64].

Nigeria is an example of a country that has combined private sector growth with the use of national development corporations and other quasi-governmental bodies. In 1949, three regional development production boards were formed for each of the Northern, Eastern, and Western Regions. In 1954 they were reorganized and renamed the Northern, Eastern and Western Nigeria Development Corporations. Prior to 1954, the production boards' activities were concentrated on the provision of loans and grants to public authorities, on direct investment in social overhead projects and on schemes related to crop production and processing. In 1955, there was a major shift in emphasis: the policy changed to investment in large-scale manufacturing and agricultural activities, often with the participation of the private sector. The greatest amount of investment activity of these development corporations occurred after this shift in emphasis in 1955.

The performance of all three development corporations has been reasonably poor [12, 46, 47, 103]. This is particularly true of the early years. Many enterprises controlled by the development corporations have been unprofitable and many show large accumulated losses. In addition, investment planning on the part of these corporations has been very poor and without proper estimates of economic viability. This has resulted in significant capital write-offs. These losses have been attributed to poor management and planning and excess capacity in new plants. These corporations were
also involved in loans and joint ventures which were made under questionable circumstances. The ubiquitous aspect of political patronage has been very dominant and the benefit of powerful political figures has been a very important consideration in the operation of the public enterprises.

The Nigerian Railway Corporation and the Electricity Corporation of Nigeria are two important public enterprises in Nigeria. The Railway Corporation has been making a loss for a number of years and has often failed to cover its operating costs [48]. The major causes for this poor operation has been high operating costs due to poor management and overstaffing of workers, and freight traffic has met increasingly with competition from road transport. In contrast to the other public enterprises, the Electricity Corporation has been profitable. Its performance however, has been clouded by persistent evidence of faulty service and frequent power interruptions. This has forced enterprises dependent upon continuous power to incur higher capital costs by establishing stand-by electricity generating capacity [63].

Nigeria, which had a plethora of able politicians at independence, has had frequently shifting alliances and coalitions of groups. This has been complicated by political rivalries among the regions which culminated in the civil war of 1967. Individual politicians have not been able to consolidate power for too long. Honesty and managerial competence have had very little relationship with personal political objectives. Therefore, on the whole, the performance of public enterprises in Nigeria has been rather abysmal, especially where the three development corporations are concerned. This, however, contrasts with the performance of public corporations in Uganda.
The major public corporations in Uganda are the Uganda Development Corporation (UDC) and the Uganda Electricity Board (UEB). The performance of both these bodies has been quite striking, at least until 1971 which ushered in the rule of Idi Amin, after which not much is known.

The UDC was started in 1952 with the government as the sole shareholder. Over a period of time, the corporation acquired interests in a number of major manufacturing enterprises which included a cement plant, textile mills and a steel mill. The UDC has raised funds for its operations by investing in commercially viable projects that attract foreign participation and then by reinvesting its profits. In addition, it has frequently sold some shares held in its profit-making subsidiaries.

Nyanza Textiles and Uganda Cement stand out as the two most profitable enterprises owned by UDC. Both have operated at high capacity utilization and, in general, have been well managed. In addition, labor productivity has been steadily improving and the corporation has been successful in training and holding middle level managers [9]. The only notable failure of the UDC is the Uganda Metal Products and Enameling Company; it has been unable to compete with imports from the Far East [35]. After some initial losses, it began making some profits due to import protection which enabled the company to raise its prices. The profits, however, declined subsequently which led to the reorganization of the company in 1966. It made a small profit after the reorganization [35].

The other main public corporation, the Uganda Electricity Board, was formed in 1947. The corporation made substantial losses in the early years due to slow growth of demand and high capital charges. This was solved
by establishing a fifty-year agreement with Kenya to purchase future supplies of electricity and a loan from the World Bank and the United Kingdom Treasury in 1961. Accumulated losses were eliminated in 1966 after which there has been a steady growth in profits [35]. Most of UEB's troubles have been attributed to the incorrect timing of the investment. The Board's more recent financial success, however, is probably more indicative of its viability. There appear to be relatively few complaints about the service and it is generally agreed to be a well-managed enterprise.

Uganda's public corporations are considered to be good examples of successful use of public enterprise in economic development. In Uganda, the public enterprise pattern of profitability, autonomy and exclusion from political interference was set long before independence was achieved. The colonial government was able to operate such enterprises on "sound business principles" and it hired skilled managers and manpower regardless of their tribe or political persuasion. The efforts of the government have been helped along by Asian entrepreneurs who invested their private profits in the commercial ventures of the Uganda Development Corporation. According to one study [35], the African entrepreneur, however, has been absent from the scene. This contrasts with Nigeria; when public enterprises failed, European, Asian and African entrepreneurs filled the vacuum and expanded their own activities [35]. Prior to 1971, there was little indication that public enterprises in Uganda had come under the influence of the government and politicians to the same extent they had in Ghana and Nigeria. After August 9, 1972, when President Amin forced the evacuation of the Asian entrepreneurs on the grounds that their presence prevented the Africans from playing their rightful role in the economy, observers had doubts about the performance of the Ugandan economy.
with only enough foreign currency to pay for one month's imports. What little is known, seems to indicate that the showpiece of African public enterprises has gone the way of its counterparts. This Ugandan experience gives a flavor of the economic impact of thoughtless political interference.

2.2.5 Public Enterprises in Italy 1/

The Italian public enterprise system has, over the past few years, aroused increasing international attention. It appears to be a system that is not plagued with the problems common to public enterprises in most countries. It has also been used as a model for state intervention agencies by several countries in Europe. It merits some discussion here as some of the policies followed could be of relevance to developing countries.

The Italian Institute for Industrial Reconstruction (IRI) was established as a permanent agency in 1937. Since then the system has continued to expand as a result of both internal growth and new acquisitions. The expansion, however, was not based on any deliberate nationalization policy by the Italian state. It was, instead, an effort to compensate for the inertia or the unwillingness of private entrepreneurship. It was created as a holding company with widely varying proportions of equity in operating firms spread across the whole economy. It soon became a model on which the more recent public companies were structured. Specifically, during the four decades of its existence (1937-1977) three more state holding agencies were created along the lines of IRI: ENI in 1953, EFIM in 1962 and EGAM in 1971. These four state holding companies have brought the Italian holding system to its

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1/ This section draws on the works of Holland [50], Marsan [84], Saraceno [93], and Sheahan [98].
present size and structure through the process of rescue operations and expansion through investment and diversification.

In 1975, the work force of these groups was equal to 6.5 percent of total Italian non-agricultural employment. The groups' share in domestic value added was slightly over 7 percent (rising to roughly 15 percent for industry, transport and communications); their fixed investment was equal to about 16 percent of the national total (25 percent in the manufacturing sector). In the South, where 19 out of 55 million Italians live with a per capita income that is about 40 percent below the national average, state-held industry created, in a five-year period, 63,000 new jobs in the manufacturing sector; this was equal to over one half of the total increase in southern Italian industrial employment from 1971 to 1975.

A typical feature of the state holding system is that it is organized in large-scale multisectoral groups. In this connection it should be mentioned that Italy has, by European standards, an industrial structure in which small-scale enterprise is far more predominant, whereas the number of large industrial groups in the private sector is extremely limited. State-held groups are among the very few Italian large-scale enterprises appearing towards the top of the list of the largest European companies.

The state-held companies are concentrated in specific sectors where they play an important role; e.g. in steel (about two thirds of Italian output), energy (about 40 percent, excluding electricity) and non-ferrous mining; to this should be added almost nine-tenths of shipbuilding and about two-thirds of electrical (including nuclear) and non-electrical equipment manufacture, as well as of aerospace production. The system accounts for 20 percent of the Italian chemical output (mostly heavy) and about a third
of the electronic industry. State holdings also control a large section of the Italian telecommunications network, most of the air transport, the radio and TV national broadcasting company, one quarter of the freight maritime fleet, and over one half of the toll motorways. The share is much lower in other lines of production (food and confectionery, textiles, cement, glass and paper) and in the construction industry. Finally, three of the largest banks (with about a fifth of total deposits of the Italian commercial banking system) are controlled by the IRI. The banks' position within the group is, however, unique in the sense that no privileged access to their resources is afforded to IRI companies.

Italy's history as an industrial nation is linked in many ways to the growth of the state holding system. The specific role it has played has been enunciated by Saraceno, a key creative figure in the IRI, as that of providing the state with a team of managers which the state can rely upon to solve the problems of industrial development which are "continuously and unpredictably" raised by the growth of an economy in a market environment.

The Italian state holding system has left intact the existing legal forms of the enterprise while carrying out its productive activities. Specifically, the adoption of the joint-stock company module has determined the operational criteria for a business-like management of state-held companies. It has opened up the possibility of private equity participation both as a source of financing and as a means for industrial partnership. It has also made the turning over of a state-held firm to private enterprise a relatively simple operation. All this is reflected in the IRI's financial structure. In twenty-five years after the end of the war, the IRI secured, on average, not more than a tenth of its financial requirements through state capital grants.
The remaining 90 percent has been secured through the market on effectively the same terms as private enterprise finance. In Italy, because of the small scale of the equity or share market, this has been mainly through bonds and other kinds of medium-term finance. The effects of so high a dependence on the open market for nine-tenths of its financial cover has clearly acted as a major stimulus to competitiveness within the IRI companies. The proportion of state grants is lower than any public enterprise group elsewhere in Western Europe, and clearly one of the main reasons for the increasing international interest in the IRI formula. The fact that the IRI management can compete successfully with leading national and international companies while obtaining the majority of its financial needs on the market, indicates that the state has played an effective role as an entrepreneur.

Also characteristic of the system is that the state, as a rule, does not encourage any idea of sectoral monopolies nor has it demarcated any permanent boundary lines for public sector activities (e.g. utilities, "basic" industries, etc.); instead it lets its enterprises compete with private enterprises in the same sectors, applying equal treatment to all of them. This is done in order both to preserve a climate favoring efficient and dynamic management in the public sector and to avoid any dampening of private enterprise growth. Particularly, public enterprises have, in several cases, proven to be distinctly more dynamic than the private firms with which they were in competition. The most important example is the steel sector in which the IRI not only operates on equal terms with private enterprise, without tax favors or help from public purchasing, but successfully sustains the highly competitive pressures from within the tariff-free internal market of the European communities. In other manufacturing industry, the IRI similarly
faces the competition of the other members of the six, as well as from the U.S. multinationals.

Another important aspect of the system is the group form of organization which operates on a broad front of manufacturing, service and construction activities. This multi-sectoral diversity has several advantages which are not open to single sector public enterprise companies. In the first place, the system is able to diversify into new products and production techniques without overrunning any demarcated limits. It is also able to take advantage of interproduct and intersectoral spread and spin-off effects of innovation at the company level, rather than wait for a national research and development organization or a private enterprise to inform it of its potential. To this extent the innovation potential of the system has been maximized. Therefore, due to their multisectoral structure, the Italian state-held groups have been able to contribute more than they otherwise could have done to the survival and expansion of new lines of activity, especially in electronics and nuclear engineering. In addition, they have been able to promote regional development, and the restructuring of declining industries. As large and diversified groups, they have also started to compete successfully on the world market for complex capital projects. Finally, they have also been able to challenge the dominant positions of multinational groups in the software and food industries.

The question arises as to how the entrepreneurial function of the system is made to serve the goals of public policy, which is the raison d'étre of state-held companies. Finding a solution to this problem which is both workable and free from internal inconsistencies and contradictions is obviously of crucial importance. In this context, the IRI has been able to
devise a satisfactory approach to synthesize the managerial and the political roles. Specifically, the IRI's approach is that, at the enterprise level of the state-holding system, management must remain motivated by profitability. The management, however, is encouraged to take a longer-run view of profits rather than to seek investments which maximize short run profits. Thus, the IRI is prepared to take a longer and wider view of returns from a project than would be acceptable to many private enterprise groups. This can be seen from the example of the integrated ore-based steel industry which the IRI created with regard to the industry's long-run potential contribution to the growth of Italian industry; it has also proved to be financially profitable. Private enterprise, however, did not feel attracted to this investment, but rather to the smaller capital requirements and quicker returns offered by steel plants using scrap.

In other cases, the IRI has also met social objectives which could not be financed by the state-held company alone. The costs of such non-profit goals have been met via an "endowment fund" awarded to the holding company by the state. The fund is considered as a form of equity capital and, as such, it performs the normal role of risk capital as in any enterprise. According to the agencies' statutes, it is to be renumerated when profits are available. The objective of the fund is very specific, viz. to meet the designated social objective; the IRI is expected to bear any losses due to unforeseen market reverses or due to managerial incompetence.

The request for "endowment funds" is one of the most important stages of the decision-making process. It is made after the firm is expected to attain a particular social objective. The parliament then decides on the desirability of realizing that particular objective, having been made aware
of its cost as reflected in the demand for the endowment funds. Different decision levels are involved in the process described. The formulation of social goals and policy objectives is placed where it belongs; i.e., in the class of political decisions. They are handed down to the state holding agencies which must determine in advance whether the objectives are attainable by subsidiary enterprises without damaging their profitability. This stage of the process involves both companies and parent agency in estimating the feasibility and costs of alternative proposals for meeting the social objectives; these are seldom clear-cut and more often of a multiple and conflicting nature. The final solution is, therefore, the result of successive approximations in which both the political and the enterprise level cooperate.

Thus, one of the crucial factors in the IRI's success story has been the extent to which it has been able to cooperate with the government for the fulfillment of the social goals of government policy; at the same time it is largely free to employ the tactics necessary to attain such goals. As a result, over the last fifteen years the IRI management has generally been left free to manage. The higher the management is in its pyramidal structure, the greater the awareness of the character of the IRI as a state rather than private enterprise group. But, at the level of its operating companies, and subject only to the constraints imposed on the group by the main guidelines set for it by government policy, management is able to operate very much as it would in a private enterprise - hiring and firing its own staff, buying in the cheapest or best markets independently of whether or not they included group companies, and taking the initiative in new products and new markets. One of
the principal results of this approach is the degree of entrepreneurship which appears to be notably lacking in most other state enterprises. 1/  

2.3 Policy Implications  

The examples of Turkey, India, Ghana and Nigeria in the preceding section show that the basic problem facing most if not all public sector enterprises in developing countries is the conflict between two requirements: on the one hand, it is an economic unit required to perform its economic function efficiently; on the other, it is accountable to the government that feels compelled to direct its operations. In order to serve "the public interest," the government uses these firms to achieve objectives which are often vague and unclear and which are also detrimental to their economic viability. The problem facing the public enterprise is how to achieve the complex tasks demanded of it by the government. The point of view that the enterprise can be used to implement any government policy is widely held. The resulting ministerial interference in the operations of the firm for political or other reasons is very common in many countries. The frequently held or hoped for assumption that the ministers would apply self-restraint has been found to be less than accurate. The very fact that these enterprises have been financed by the state leads the government to impose a variety of obligations on the firm and to use it as a tool for various government policies. The fundamental problem for most developing countries is, therefore, of finding a proper balance between the various competing objectives and in determining the proper instruments to achieve these objectives. This appears  

1/ It should be noted that there is some evidence that since the mid-1970s, the performance of public enterprise firms in Italy has deteriorated. This has been attributed, in part, to the increasing involvement of the state in the operations of the firms. For a current discussion of this decline in performance see The Economist [33a].
to have been achieved with varying degrees of success in some countries such as Korea, Uganda, and Italy at various points in time.

To discuss the issues regarding the efficacy of the public enterprise system as a tool of industrial development policy, this section will focus on the reasons for the poor performance of public enterprises in developing countries; the resulting policy implications will be based on economic analysis and the success stories which are not too many. The first subsection discusses the use of financial profitability as a measure of success; public enterprises are condemned as disasters simply because they make financial losses. Is this measure a proper one and if not, why not? The answer to this question throws some light upon the limitations of this measure, which should mitigate the criticisms; all public enterprises that merely make financial losses are not detrimental to economic development. The issue is that social profitability or social efficiency is the proper measure of success; this is the second aspect that is taken up. The use of accounting prices is a sine qua non for ex post evaluation as well as for ex ante efficient resource allocation on part of the public enterprises. This leads the discussion to the complications which arise when the multiple goals or objectives of public enterprises are not clearly specified; these goals cause a conflict between the state and public enterprise managers regarding the function of the enterprise. The discussion then focuses on the economic environment conducive to improving the efficiency of public enterprises. Implicit in all this discussion is the assumption that public enterprises are and will continue to be a permanent fixture in developing countries, thus, the role to be played by such enterprises in these countries is presented in the final section.
2.3.1 The Use of Financial Profitability as a Criterion of Success

Most analyses of public enterprises assume that financial as opposed to social profitability is an adequate measure of success. There is, however, considerable doubt as to whether financial profitability is a useful criterion to use to discuss the economic "success" of a state enterprise. A perusal of the literature, in fact, suggests that the non-quantitative aspects associated with poor performance (i.e. state intervention in the management process, unclear multiple objective, centralized decision-making, political patronage, etc.) are more suggestive and persuasive as potential indicators of poor social (or economic) performance than the quantitative measure of financial profitability presented in most studies. However, the reasons specified for the poor financial performance of public enterprises in Turkey, India, Ghana and Nigeria also suggest that, where they dominate, social profitability is unlikely to be positive. 1/ Thus, the measure of financial profitability alone is neither a necessary nor a sufficient condition to conclude that social performance is poor.

The measure, however, does indicate whether the public firm generates revenue or not. Since revenue generation is often considered to be an objective, a loss-making enterprise constitute a drain on the national treasury. In that sense, the firm is not meeting its objective. That public enterprises are not efficient tools for resource mobilization has been discussed in the preceeding section. The ineffectiveness of such enterprises for resource mobilization has also been observed in other countries such as Pakistan, Bangladesh, Indonesia, and Thailand. Subsidies have, thus, become an almost permanent state of affairs in many developing countries.

1/ See Section 2.2.
The losses of these corporations, which may be tolerated and subsidized in the short-run on the grounds of learning-by-doing, are, nevertheless, damaging to the economy in the long-run if these losses become a permanent fixture of the public enterprise scene. Unfortunately, there is no such thing as a free lunch and these losses have to be paid for by the taxpayers. The continuous subsidization of uneconomic firms as in India and Ghana leads to inflation and has the additional impact of a serious misallocation of resources brought about by the diversion of national savings into unprofitable nationalized industries; these savings could be put to better use in industries that contribute to economic growth. In some countries, such as India, after several years of operation and experience, some public enterprises are beginning to show some profits and perhaps also meet their other social objectives. This may be a source of satisfaction to the advocates of the public enterprise tool. The relevant question facing the policy maker is, has the continuous subsidization of the unprofitable enterprise been less than the expected benefits of finally having achieved a profitable public firm? In other words, has there been over time a welfare gain to the society due to the creation of the public enterprise? The answer is not unambiguously yes.

The subsidy, however, may be socially optimal and the firm may, in fact, be economically efficient if it faces economies of scale and is pricing its output at long-run marginal costs. The subsidy may also be warranted on grounds of some social objective, such as regional development, that the firm intends to achieve. 1/ There are several such non-quantifiable social benefits that are not or cannot be taken into account by the use of

1/ See Section 2.3.2 for further details.
the financial profit measure. This is particularly true when the state enterprise is intended to achieve, or has as its objectives, several goals which also include non-economic ones. There are other disadvantages to using this financial measure. Financial profitability is a criterion that is particularly difficult to apply to public goals such as roads and other forms of infrastructure. For industrial projects, however, the problem of non-measurable benefits is not as severe. 1/ In addition, in many developing countries, domestic distortions abound and, therefore, market prices alone cannot be used to obtain a ranking of the social profitability of alternative investments. For example, high profit rates may be observed due to the distortions imposed by the creation of state monopolies; the operation of public enterprises in monopolistic or quasi-monopolistic markets is a common feature in developing countries. The resulting inefficiency created in the economic system is that the price of the final product is higher than that which would prevail in a competitive environment. Such inefficiencies cannot be detected by observing financial profitability alone.

On the input side, the market prices paid are often not equal to their opportunity costs or scarcity values. This divergence between the market and social (or accounting) prices leads to sub-optimal allocation of resources. For example, market wages may be higher than the marginal product of labor due to minimum wage legislation; capital is often undervalued through ceilings on interest rates, and the overvaluation of domestic currency is quite common. These divergence lead to a less than optimal use of resources.

1/ The choice of a non-profitable project, therefore, rest on the state demonstrating that the non-measurable benefits of a less profitable project are considerably larger than those of a profitable one; the mere existence of non-measurable benefits cannot justify the choice of a non-(less) profitable project.
labor, and to excessive use of imported equipment and capital. Financial measures are thus poor indicators of allocative efficiency in the presence of differential implicit or explicit taxes/subsidies afforded to public enterprises. Subsidies on inputs overstate the efficiency of the enterprise as measured by financial profits, and subsidies on outputs (e.g. due to price controls) tend to understate them; a firm may be an efficient cost-minimizer but shows a financial loss due to state sanctioned price controls. 1/ It is, therefore, quite obvious that for an enterprise operating in a monopolistic or quasi-monopolistic environment in the presence of several other domestic price distortions, financial profitability is a dubious measure of economic welfare.

The time required for an enterprise to make profits is another aspect that needs to be considered in evaluating profitability. Most studies discussed in the preceding section have evaluated financial profits measured for one individual year. Current prices, however, do not reflect future profitability; an enterprise that is making losses today, may be profitable tomorrow. Deferring the time of the investment may not be socially or economically justified where investment projects are subject to economies of scale. Several of the "commanding height" or "key sectors" in which the state establishes ownership or control are characterized by "lumpy" investments. The success of such investments often depends upon other investments being made. It may not be possible to make them simultaneously if capital availability is limited. Some enterprises, therefore, will be forced to make

1/ There are also economic costs associated with price controls. For example, the ceilings on output prices in fields such as energy, water or transportation result in public enterprises subsidizing the private sector which purchases these inputs; the profits foregone by the public enterprises often end up in the private sector. The net effect is the redistribution of income in favor of the private sector. See Section 3.2.2 for details.
losses until the entire investment program is implemented. Another reason for initial losses made by an enterprise is that it is in a learning stage. Both management and labor, in this learning-by-doing phase, have to become familiar with their roles, learn the consequences of their actions and decisions and adapt to unforeseen difficulties that could not be or were not foreseen. Both these reasons highlight the need to take dynamic considerations into account as opposed to the usual static appraisal that has been conducted in most studies.

These same arguments apply when financial profitability is used to compare the performance of the public sector to the private sector; this is a common feature in many of the studies discussed before, [e.g., 12, 57, 112]. Any general comparison between public and private enterprise based on the use of financial efficiency (profitability) criterion is not very meaningful. This is particularly true when comparing enterprises in totally different fields and producing goods and services, e.g., a publicly owned railway system and a privately owned shoe factory. Comparisons between similar enterprises must be made with great caution as no two enterprises operate in precisely comparable circumstances. This has not been done in the various studies and thus makes the comparison between the private and the public firms of slightly dubious value. Adjustments, therefore, need to be made to base the comparison on accounting or shadow prices rather than market prices.

This limitation applies particularly to inter-country comparisons. To show that the publicly owned Indian fertilizer industry is "inferior" to the privately owned U.S. one does not by any means validate the superiority of private to public ownership in such an industry. Within a country such comparisons are also difficult because public enterprises are often established
to meet at least some other social objectives in addition to profit-making. For example, a public enterprise deliberately located in a "backward" region of the country with the objective of diversifying that region's economic development is most unlikely to perform as well as a private firm which enjoys the externalities afforded by a superior industrial location. This may be true despite the fact that the public enterprise is manned by management superior to that of the private firm. Analogous problems arise when the time factor is ignored; i.e. when a static (one-year) comparison is made of a new inexperienced public enterprise and a well-established experienced private one or vice-versa.

To say from the above that financial comparisons between private and public enterprises cannot be made at all would be stretching the point. There are very specific conditions under which the relative financial performance may be judged. When public and private enterprises have been established in the same competitive market and the public enterprise is permitted the same autonomy exercised by the private enterprise, the measurement of relative financial performance is straightforward. Admittedly, this situation is not often found in developing countries but it exists in some developed ones. France is a good example; the publicly owned Renault enterprise more than holds its own with the other private automobile firms [98]. The point, however, is that the aggregate private and public approach discussed in some of the studies above that state that the performance of the private sector is superior to that of the public sector are not rigorously analytical and should, therefore, be considered as indicative or suggestive only.
2.3.2. Social Profitability and Accounting Prices

Many state enterprises have failed because of inadequate planning and poor feasibility studies. This has already been discussed in the cases of Turkey, India, Ghana and Nigeria. 1/ The final demand for the product is often overestimated resulting in significant (socially non-optimal) excess capacity. In many cases the plant layout tends to be inadequate, though many private sector firms in developing countries also suffer from this deficiency. Sometimes the choice of location is non-optimal from the cost-minimizing point of view. Sometimes the choice of location is non-optimal from the cost-minimizing point of view. Locational policies, however, are often used by the state to serve other objectives such as regional development and income distribution. And very often the operating managers and supervisors lack organizational talent and do not have proper technical competence. In addition, the penchant of the government to invest in monumental development showpieces is quite common and is widely recognized. It is in this tendency to erect industrial cathedrals that the state corporations are often accused of having a misplaced sense of priorities. The mandatory dam, automated steel mill or airline constitutes a sub-optimal use of the nation's resources. Many enterprises are also used as employers of last resort; other enterprises become a source of political patronage. Thus, these institutions are often used to divert scarce economic resources for reasons other than economic efficiency and consequently suffer not only from social losses, but also financial losses.

State enterprises, however, may justify financial losses in the early stages on the grounds of economies of scale or lack of a trained labor force and entrepreneurial and managerial experience, or on grounds of other

1/ See Section 2.2.
social objectives required of them. However, many of these factors can be taken into account by computing the net present value of a project based on discounting the stream of future costs and weighted benefits (which include various social objectives and externalities where possible) at social (and not market) prices. Social profitability based on accounting prices is, thus, a better measure of performance than financial profitability.

The distorted market prices that prevail in most developing countries also provide incorrect signals for investment decisions. **Ex ante** social efficiency can be attained by requiring public sector enterprises to make investment decisions based on shadow prices; such an approach would provide a mechanism that approximates the market process and gives the correct guidance and signals to the public enterprise 1/. This implies, among other things, higher prices for capital and foreign exchange and lower prices for unskilled labor in most developing countries. The resulting benefits to the economy due to proper project selection in terms of the appropriate choice of technology, unemployment and income distribution are potentially large. By using accounting prices based on opportunity costs, public enterprises could be used to make income distribution more equal by stimulating the demand for labor (through the use of more labor-intensive techniques). Thus, the prevalence of factor price distortions working against unskilled labor presents, at least in principle, the possibility of using public enterprises to improve resource allocation and employment. In addition, the explicit incorporation of income distribution weights would permit the identification of social projects that would favor a more equitable distribution of income.

1/ See Little-Mirrlees [81], the UNIDO manual [29] or Lal [70] for a detailed discussion on the use and calculation of shadow prices.
It is very common to identify public enterprises in developing countries that employ more labor than optimal for the chosen technology. The objective, of course, is to use the firm as a mechanism for employment generation. This had led to common criticism of overstaffing and to the resulting declining marginal productivity. On the other hand, it is not possible to identify any developing country that has systematically taken advantage of using accounting prices to improve resource allocation and increase productive employment. Based on accounting prices, persistent losses over an extended period resulting in a negative net present value can have serious consequences for the prospects of industrialization. It is not easy or costless for the government to raise funds for purposes of investment. Private savings rates in developing countries are low, the governments' taxing and borrowing capabilities are limited and taxation is administratively difficult, costly and politically sensitive. Such losses by state enterprises are often made up by government loans and subsidies; these resources have high opportunity costs in the form of foregone alternative uses. It, therefore, becomes imperative to ensure that a careful social cost-benefit calculation has been conducted and that it can indeed justify the subsidies to the enterprises.

The problem with such a prescription is the determination of the correct value of each social objective and, thus, the associated subsidy. If the subsidy is too high, inefficient performance would be rewarded, and if too low, efficient performance penalized. In some cases, however, it is possible to determine the value of the subsidy with some accuracy as conducted for the French railroads [98]. This may require a competent outside agency to make the evaluation. As a practical matter, though, it is not clear that the procedures inherent in most public enterprise systems are conducive to the ex-ante calculation of the correct level of subsidy. The
problem arises from the fact that the state is dependent on the public enterprise to provide the necessary information for this calculation. Depending on the rewards and incentives facing a public enterprise manager for attaining the social objective and the associated uncertainty attached to meeting the objective, risk-aversion on part of the managers will lead to the provision of information which will tend to over-estimate the subsidy element. Realization of this eventuality results in the subsidy level becoming a bargaining issue between the state and the public enterprise managers. Such a bargaining issue is, nevertheless, resolvable as has been demonstrated by the IRI in Italy.

Additional complications arise if the subsidy level is to be determined *ex post*, for the state may then end up subsidizing managerial inefficiency in addition to paying the economic cost for the social objective. Under such circumstances, the economic cost of the social program would be less than the losses incurred by the public enterprise; to assume *ex post* equality between the subsidy and the cost of meeting social objectives (as has been done in Zambia [126]) would lead to the use of past losses as a justification for future subsidies - a bottomless pit.

It, nevertheless, remains a problem that there are many social objectives that cannot (should not?) be quantified. For example, if a Malaysian public enterprise is established to provide managerial experience for the Malays rather than the Chinese, it would be impossible for any control agency to determine the social cost of using a Malay rather than any other executive. In any case, the ultimate difficulty faced by countries which use public enterprises to achieve such social goals is that they themselves are unlikely to be clear about the relative values of the different social objectives.
2.3.3 **Multiple Objectives**

The multiple social goals of many public enterprises often tend to be vague because they embody complex preferences which are difficult to define in operational terms. 1/ When left vague, they tend to degenerate into hopes and are used to justify inefficient performance. But when defined in terms that make clear to management what it is expected to do, then the possible conflicts can be controlled. In practice, however, the vague and diverse objectives are all-encompassing and do not provide adequate guidance to the manager of the public enterprise. His problem, therefore, becomes not so much the fulfillment of all objectives, some of which may be mutually exclusive, but of choosing between these various goals.

This, therefore, implies that each of the relevant multiple social objectives required of a public firm be accompanied by explicit subsidies. This, in turn, requires a careful analysis of the economic costs associated with attaining each social objective and making the explicit judgement that the non-quantifiable benefits outweigh (or are at least equal) to the subsidy paid. In the case of pricing at long-term marginal cost for the output of industries which exhibit economies of scale, this may not be difficult. A more difficult problem arises where subsidies are to be determined for, say, the promotion of regional development, to train managers or set a "modernization" example. Each constitutes a (perceived) benefit to the society and a cost to the public firm.

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1/ See Section 2.1 for details, in particular, see Table 2.1. It is the presence of multiple objectives (among other things) which precludes the use of financial profitability as a measure of success or failure. It is through the use of social analysis that the various achievements such as regional growth may be attached a social value which can be incorporated into a cost/benefit calculation.
Multiple objectives, in principle, may be efficiently pursued so long as each objective has attached to it a weighting function from which trade-offs may be established. Within the public enterprise system, the costs associated with each economic, social or political goal may then be evaluated in terms of the foregone benefits as suggested earlier. Some of the social benefits such as the training of workers or regional growth may be related to income distribution considerations, and for a formal cost benefit analysis, distribution weights attached to different regions or levels of skills may be calculated. However, the state may also attach some intrinsic value to "having" regional balance or skilled workers over and above income distributional considerations; it then becomes a pure externality argument that justifies including this in the objective function with a specified weight attached to it.  

Efficiency considerations, however, suggest that some objectives, e.g., maximizing employment, or capturing the commanding heights, be "costed-out". In other words, if the objective is to have a certain number of workers over and above those required from the efficiency point of view, then the cost associated with the incremental labor force can be evaluated and presented to the policy maker. If, however, maximizing employment is a final goal in itself to which the state attaches some value (a pure externality), then, as before, it should be incorporated into the objective function as a merit

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1/ This is the "merit wants" argument presented by Dasgupta, Maglin and Sen [29]. It is recognized that, in practice, calculations at this level of sophistication may not be possible. However, the principles implicit in many such decisions of the state should be recognized. See also footnote 1 on page 45.
want with a specified weight. 1/ But the evaluation of the benefits of such
goals is a significant problem, particularly if the goals are not clearly
identifiable or are not easily quantifiable. As a first step, therefore,
goals must be clearly specified and identified by the state. The lack of
guidance provided to the manager as a result of the vague objectives, results
in what is considered by many to be a major deficiency of the public enter-
prise system: managerial inefficiency.

2.3.4 Managerial Autonomy and Decentralization

In most studies where improvement of the efficiency of public enter-
prises is discussed, considerable emphasis is placed on internal organization
and procedures. The reason for this is that the area of responsibility between
the public enterprise manager and the state is a rather nebulous one. This
had led to confused decision-making with respect to public enterprises in
many countries. A common feature is that managers of public firms are not

1/ Two methodological issues are potentially interesting and researchable. One is the determination of a weighting function which attaches such distribution weights to each objective. The methodology involved would probably require either the use of utility theory and the determination of an explicit utility function, perhaps of the Von-Neuman-Morgenstern type which would be characterized by diminishing marginal utility, or the use of revealed preference theory and the determination of weights implicit in past decisions. The latter may be more tractable. In addition, a proper social cost benefit analysis would also necessitate the determination of the share of the total impact on a particular objective that can be attributed to a public enterprise. For example, if one objective is regional development, any growth in that region may be due to the public enterprises or industrial licenses or to tax/subsidy schemes or all three. The proportion of total growth due to the public enterprise would then need to be identified. Since there are multiple objectives and multiple instruments to attain the same objectives, the problem could be framed in a simultaneous equation format with sufficient (and realistic) assumptions to ensure that the matrix is of full rank and invertible.
given sufficient autonomy over day-to-day decisions. This is sometimes jus-
tified by the paucity of managerial talent and the inadequate flow of infor-
mation between the state and the public enterprise. 1/ This results in the
unclear definition of where the authority resides or how the authority is
distributed. 2/ It is believed, by the state, that intervention in the oper-
ations of the enterprise would enhance its accountability. On the contrary,
it is more than likely to lead to a reduction in accountability. Since objec-
tives are unclear and constantly changing, management has ample room to blame
losses incurred on to various other policies it was asked to pursue. As a
result it becomes very difficult to evaluate the performance of the enterprise;
the social costs and public interest arguments often become an excuse for bad
management and inefficiency. On the other hand, accountability is more likely
to be enhanced if the objectives of the enterprise are clearly defined and the
public enterprise is not used as an instrument to attain objectives without a
careful evaluation of the associated costs. It is found that when such enter-
prises are expected to achieve several (often mutually exclusive) objectives
simultaneously, the management does not become accountable for any particular
set of goals and often pursues those that are considered attainable in the
short-run. The divergent views between the ministers, directors and managers
about policies to be pursued often leads to the economic losses observed in
the previous discussion.

1/ The Bank's experience is consistent with this statement. See Ahmed [3]
for Bank experience with public enterprises in general.

2/ In many countries information is either not available or is distorted.
The problem of unpaid bills is very severe in Senegal and Tunisia and
in Sudan the latest financial statements are often long delayed [3].
As a result, most public enterprises in developing countries are submerged in an elaborate system of control and authority with respect to every aspect of decision-making. The resulting legacy of bureaucratic risk aversion haunts the operations of many public enterprises today. Thus, opposition to innovation tends to occur at several different organizational levels. Bureaucrats have found from long experience that it is safer to follow established routines than to seek out new approaches which may be risky propositions. Entrepreneurial spirit is unlikely to be fostered in a bureaucratic system in which the rewards for success are small and the penalties for failures are high. In addition, it is easy to miscalculate, particularly in the field of investment planning, if sophisticated techniques are not or cannot be used (and even then, there are still problems!). Managers are, therefore, unlikely to make bold new decisions, even though they possess information that is superior to that available to the private sector. Little justification is needed to continue the established operations of the enterprise; why then take a chance on some promising venture if the errors made may need lengthy explanations? Thus, clearance or approval from the "level above" becomes the most effective method of distributing the risks and this becomes almost mandatory. Since this operates at all management levels of the organization, top management clearance or "committee decisions" are inevitably desirable, and mutual self-interests require their institutionalization. Delays in implementation of projects thus become a way of life and the economic costs of sub-optimal time phasing of projects must then be paid by society.
The state, for the reasons mentioned above, has a tendency towards over-centralized decision-making. The external diseconomies associated with such centralized decision-making are quite significant. Effective organization and management requires decentralization to the maximum possible extent, both in decision-making and in administration. Centralized decision-making runs the risk of having too many plans and not enough implementation. Associated with this is the proclivity of the state to overestimate its administrative capacity. Decentralization, on the other hand, permits the individual units to organize themselves.

Thus, given the presence of erratic political interference, the generally poor quality of supervisory agencies and the resulting implications for economic efficiency of public enterprises, considerably greater autonomy for these enterprises appears to be a possible solution. A. H. Hanson's conclusions arrived at in the 1960s still appear to be relevant. His analysis concludes that "the problem is usually to give them adequate freedom rather than to bring them under closer supervision" [44 p. 73].

The justification for enterprise autonomy is based on the fact that the quality of supervision in most developing countries is likely to be poor and the economic costs of intervention in terms of manpower and management time are likely to be very high. A good control state agency is everyone's ideal, but it needs to be staffed with extremely competent individuals. "If as in Turkey, it is used as a kind of dumping ground for civil servants who have become persona non grata to their Ministers, its failure is assured" [44, p. 386]. As Hanson correctly points out, in a developing country that suffers "from extreme shortages of managerial talent, the people who understand industrial administration ought not to be inspecting enterprises,
they ought to be running them" [44, p. 387]. It has, therefore, long been recognized that the social opportunity cost of manning control agencies with the limited talent available is rather high; the benefits foregone manifest themselves in the poor performance of the enterprises and the excessive drain on the national budget.

The available evidence indicates that the more public authorities confine their activities to explicit goal setting and the less they interfere in the detailed operations of management, the higher the level of efficiency that is likely to be attained. This has stimulated the search for a legal framework in which the public enterprise can enjoy the powers of the state and retain the flexibility and initiative of the private sector. The Holding Company (IRI) as in Italy has been a suggested example. In practice, however, in many developing countries there is very little observable correlation between the legal form and the mode of operation. A holding company can display all the less useful characteristics of a bureaucracy; a government department, on the other hand, may prove to be extremely flexible and enterprising. That the above suggestion is hardly a panacea has been demonstrated by the fact that the formation of a holding company along the bases of the IRI has failed in Pakistan, in Sudan and also in Senegal [3]. In the case of the IRI, however, there was a genuine devolution of power from the government to the holding company. This was not the case in these countries; there was no real devolution of power. This resulted in a confused authority structure not very different from the original one; the devolution of power was only on paper and the necessary serious commitment was missing.
2.3.5 The Benefits of a Competitive Environment 1/

As discussed before, in many developing countries, state corporations are active in fields in which economies of scale are prominent. In principle, the existence of state firms in such activities has some benefits. Price regulation to ensure that such firms price their output at their long-run marginal cost may be more effective than enforcing such regulations on private "natural" monopolies. In addition, the presence of state firms that correctly price their output in such areas may lead other private firms in the same field to search for cost-minimizing techniques. In the absence of such state firms "competition" may lead to attempts at collusion, which in a developing country may be difficult to detect or prevent for a variety of reasons. In practice, however, state monopolies do not price their outputs at the relevant long-run marginal cost. 2/ Furthermore, in most developing countries the state does not encourage the private sector to compete with the public sector; certain areas of activities are reserved for the public sector. The resulting monopoly rents are, therefore, inevitable; the state accrues these rents rather than the private sector.

Unless the state firm is required to perform efficiently, in a competitive environment (which includes competition from both domestic and

1/ The term "competitive environment" is not to be confused with the term "perfectly competitive system" or "perfect competition" as used in the theoretical literature. It is recognized that in the presence of increasing returns, perfect competition cannot exist. In this paper, "competitive environment" is used to indicate an environment in which pressures can be brought to bear on a monopolistic firm so that it may price its output as close as is practically feasible to its long run marginal cost.

2/ The notable exception is the Electricité de France. For a discussion of the pricing and investment policies of this public utility see Boiteux [19].
foreign firms), its performance is likely to have a long-run negative impact on the development of the industrial sector. The inclusion of other objectives "in the national interest", at the expense of the exclusion of the profit motive as an incentive force, does not automatically guarantee, as is assumed in many countries, the efficient operation of the public enterprise in the interest of society. Instead, the interest of the managers, who will naturally attempt to maximize their own welfare or utility function, will be foremost in guiding the operations of the firm; this, in general, is not synonymous with an economically viable production structure.

In the absence of economies of scale, arguments for state ownership are confused with ideological rhetoric. Socialists have long argued for state ownership of production to prevent monopoly profits. However, it is hard to see how a monopoly could exist in the absence of scale economies where foreign trade and free entry and exit are present. Sometimes they argue for state ownership to prevent an undesirable distribution of income in favor of entrepreneurs. This presumes an efficient tax-transfer system which successfully redistributes the benefits, a presumption not often validated in practice. It also has the external diseconomy of reducing entrepreneurial incentive which is usually in scarce supply. In addition, industries that do not exhibit scale economies are precisely the ones that private entrepreneurs can enter, for large investments are not necessary as they are in the fertilizer and steel industries. Given the constraints on government resources (both in terms of funds and skilled manpower), the opportunity cost of precluding private entrepreneurship in non-increasing returns industries is likely to be very high.
Private firms face two important forms of corrective pressures: a change in performance brought about within a competitive environment, and the self-destruct mechanism inherent in the most inefficient operations within such an environment. Public firms, as structured in many countries, operate in protected environments that encourage economic inefficiency. Since competition is an important form of control for efficiency, the environment in which public enterprises operate may be classified into two: one in which the market structure allows market forces to operate and one in which it does not. Within the former fall all manufacturing industries producing tradeable goods. Those tradeable goods industries with constant returns to scale may be effectively controlled by permitting the private and the foreign trade sector to compete with public enterprises. Heavy industries, with increasing returns to scale, prevent effective domestic competition because of the relatively small size of the market; the discipline of import competition, however, would still be effective. But here, the problem faced by many countries is the non-uniform effective tariff structure which leads to non-uniform market incentive across industries. This, therefore, implies a reform of the tariff structure to one that is as close as possible to uniform effective protection. 1/

The environment in which the market structure does not allow market forces to operate is most prevalent in the case of "natural" monopolies whose output includes only non-tradeable goods. Allocative efficiency then requires that output prices be set to their long-run marginal costs; this nevertheless still implies a subsidy element equal to the difference between the long-run average and marginal cost. State intervention in this case is necessary and 

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1/ The practical difficulties associated with devising uniform effective protection are well-known and recognized. Here, it is suggested that an attempt be made to approximate this ideal state.
desirable. The problem, as mentioned before, is that of obtaining the required information to determine these long-term cost estimates which are independent of the past performance of these public enterprises.

By permitting public enterprises that produce tradeable goods to operate in a competitive environment, the state can effectively wield a two-edged sword. On the one hand, the competitive pressures that are brought to bear on the state provide a form of control for efficiency that is absent in a non-competitive, sectorally demarcated environment; a necessary condition is that state policy must be neutral towards the public and the private sector. On the other hand, within such an environment, public enterprises can play an effective policing role in competing with private firms in oligopolistic market structures by adopting the necessary expansionary policies. The Italian public enterprise system is a good example of the impact of public firms on private ones [84]. 1/ A study of the Mexican steel industry also considered the effects of competing public enterprises in an oligopolistic context [85]. The generalized conclusions that emerge are that the public enterprise must be large enough to achieve the necessary economies of scale and must be managed and organized to be able to compete effectively. This implies the pursuance of expansionary policies without special government favors that would tend to discourage private sector expansion. In other words, the public sector must be a credible threat to the private competitors who are reasonably dynamic. It is clear that the right balance of effective pressure is difficult to find. It is, nevertheless, possible. The study mentioned above concluded that the government firm in the Mexican steel industry effectively catalyzed the expansion of the private sector and, thus, of a more rapidly developing industry [85].

1/ See Section 2.2.5.
In industries where economies of scale are not as large as in the steel industry, the promotional role for public enterprises does not necessitate a high market share. \(^1\) The crucial issue is more of effective production and organization and the ability to determine "optimal" directions for expansion rather than of size *per se*. In oligopolistic market structures, one firm's actions are often sufficient to provoke a reaction on part of its competitors and force an expansion of the industry. This has been effectively demonstrated by the promotional role played by the IRI in Italy \([89]\). To assure, therefore, that public enterprises compete with private and other public firms could eliminate most of the worst mistakes made by both the sectors.

Another policy has also been used by some countries to ensure continued and efficient operation of public enterprises: the policy of selling public firms to the private sector, once the pioneering role of the state has been accomplished. The arguments in favor of this divestiture arise from the finite limit to the state's managerial abilities and the fact that this policy makes available a "revolving fund" which can be used to pioneer similar ventures and to promote competition within specific industries.

Such a pioneering role played by the state has been demonstrated by the example of Japan. A pioneering role necessitates greater risk taking and lesser concern for costs than would be the case otherwise. In Japan, public investments were used to break into new fields that would not have been entered into by private, risk averse entrepreneurs. The operating enterprises were then sold off to private investors in the belief that the efficiency of

\(^1\) In Mexico, the state steel firm accounted for about one-third of the total output \([91]\).
continued production would be increased by private entrepreneurs who were far more cost-conscious than the managers of public enterprises. This policy was facilitated by the belief that private enterprise was more efficient and was not required to prove itself. Current studies on the performance of public enterprise tend to reinforce this view as applied to developing countries. Korea is similarly selling off its public firms to the private sector. There is one important difference, however; it is the marginally inefficient firms that are being sold, the successful operations remain the preserve of the public sector [55]. The Singapore government has been involved in the sale of public firms and so has that of Brazil [56, 57]; the Argentinian government is also about to embark on a similar policy.

In Western Europe, and the US, the public sector firms are often those that have proven to be unprofitable, but are perceived by the state to be socially too important to die. Thus, the unprofitable ones remain in the public sector and the profitable ones in the private. 1/ In developing countries, the process may be reversed; successful public enterprises that grow without government subsidies should be kept in the public sector, while the unsuccessful ones should be sold off to the private investors; this would combine the advantages of lower risk aversion by the public sector with those of greater cost-consciousness of the private entrepreneurs.

2.4. The Role of the State in the Production Process: A Synopsis

The discussion above suggests that most public enterprises in developing countries face several problems that are endemic to the structure and to

1/ There is, of course, the category of unprofitable private sector firms which are bailed out by the Government such as Lockheed and Penn Central.
the environment within which these enterprises function. However, the discussion also suggests that a public enterprise can be a constructive complement to private enterprise in developing countries if it is used effectively.

In this section, the various recommendations made earlier are drawn together; they suggest ways in which public enterprises can be made more efficient. Implicit in this discussion is the assumption that developing countries will continue to use public enterprises as a tool of intervention in the production process. Therefore, the relevant issue facing these governments today is how to use this tool more efficiently than they have in the past.

Given that dynamic entrepreneurship is a scarce resource in most developing countries, the public firm can be used to take a pioneering role whenever private entrepreneurship is scarce, highly risk-averse or just simply unimaginative. The actual experience of countries with public enterprises, however, has varied greatly. A common mistake of many governments is to assume that social objectives will be more easily achieved if the profit motive is not the dominating force. However, the absence of a profit motive has associated costs, viz. a lack of concern for scarce resources and inefficiency in general; this in turn results in the poor timing and direction of investment. In addition, social goals are not necessarily fulfilled either; the exception being those objectives that the enterprise chooses to emphasize from its own and very partial point of view. In that sense, one may state that laissez-faire with public enterprises is worse than that with private.

In many countries, public enterprises continuously face intervention in the name of "national interest". The various constraints to which these enterprises have been subject to include the requirement to invest in
uneconomical projects -- often against the management's judgement; to purchase domestically made inputs to support an "infant industry" or to subsidize a particular sector; they have been used as employment "reservoirs" to avoid unemployment, thus maintaining a staff of inefficient workers. The constraints imposed on public enterprises or the "other" uses to which they have been put to is limited only by imagination. Within this constrained environment, the public enterprises are expected to make profits and are subject to criticism for failing to do so. A careful analysis is imperative to identify the economic cost associated with each social goal. This would enhance the capability of the state to make decisions regarding the costs effectiveness of particular social objectives. This approach has been successfully undertaken by the Italian public enterprise, IRI.

The cost benefit approach serves to highlight two important aspects. First, ex post financial performance is a useful yardstick in a very limited sense only; second, the use of ex ante accounting (shadow) prices permits the selection of socially profitable projects and efficient resource allocation. It is also a means by which the ex post performance of an enterprise can be evaluated, even in the presence of multiple objectives or goals. Constructive results, therefore, require a level of authority outside the enterprise to identify clearly the goals to be sought, and relate them to financial constraints, where possible. It should be recognized that public enterprises are not necessarily easier to guide than private ones, and nor are they more likely than their private counterpart to give desired results when unguided.

It is probably a truism to state that in the presence of fierce political rivalries, it would be desirable to limit the role of public
enterprises in the industrial sector. A sine qua non for public enterprises is the assurance of political and economic autonomy. Unfortunately, political reality cannot be ignored and it is not clear that it is, in fact, possible to protect public enterprises from being used as a device for political patronage. This issue has been debated quite extensively and there does not seem to be an easy answer; the effective insulation of the management and administration from political influence and interference still remains a problem. However, it is essential to recognize that private sector management is not inconsistent with state equity participation. Political and bureaucratic interference by novices with powers totally out of proportion to their ability leads to the results that are by now well-known; they are not particular to any geographical location or stage of development. The principle that should be employed is that of comparative advantage. It is clear that, under the appropriate economic environment and incentive structure, the private sector has the comparative advantage in the organization of the production process. The public sector, on the other hand, has a strong advantage in many developing countries from its ability to mobilize domestic resources. Private sector management is not inconsistent with public equity or with meeting social objectives. The case of the "joint sector" appears to be one of the more successful formulae which combines the strengths of both sectors.

It is clear, from the available evidence, that the stated social goals of the government have not always been met using "purely public" enterprises. When they have, the economic costs, though not explicitly evaluated by any study, appear to be very high. The evidence also indicates that the "purely public" enterprises are not necessarily the most cost-effective means of meeting such goals and that more cost-effective instruments such as "joint
ventures" (with the private sector) or incentives to private entrepreneurs exist. One of the major implications of the case studies discussed is that the joint state/private enterprises tend, on the average, to be more profitable than wholly-owned state enterprises. The infusion of the private sector into public sector provides the necessary managerial talent. This, however, may be negated by state intervention (more correctly interference) in the day-to-day management of the firm. Decentralized decision-making, with the decision makers close to the production activity, is a necessary, though not sufficient, condition for the success of the "joint sector". The inclusion of the private sector also has an added, and perhaps more important attraction; this stems from the ability (or inability) of the state to attract private investment funds. Private entrepreneurs are less likely to invest in potentially non-profitable ventures. Thus, the ability to attract capital may be one criterion which public enterprise could use in choosing investment opportunities.

It is generally accepted that the main advantage of a public enterprise lies in its greater willingness to act under conditions of extreme uncertainty since the state can spread the risk more than the private entrepreneur and its willingness to respond to complex social goals if they are properly identified. It is also accepted that the private sector may not be able to meet the social goals as it tends to respond to a different set of signals. What appears to be possible is that the signals to which the private sector responds can be used effectively to improve the performance of the public enterprises; viz. the signals that are inherent in a competitive environment. A public enterprise operating in such an environment can also have an impact on the performance of the private sector firms. Thus, the state should not demarcate areas of responsibility, but should instead encourage
competition between public and private firms; both sectors should also be "regulated" by competition from the foreign trade sector; thus private and public monopolies would be inhibited. In addition, the policies of divestiture of established public enterprises appears to be a sound one. Whether the policy of Japan (i.e. of selling successful firms) or of Korea (i.e. of selling marginally inefficient firms) should be embraced would depend very much upon the quality of private entrepreneurship available.

The state, however, does not have the public enterprise as its only tool to meet social goals. It also has, at its hand, incentive mechanisms in the form of taxes and subsidies to encourage the private sector to meet certain social goals such as regional development. Again, this implies that the state must conduct a careful analysis of precisely what it wishes to achieve, rather than make vague statements that have no operational relevance. It also needs to calculate what the attainment of that objective is worth to society and thus the level of the subsidy (incentive) to the private firm. Further, since most social objectives are of a dynamic nature in which a change in a particular state of affairs is desired, it should be possible to decrease the level of the incentives over time if the enterprise is performing its role effectively.

The policy environment that has been described above to ensure successful operation of a public enterprise is really no different from an environment that would ensure the successful operation of a private firm. Thus, if the policy environment is suitable and the markets are highly competitive and decentralized, an efficient public enterprise should not be expected to perform any better or worse than an efficient private enterprise.1/

1/ There may, nevertheless, be some cases where a public enterprise will be more amenable to "social direction" than a private enterprise.
In oligopolistic market structures, however, public enterprises are more likely to be helpful than in a highly competitive environment since they constitute additional decision makers in an environment that is likely to minimize competitive behavior. When only three or four firms operate in an industry, risk averse, collusive and even anti-competitive behavior will preclude the exploration of possibilities for change. Public enterprises, with a management that has a different mixture of concerns, may act differently and reveal new openings. In addition, competition from imports would also provide the necessary incentives for efficiency to both the public and the private enterprises.

In the "natural" monopolistic markets, e.g., electricity and railroads, public enterprises may be excellent or disastrous depending on the external directions and pressures brought to bear on them. Thus, it is in these monopolistic or oligopolistic environments that the recommendations made above have added importance.

From the preceding discussion, it may be possible to conjecture that during the early stages of development, when there is a dearth of private entrepreneurship, and product markets are not well developed, the state may have little option but to use "purely public" enterprises, i.e., ones that are owned, financed and managed by the state. This, of course, assumes that the more able individuals are employed by the state. If this assumption is not valid, then Lewis' recommendation that the government ought to provide the necessary infrastructure and leave the productive sector in private hands may be the only course open [74]. This, in many developing countries, would
imply that foreign capital would be the initial instrument of indus-
trialization since the local private sector would be weak. 1/ As development proceeds and private enterprenuerial skills are accumulated, there is a strong case for "joint" ventures of the public capital/private management variety. As development proceeds even further and product markets become more competitive and decentralized, the established public enterprises should be sold to the private sector and fiscal instruments should be used to attain the desired social objectives. 2/ New public enterprises may be created in product mar-
kets where private entrepreneurship remains weak and market structures are noncompetitive.

This section has attempted to show some solutions that may alle-
viate the current problems of public enterprises. The difficulty, as usual, lies not in discovering what ought to be done, but in discovering how to get it done. In the different developing countries, the methods to achieve the same objective will differ because the social, cultural and political environments will differ. In addition, there are political and social obstacles to the achievement of economic efficiency in both the public and the private sectors; these obstacles are often embedded in the traditions of the country. Deceptive short-cuts to circumvent such traditions are not likely to succeed, thus, the probability of successful overnight changes is low. The changes that must be instituted have, therefore, to be carefully adapted to the quality, experience and prejudices of the peoples concerned.

1/ Lewis, also, stressed that "the role of the foreigner is that of the tutor; a sometimes likeable, but usually tiresome, fellow from dependence on whom one wishes to escape at the earliest possible moment" [74].

2/ This, of course, does not apply to the "natural" monopolies.
III. STATE INTERVENTION THROUGH DIRECT INDUSTRIAL CONTROLS

Direct industrial controls are another form of intervening in the market to overrule its forces. These forms of intervention are superimposed on the market by the state to curb private decisions in the interest of public policy. They are administrative in nature and, as a result, do not make use of the market forces as opposed to the other indirect forms of intervention such as taxes, tariffs and subsidies. The discussion in this section will be restricted to the direct domestic intervention instruments; i.e., industrial licensing and price controls; foreign trade instruments such as import licenses (quotas), import tariffs, export subsidies and the exchange rate, are taken up in a separate paper. 1/

The organization of the discussion is as follows: Section 3.1 will present the objectives and justifications for industrial controls in developing countries. This will be followed by a section (3.2) which will discuss the implications of industrial controls from the viewpoint of economic efficiency; this will be substantiated by the experience of those countries that have used such controls as instruments of industrial policy. The final section (3.3) will conclude with an agenda for policy reform.

3.1 The Objectives of Direct Industrial Controls

The reasons for instituting industrial controls are fairly similar in most countries. This is not to say that each country has an identical

1/ See Keesing [60]. In addition, the interested reader is referred to Bhagwati [14] for an excellent discussion of the implications of various forms of exchange control systems.
set of objectives, but rather that the most important reasons given for industrial controls are very much the same. Table 3.1 presents a list of selected countries that have at some stage used direct controls.

The major justification for the industrial licensing system is the belief that the market mechanism is unable to allocate the scarce resources in a socially optimal way. The use of industrial licensing is, therefore, justified as the mechanism by which the state can control industrial investments and allocate resources to conform to predetermined priorities \(^1\) (and plan targets, if any). The common presumption, of course, is that the state is omniscient and the resulting allocation of resources will be the socially optimal or desirable one.

The prevention of market structures from becoming monopolized is another very common objective. In many developing countries, ownership of assets is concentrated in the hands of few economically and politically powerful families. The dearth of entrepreneurial and managerial talent and the scarcity of investment funds preclude a dissolution of this concentration. The state uses the industrial licensing system in an attempt to prevent any further concentration of ownership of industries. Industrial

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\(^1\) It is not intended to go into detail as to how these priorities are determined. Suffice it is to say that a careful cost/benefit analysis is not common. More often than not it is a "subjective" determination of priorities; i.e., licences are not allocated to entrepreneurs who wish to enter "non-essential" industries. These industries are often defined by the planners as those that provide "luxury" goods such as televisions, automobiles, refrigerators, etc. On the other hand, licences may be granted if the output of the investment meets a "pressing consumer need" or the investment earns or saves foreign exchange.
<table>
<thead>
<tr>
<th>Country</th>
<th>Industrial Licensing</th>
<th>Price Controls</th>
</tr>
</thead>
<tbody>
<tr>
<td>Algeria</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Bangladesh</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Brazil</td>
<td>Yes</td>
<td>Yes (1965)</td>
</tr>
<tr>
<td>Chile</td>
<td>Yes</td>
<td>Yes (1973)</td>
</tr>
<tr>
<td>Colombia</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Egypt</td>
<td>Yes (1975)</td>
<td>Yes</td>
</tr>
<tr>
<td>Guatemala</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>India</td>
<td>Yes (1951)</td>
<td>Yes (1955)</td>
</tr>
<tr>
<td>Indonesia</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Iran</td>
<td>Yes (1955)</td>
<td>Yes</td>
</tr>
<tr>
<td>Ivory Coast</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Malaysia</td>
<td>Yes (1975)</td>
<td>No</td>
</tr>
<tr>
<td>Mexico</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Morocco</td>
<td>Yes (1956)</td>
<td>Yes (1956)</td>
</tr>
<tr>
<td>Nigeria</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Pakistan</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Papua New Guinea</td>
<td>Yes</td>
<td>Yes</td>
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<tr>
<td>Philippines</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Senegal</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Spain</td>
<td>No (1963)</td>
<td>Yes</td>
</tr>
<tr>
<td>Sudan</td>
<td>Yes (1967)</td>
<td>Yes (1967)</td>
</tr>
<tr>
<td>Taiwan</td>
<td>No (1954)</td>
<td>No</td>
</tr>
<tr>
<td>Tanzania</td>
<td>Yes (1967)</td>
<td>Yes (1973)</td>
</tr>
<tr>
<td>Turkey</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Yugoslavia</td>
<td>No</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Note: Dates associated with the institution or elimination of controls have been provided where available.
licences are, therefore, to be granted to the small entrepreneur in preference to the large industrial houses in an effort to promote a competitive environment. Thus, the protection and encouragement of 'small' industries is an objective affiliated to the prevention of monopolistic market structures.

The promotion of regionally balanced industrial development is another, often articulated objective of the industrial licensing system. It is used to restrict industrial investment in a region where industrial activity is concentrated. The licensing system is, thus, a means of reducing disparities in the trends of development in different regions and thereby of creating employment opportunities in the rural and semi-urban regions of the country. 1/

Price controls have been motivated in most countries by three factors: the first is the equity or "distributive justice" considerations that have played a large part in the implementation of price controls. The justification here is that the income of the poor must not be adversely affected; the objective is, therefore, to protect the consumer from excessive price mark-ups and, thus, to ensure an equitable distribution of consumption at low, controlled prices. This is particularly true for "essential" goods such as kerosene, edible oils, sugar, bread, cloth, etc. In some countries, however, (e.g., in Egypt and India) the list of price-controlled goods

1/ It will be noted that these objectives are similar to the ones cited for state ownership/control of the production process. Industrial licenses are merely another set of tools used to achieve the same objectives. Needless to say, the economic implications of these tools are very different. See Section 3.3.
includes washing machines, refrigerators and automobiles. 1/ In addition, in many countries such as Turkey, Egypt and Tanzania, public sector firms are also subject to price controls for the same equity reason; to increase the financial surpluses of such firms is at best a secondary objective of the state. 2/ In Egypt, however, there is a trend towards decontrol of prices for some items; in 1978, 28 commodities were released from price controls.

The second factor that motivates price controls is the desire to ensure an adequate supply of raw materials and intermediate inputs to "priority" sectors at "reasonable" prices. Finally, the third factor is the prevention or mitigation of inflation. The assumption here is that the increased scarcity would be reflected in an increase in the price of intermediate inputs or products with strong forward linkages. The impact of the increase in the price level of such products would, therefore, be transmitted to the whole economy. 3/

What has been the impact of such direct industrial controls on the industrialization process and the economy as a whole? Have they been successful in attaining their objectives or have they, in fact, enhanced the state of affairs that they were initially designed to discourage? The efficiency implications of the system are discussed below.

1/ See Table 3.2 for a partial list of price controlled commodities in developing countries. It is intended to be illustrative only.

2/ This issue has already been discussed in Section II.

3/ This argument has also been used by countries who resist upward changes in the price of foreign exchange, i.e., a devaluation.
## Table 3.2

A PARTIAL LIST OF PRICE CONTROLLED COMMODITIES IN SOME DEVELOPING COUNTRIES

| 1.  | Mixed low grade cotton                  |
| 2.  | Cotton fabrics                          |
| 3.  | Cotton Yarn                             |
| 4.  | Underwear                               |
| 5.  | Utility footwear                        |
| 6.  | Sockets                                 |
| 7.  | Blankets                                |
| 8.  | Sweaters                                |
| 9.  | Paper                                  |
| 10. | Drugs                                  |
| 11. | Cement                                 |
| 12. | Oxygen, acetylene and nitrous oxide gas|
| 13. | Alcohol (Ethyl)                         |
| 14. | Domestic insecticides                   |
| 15. | Paper for cigarettes                    |
| 16. | Note books, copy books, dossiers and paper packets |
| 17. | Basalt products                        |
| 18. | Leather (tanned)                       |
| 19. | Sodium silicate                        |
| 20. | Petroleum products                     |
| 21. | Gasoline                                |
| 22. | Household disinfectants                |
| 23. | Aluminum wire                           |
| 24. | Electric cables                         |
| 25. | Matches                                 |
| 26. | Formaldehyde                            |
| 27. | Butane gas                              |
| 28. | Chlorine                                |
| 29. | Industrial gases                        |
| 30. | Linseed oil                             |
| 31. | Flour                                  |
| 32. | Non-rationed tea                       |
| 33. | Bread                                  |
| 34. | Cotton seed oil                         |
| 35. | Maize oil                               |
| 36. | Sugar                                  |
| 37. | Pasteurized and curdled milk            |
| 38. | Cheese                                 |
| 39. | Soap                                   |
| 40. | Macaroni                                |
| 41. | Shortening fats                         |
| 42. | Twisted iron                            |
| 43. | Kerosene stoves and parts              |
| 44. | Insulated electric pipes                |
| 45. | Washing machines                        |
Table 3.2 (Con't)

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>46.</td>
<td>Sewing machines</td>
</tr>
<tr>
<td>47.</td>
<td>Radio sets</td>
</tr>
<tr>
<td>48.</td>
<td>Air conditioning sets</td>
</tr>
<tr>
<td>49.</td>
<td>T.V. sets</td>
</tr>
<tr>
<td>50.</td>
<td>Batteries</td>
</tr>
<tr>
<td>51.</td>
<td>Refrigerators</td>
</tr>
<tr>
<td>52.</td>
<td>Glass sheets</td>
</tr>
<tr>
<td>53.</td>
<td>Tractors</td>
</tr>
<tr>
<td>54.</td>
<td>Cars</td>
</tr>
<tr>
<td>55.</td>
<td>Lorries and buses</td>
</tr>
<tr>
<td>56.</td>
<td>Lorry chassis</td>
</tr>
</tbody>
</table>
3.2 The Economic Implications of the Direct Control System

The policies of many developing countries have been implemented with greater use of direct industrial controls than have the policies of the more developed countries of the West. This has been confirmed by two separate major studies [32, 82]. Neither study has evaluated empirically whether the net impact of these direct controls has been beneficial or detrimental to industrial growth; nor are there any other studies with empirical evidence which one could use to substantiate a particular conclusion. The reason for the lack of empirical evidence is due to the difficulties of isolating the impact of controls on any of the objectives (stated in Section 3.2) due to the presence of other policy instruments. This, however, does not negate the need for a careful cost/benefit analysis using shadow prices to determine the social desirability of using such tools. Economic theory indicates the undesirability of direct controls and that there is a net welfare loss to the economy from their use; it is on that basis that the arguments will be presented. The need for empirical analysis is, however, based on the fact that the net social cost of using such instruments in different environments could be presented to the policy makers; this would be more useful for enlightened decision-making than the qualitative arguments presented below.

3.2.1. Industrial Licensing

With respect to industrial licensing, studies in Brazil [32, 108], Egypt [38], India [8 15], Mexico [32, 66], Pakistan [32, 75], Spain [31] and Taiwan [32, 53] indicate that, over the period when industrial licensing has been in force, the state was not more knowledgeable than the market with regard to the net social benefits that could be derived from the industrial sector. The industrial licensing system gave rise to a variety of economic
costs and to very few of the expected economic benefits. The realization of these net economic costs led to the relaxation of the system in Spain after 1963 [31] and to its elimination in Taiwan after 1954 [32]. The other countries have, at various times, attempted to 'fine-tune' or improve on the system without much success [32].

In most countries, the allocation of licenses has in effect operated in an essentially ad hoc manner; economic criteria on which the decisions were to be based were rarely established and no explicit weights were attached to the different objectives. Even in Spain, where the government agencies responsible for the licensing system worked out the economic criteria for the allocation of licences, the authorities were unable to apply them on a systematic basis. As in the case of India, the operation of the system degenerated to an ad hoc basis. 1/ Hence, the important questions of optimal location, size, time-phasing and choice of technique were rarely addressed and the individual cases were, therefore, not examined in terms of their social profitability. In addition, the fact that unsuccessful applicants could not obtain the reasons for licence rejection precluded any potential for "learning-by-doing" and, thus, prevented applicants from assessing their chances for obtaining formal approval with any accuracy. The applicants also could not obtain a comprehensive licence for the complete project; permissions were often granted for only the initial phase of the project with no guarantees for future phases. This resulted in a sub-optimal choice of scale by the investor.

1/ The use of industrial licensing as a tool of plan enforcement in India is also discussed in Section 4.3.2.
The uncertainty resulting from such an ad hoc system imposed real costs to the economy in terms of foregone social output. For one thing, the gestation lag, between an entrepreneur’s decision to invest and the actual plant construction, increased. For another, the inefficiencies inherent in the administrative procedures resulted in significant delays. The delays were not caused by an attempt to obtain more information, in which case they could be justified, but by administrative shortcomings; they, in turn, resulted from a lack of clear definition of the responsibilities and from the overstaffing of the public agencies [31]. The resulting net loss to society manifested itself in the increase in the prices of domestic and imported inputs, the sub-optimal timing of investment and the lowering of investment activity due to the associated risks and uncertainties.

The only quantitative evidence regarding the approximate costs associated with the delays in the licensing system is available from India [43]. In three case studies undertaken by the Ministry of Industrial Development in 1973, the total time-lag for obtaining an industrial license varied from 593 to 978 days. During that time, the study determined that import prices of capital goods were rising at 10 percent per year and, as a result, the minimum cost of the delays amounted to approximately $50 million per year. This excluded any consideration of the costs of foregone consumption.

Countries that imposed industrial licensing systems have also suffered from the diversion of skilled manpower, in the form of extra civil servants, required to handle the extra administration of the system. This has been observed in countries with as diverging economic environments as India and Mexico [32]. In addition, given the scarce entrepreneurial talent available
in most developing countries, the diversion of the time of owners and managers to conduct non-productive activities inherent in such a system represented a high opportunity cost to the country. These socially non-productive activities included preparing and submitting applications, arguing their case with bureaucrats and undertaking activities to expedite their applications. None of these activities contributed to industrial development; each contributed a cost to society in terms of the foregone output.

Bribery, corruption and graft were also prevalent in most of the countries that were studied. This is not surprising, for any system that imposes constraints is conducive to bribery; the financial transaction is then used to influence the decision in a way that will confer benefits to the applicant. The broader the discretions that are left to the government officials and the vaguer and more ambiguous the rules, the higher the probability that bribes will be used to expedite and influence the final outcome.

In addition, the low salaries paid to civil servants in some countries increases the potential for bribery and such payments become part of a "system by which those who use the services of the particular department of the government share the payroll expenses of those who labor within" [49, p. 563].

1/ A more sophisticated argument is presented by Krueger [69].
most afford to pay and not to those eligible "in the national interest."
Therefore, in attempting to avoid what has been perceived as the inadequacies
and irregularities of the market system, the state has replaced one type of
market force by another.

Frankena [36] has shown that the industrial licensing system of
India has also had a strong negative impact on the efficient design of
goods and indigenous research and development. He concluded that the
restrictive regime "reduced the incentive and ability of firms to receive
the best available designs, to adopt subsequent design improvements, to
adapt designs to local conditions and to undertake other innovative activi-
ties" [36, p. 257]. Though similar studies for other countries are not
available, this effect is very likely to be present in any other similar
licensing system. Research, under such an environment, is discouraged
because there are never any assurances that the results can be translated
into production which constitutes the only means of obtaining a return on
knowledge. In addition, the "subsequent design improvements" are not under-
taken because a new license is required each time there is a substantial
modification of the product. There is, therefore, very little incentive
to undertake the cost of research and development for the risk element is
very high and the expected value of the benefits very low.

The above discussion has presented the costs to the economy of an
industrial licensing system. Not all the costs have been incurred to the
same extent in every country that has been studied. Clearly, some costs are
more important in some economic environments than others. Nevertheless, all
the countries have exhibited all these negative aspects to various degrees.
But what about the benefits and the objectives of the licensing system?
Have they been achieved to the extent that would justify the economic costs discussed above? The answer appears to be unambiguously no. "The licensing regimes, although they might have induced earlier and more diversified development of the manufacturing sector, clearly failed (to varying degrees among the countries under consideration) to achieve the stated objectives and to prevent investment in activities thought to be less desirable" [32, p. 637]. We now turn to two of the stated objectives: regional balance, and the devolution of monopoly power and the encouragement of the small entrepreneur.

The use of industrial licences to bring about regional balance is one example of the system contributing to economic inefficiency. Most countries are subject to the political pulls and pressures of their various regions. In the absence of rational economic criteria to determine the optimal location of a plant, the regional interests represented in legislatures lead the licensing authority de facto to satisfy as many requests as possible. In addition, the objective of regional balance often merges with the government's desire to minimize monopoly power by increasing the number of individual plant units. The result, in most cases, has been a sub-optimal location for plants and the proliferation of sub-optimal plant scales in each region. Thus, economies of scale have not been taken advantage of due to the increased number of plants located in the different regions of the country. In Spain, the licensing system contributed significantly towards industrial fragmentation; the structure of firms in the heavy industries was strongly biased towards small units. The worst case was the steel industry which was fragmented into over 100 firms, none of which specialized in any products [31]. In Brazil, industrial licences were not effective in achieving regional balance. Despite the
licensing system, industrial growth remained concentrated in the Center-South (mostly in Sao Paulo) at the expense of the poorer and more populous Northeast [108]. The Northeast's share of income declined and the industrialization of the Center-South caused an increase in the migration of the rural population to the urban centers; this presented the government with additional organizational and financial burdens.

The fact that industrial licences act as a one-edged sword is a major reason for their ineffectiveness for location policy. They can proscribe entry into a certain region, but cannot, by themselves, stimulate investment in the desired region. Additional incentives in the form of subsidies are essential to eliminate the wedge between private and social profitability; if private profitability in a region is negative, the allocation of an industrial licence by itself is not likely to encourage private investment there. This characteristic of the licensing system appears to be overlooked by many governments and could in fact contribute to a less than the optimal level of total investment [43].

The objective of preventing the monopolization of market structures has also not been achieved in any of the countries studied [32, 82]. The primary reason for this was the sequential nature of allocating licences, i.e., on a first-come-first-served basis. The sequential system of allocation favored the large rather than the small entrepreneur. In many cases, the attainment of licences depended upon the closeness of the applicant to the government in power; this effectively excluded the small entrepreneurs and biased the system towards the larger firms. In addition, these large firms were generally able to allocate more resources in terms of manpower and time and were generally better informed and organized than the small firms. This
permitted them to apply for licences more quickly and, thus, secure a position for themselves at the front of the queue. Multiple applications for the same industry also permitted the large corporations to pre-empt the available licensing capacity. These aspects, therefore, prevented the entry of small firms into the industrial sector.

It is not clear to what extent such a cumbersome system has discouraged private incentive. Clearly the ones who would be most discouraged would be the ones who could least afford to bear the cost; i.e., the small entrepreneur who is devoid of contacts with the state officials, who lacks the necessary information and organization to minimize the costs of obtaining the licences, and who is without financial resources to bribe officials or to engage professional manpower to deal with the system. The fact that the licensing system is anti-competitive does not appear to have made an impact on state officials. Multiplying the number of inefficient units does not encourage competitive behavior; it is the free entry into the market that is the essential ingredient. 1/ It is, therefore, not surprising that the objective of encouraging small rather than large firms has not met with very much success.

3.2.2 Price Controls

The reliance on direct price controls imposed on manufactured and semi-manufactured goods rather than on the price mechanism is characteristic of many developing countries. They include countries with varying economic environments: Brazil [10, 108], Colombia [10], Egypt [38], India [15, 36], Malaysia [32], Mexico [32, 66], Pakistan [32, 75], Spain [31], Sudan [1],

1/ This is a necessary though not sufficient condition for a competitive environment.
Turkey [32, 71] and Yugoslavia [32] have all resorted to price controls. The policies and procedures followed by these countries are very similar and the economic implications of their actions are, therefore, not different. These are recounted below.

Prices are generally controlled by a statutory agency of the state such as the Industrial Control Board in Egypt or the National Price Commission in Tanzania. The function of such an agency is the monitoring, reviewing and altering of prices of industrial commodities. The decision-making process in such an agency, however, has been hampered in most countries by the lack of clearly defined priorities. Thus, the objective of allocating resources to priority sectors has rarely been met. In some countries such as India and Egypt, this lack of guidelines and priorities has led to a 'gains from trade' situation for the private sector. The private sector has bought the price controlled commodity (an input such as steel) from the public sector and then has legally sold the final finished product at market prices. The effect of such a system is to transfer profits from the public sector to the private sector; i.e., the private sector users are subsidized by the public sector. 1/

This policy, therefore, has cost implications for the state in the form of lost revenues (which now accrue to the private sector) and no benefits, at least in the short run, in the form of lowered final output prices for the consumers.

Another dimension of the imprecision of the system is that "essential" goods whose prices are to be controlled have not been clearly defined; there is no clear-cut definition of what constitutes an "essential" good to the community and what does not. It is not obvious why tape recorders in Tanzania and washing machines and refrigerators in Egypt have been included

1/ This issue was also discussed in Section 2.3.
in the list of such commodities. 1/ This problem, however, is endemic in most developing countries; it results in an extremely large number of actual products whose prices have to be monitored and reviewed periodically. 2/ In addition, quite often statutory price agencies have a rather small staff responsible for the process; in Tanzania and in Egypt, the number is less than 20. 1/ The task of monitoring effectively the prices of a large number of products is, therefore, virtually impossible. Thus, a clearer (and perhaps more ethical and useful) identification of "essential" commodities would go a long way towards alleviating the load of an overburdened staff.

The prices of most commodities in these countries are based on a cost-plus pricing system. The range for this mark-up on costs varies from country to country. 3/ The criteria for establishing these mark-ups are also not well-defined and appear to be ad hoc. In setting the maximum prices, the price control agencies take various costs into account. There is, however, little consideration given to the level of output at which these costs are to be evaluated. If under-utilized capacity exists, say due to a shortage of raw materials as is the case in many developing countries, the average

1/ In India, there is the interesting case cited where the price of cars was effectively controlled and "an important part of the distributive system was the allocation of a quota for official allotment to civil servants and politicians in government on a 'priority' basis." [15, p. 276]. Since the controlled price was below the market equilibrium, this amounted to a subsidy to the civil servants and politicians, designed by them for their own benefit. The authors note that such controls, which benefitted the implementers, were more effectively implemented than controls on, say, foodgrains distribution.

2/ In two countries where such lists have been investigated, Tanzania and Egypt, the number of price-controlled items exceed 3,000 and 52, respectively.

3/ In Tanzania the range is from 10% to 20% of total costs and in Egypt from 5% to 30%. Costs are defined in the accounting usage of the term rather than the economic one in determining the final prices.
total cost, and hence the maximum price set, is likely to be higher than at
the optimum level of production (i.e., the point of minimum average total
cost). Hence, under-utilization of capacity can make a significant contri-
bution to raising the absolute price level under this system of determining
prices.

Another common situation is that prices are set on the basis of
\textit{current} costs; thus, firms that are in the stage of under-utilized capacity
have high average total costs. Once the price has been fixed at that level,
it usually stays "locked in" at that high level as the plant moves towards
greater capacity utilization. In such cases, the manufacturer is often
under no legal obligation and has no incentive to reduce his selling price
or to apply for its downward revision. Therefore, the cost-plus pricing
system has no incentives for efficiency or improving productivity; in fact,
it encourages inefficiency since the producer is assured a certain rate of
return through the cost-plus system. Inflationary pressures are, therefore,
built into the system.

Further, in most countries, prices may remain fixed at a particular
level until the manufacturer makes a specific request for a price change or
if the price control agency receives complaints from the public. However,
the manufacturer does not have to apply for a review at regular periods.
Consequently, if the prices of inputs decline (as is often the case for some
imported inputs), it is to the manufacturer's advantage not to request a price
review. Technically, in most countries the price control agency may choose
to review prices whenever it deems such an action to be necessary. But it is
an extremely difficult task to monitor all input prices and identify those
manufacturers who have benefitted; the difficulty of such an action is magnified by the small size of the price control agency's staff. Such reviews, therefore, are not frequently conducted. On the other hand, there will always be pressures on the price control agency to review prices more frequently during periods of rising input prices and costs. Hence the review mechanism is asymmetric as no such pressure exists during deflationary periods. In Egypt, however, during a period of increasing raw material prices in 1974, the price control agency, recognizing its limitations, approved all requests for price increases prior to any verification of the costs. These verifications followed later. But, given the magnitude of this verification process, the time lag between approval and verifications was quite large. 1/ Thus, price controls are not very effective in controlling inflation.

Another consequence of the price control system is the shortages that result from the lack of investment. Because of cost inflation and the emphasis of the price control system on consumer protection, many firms have not been able to generate investment funds for new capacity expansion. Combined with the lack of incentives for cost minimization, the domestic industries are unable to maintain their efficiency and expand capacity from internally generated funds. In Pakistan, there have been chronic shortages of fertilizer supply [43]. The same was true of cement production in India which was found to be falling well short of Plan targets [8, 15].

1/ The verification process undertaken by the price control agency in Egypt involved a check of every invoice of every input used in the production of each differentiated product.
The price control system also has built into it a set of incentives that encourages the cross-subsidization of products. If the price of an "essential" commodity is fixed at a level such that the manufacturer makes a loss on it, the commodity is either subsidized directly or indirectly by increasing the price of other ("non-essential") products made by the same firm. This is done to cover the loss on the original ("essential") product. The textile industry in many countries presents such an example. Firms lose money on low-price cloth but this is compensated by increasing the price of other fabrics. The impact of such a policy is that consumers of the "non-essential" product subsidize those of the "essential" one. In addition, there are the resource allocation implications; in the long run the firm finds it profitable to restrict (or even terminate) the production of the "essential" commodity and to reallocate its resources to the "non-essential" one. Attempts have been made to prevent this by mandating a certain level of output of the "essential" commodity, but given the built-in incentives against its production, it would be difficult to verify the true reasons for the low output.

Finally, there is the additional complication that, in a situation of rapid cost inflation, some prices are temporarily fixed below the firm's break-even point. Historical evidence in many countries (e.g. Egypt, Turkey, Tanzania and India) indicates that no public sector firm is allowed to go into liquidation; it is, instead, assisted through government subsidies. The implications of these two aspects are that the taxpayers, in fact, do pay the actual cost of production, although they do so indirectly through the various forms of taxation used to generate government revenues. As a result, not only does the consumer pay for the product, but the one who does not consume that
particular product indirectly pays for it, in effect subsidizing the individual who does consume that product. This may be justified as a mechanism of income redistribution but only if the products that require subsidization are those consumed predominantly by consumers at the lower end of the income distribution scale. This, however, is not true of most public sector output.

There are also "second level" effects. Government revenues that have been used to keep the firms afloat might have been put to better use. Hence, the opportunity cost to the society of ill-conceived price control is much higher than is immediately apparent. In addition, since incentives for efficiency (i.e., cost minimization) are weak or non-existent, the inflationary pressures that are inherent in the system tend, in the long run, to reduce the real income of the consumer.

The evidence and the above discussion indicate that, as in the case of industrial licensing, the price control system is not and has not been an effective tool for achieving the stated objectives of the government. 1/ Due to the massive problems of administration, verification and control, the price control agencies have not functioned very effectively. The pricing system itself has tended to set up signals and incentives that are not conducive to the efficient allocation of a country's scarce resources. Unfortunately, the price controls, as exercised by the various governments, are consistent with the prevailing philosophy of state intervention without a careful analysis of the costs and benefits of such a system as compared to alternative methods of achieving the same objectives.

1/ Controls over prices can be a rational policy for allocative efficiency in the case of "natural" monopolies; this has been discussed in Section II.
3.3 **An Agenda for Reform**

In this section, suggestions for reforming the industrial control system are made. The two major objectives of industrial licensing, monopoly control and regional (economic) balance, can be achieved using instruments other than industrial licensing and these are discussed. However, there is also the need to distinguish between long-run policies from short-run ones. The former represent the "preferred" state that one would wish to achieve. These are discussed first. However, it is not practical to suggest that countries that have been immersed in a system of controls should disband them overnight. Thus, short-run (transition) policies are also suggested.

The preceding section has indicated that direct industrial controls are not a *deus ex machina* which eliminate one or another allocative consequence of market failure and attain the objectives of the state. The creeping recognition that controls of this sort have not worked effectively is dawning on many developing countries and many have either eliminated them completely or are in the process of dismantling them, e.g., Spain, Taiwan and Brazil. These countries have recognized that not only have industrial controls seldom worked in the way they were supposed to, but in many cases they were so positively perverse, that they may have brought about significant resource misallocation leading to a net welfare loss to the state.

The controls as instituted have been criticized for their ineffectiveness on practical grounds. On theoretical grounds it is the theory of second best that provides the most general caveat about control and regulation.
aimed at economic efficiency [79].  

1/ The same theory, however, has been used to justify the desirability of piecemeal intervention in markets or sectors considered in isolation. The counter argument is that though the policies aimed at specific markets are not valid in general, they may be valid in specific cases, 2/ but they require additional conditions and specifications which are often not known in practice. Thus, there can be no assurance that a policy aimed at reducing monopoly power in any one market will necessarily increase social welfare [99]. The practical implication of this theory is the fact that decision-making about control regulation is much less straightforward than is immediately apparent. The reason is because good judgment about complicated economic circumstances, rather than mathematically demonstrable optimal conditions, must be relied upon in deciding which industries to regulate or control and what the resulting social benefits will be [88]. It is this judgement factor that prevents the maximization of economic welfare through control mechanisms in most countries.

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1/ The theory states that, in principle, a positive social dividend can always be achieved by a move from a Pareto non-optimal to a Pareto optimal allocation. Pareto optimal conditions, therefore, define welfare-maximizing conditions only when they apply to all economic activities. The satisfaction of Pareto conditions is, thus, considered to be the target towards which society must move. It may be that one or more of the Pareto conditions cannot be satisfied because of institutional constraints, monopoly or whatever. The "best" welfare position is now unattainable and the relevant question is that can a "second best" position be attained by satisfying the remaining Pareto conditions? The answer is no, the attainment of optimal conditions in every other sector in the economy is not consistent with the constrained second best result. The theory, therefore, says that if one or more of the necessary conditions for Pareto optimality cannot be satisfied, in general it is neither necessary nor desirable to satisfy the remaining conditions.

2/ Theoretically, most of the Pareto conditions remain intact if utility and production functions are both separable.
As in the case of public enterprises, there appears to be a strong correlation between those countries that are committed to comprehensive planning and those that use direct industrial controls. In many cases, direct controls are the tools used to attain plan targets. Yet, there are no economic arguments for the preference of such controls which are superimposed on market forces, to the use of other measures such as taxes and subsidies that are, in general, more desirable. In addition, the economic costs of the latter instruments are far more apparent to the policy maker than those of controls, thus, their indiscriminate use would also be inhibited.

The two objectives of industrial licensing, monopoly control and regional growth, will now be discussed. Long-run policies to attain these objectives will be initially presented. The issue of short-run policies or partial reforms will be taken up later.

Monopoly control, which is the objective of most governments in developed and developing countries, can be achieved using other instruments and at lower social cost than the use of licensing and, with some exceptions, price controls. As mentioned before, competition is not enhanced by the encouragement of several small inefficient units whose growth is discouraged, but rather by the free entry and exit of firms; viz. without the social costs associated with obtaining a licence. Competitive pressures from the foreign trade sector, in addition, would ensure that the social costs associated with monopolistic structures would be minimized. Thus, tariff policies may be used to deal with monopolies, i.e., by denying tariff protection to monopolistic industries, and, thus, imposing a constraint on their pricing decisions. 1/

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1/ This issue has already been discussed in more detail in Section 2.3.5 and, therefore, will not be repeated here.
In addition to the encouragement of a competitive environment to "control" monopoly power, there are other instruments of policy that have been used with varying degrees of success in different countries. The powers of the state to tax and subsidize might be employed to combat the growth of monopolies. Since one objective of the state is to capture monopoly profits, it may be possible to implement some kind of an excess profits tax which applies especially high marginal rates to income exceeding the opportunity cost of capital. Problems are, however, also likely to arise in the administration of such a tax, but it is conjectured that the social costs in this case would not exceed those associated with industrial licences. It should not be too difficult to incorporate such a tax into the corporate tax structure.

Antitrust legislation is another policy instrument used in many countries. In the United States and to an increasing extent in other developed countries, this is the main weapon wielded by the government in its effort to harmonize the behavior of the monopolistic enterprises with the public interest. Many developing countries have such legislation (e.g., the Monopolies and Restrictive Trade Practices Act in India). Its effectiveness, however, has not been carefully studied.

1/ For example, to ensure the expansion of the output to that which would prevail under perfectly competitive conditions, a subsidy equal to the difference between the marginal revenue and the price that would prevail under competitive conditions could be granted to the firm. To counteract the adverse income distribution effects that would result from this, a lump-sum tax equal to the subsidy could be imposed to take back with the left hand what was given with the right. The principal difficulty here is that it is not easy to levy lump-sum taxes with a neutral effect on output.

2/ The other instruments, i.e., public ownership and price control of "natural" monopolies, have been discussed in Section II.
Regarding regional (economic) balance, the absence of economic criteria in the licensing systems and the political pressures of state legislatures has led to socially sub-optimal regional growth. Tax incentives, wages and interest subsidies, and the provision of infrastructure are policy instruments that can be used much more effectively than industrial licensing to bring about regional development. These instruments have been used by many countries including developed ones such as the UK [104]. The experience of using these policy instruments, however, has been varied. For example, the evidence with regard to Korea seems to indicate that the tax incentives offered were too small to influence the decentralization of the industrial base out of the Seoul area; the same is true for Bangkok in Thailand [59]. In both these cases, the externalities afforded to firms due to the superior (central) location exceeded the subsidy element of the incentives. This is, therefore, more indicative of the incorrect evaluation of the subsidy element, rather than of the incentive itself. On the other hand, the interest subsidies offered for investment in the Northeast of Brazil have been responsible for many industrial enterprises locating there [107]. These subsidies, however, appear to have been unintentionally biased in favor of import substituting and against export-oriented manufacturing industries. In addition, they favored capital-intensive industries and capital-intensive methods within industries. Thus, the industrial growth of the Northeast is characterized by these features.

Another study on tax incentives in developing countries [72] has shown that, though they attained their objectives, these incentives (which included accelerated depreciation, reduced taxes and investment credits) were structured in such a way that in some countries (e.g., Israel) they offered
the greatest incentives to the projects that required it the least. The study also concluded that in many developing countries tax exemptions and accelerated depreciation allowances as administered were not effective for low-return projects; i.e., for projects for which the pre-incentive rate of return was low. In addition, it showed that the total (cumulative) incentive effect of all three incentives was greater than the sum of each industrial incentive due to the interactions among the incentives when combined.

The above discussion emphasizes two points. The first is the fact that such incentives are not costless (clearly there are at least administrative costs) and can also result in unintended and undesirable side-effects even if the original objective (i.e., the regional dispersion of industrial growth) is attained. The second and more interesting implication of the discussion is that policy makers who choose to use tax incentives to promote industrialization should recognize the reinforcing characteristic of the incentives which raises the total level of incentives to the investor, viz., that the whole effect is greater than the sum of its parts.

Despite such recommendations for change, for practical reasons countries that have been immersed in direct control mechanisms are unlikely to disband them overnight; nor should they where price controls are concerned. It would be more reasonable and prudent to eliminate direct controls in the long run rather than in the short run. In other words, the disbanding of controls should be phased over an announced and specified period of time. This would eliminate any aspect of uncertainty associated with the transition process. To ensure the success of such a transition, the government must maintain its announced schedule without any deviations. It is conjectured that a satisfactory time span for most developing countries need not exceed
five years. However, the length of the transition process depends crucially on the extent of domestic distortions created by the control system. For example, if prices have been controlled at a level close to the market equilibrium, then the dismantling of such controls could be accomplished within one year (as in France). If, on the other hand, the difference between the controlled and the equilibrium price is very large, then the transition phase must lengthen out accordingly.

The gradual or phased dismantling of controls would thus start the process that would minimize the social costs of ad hoc decisions that have been necessitated by bureaucratic inertia. The emphasis should, therefore, be on streamlining the present structure without drastically changing the essential features of the economy. Thus, partial reforms would help to create the building blocks for subsequent comprehensive reforms in the total incentive structure of the economy. It should also be recognized that the gradual transition away from direct industrial controls is not likely to provide benefits beyond a certain point, even in the long run, without introducing coordinating reforms in other areas, particularly in the incentive structure in the foreign trade and domestic capital markets. 1/ With this caveat in mind, we turn to the immediate question of partial decontrol.

With respect to industrial licenses it is clear that the lack of adequate criteria for their allocation has been a major problem; the ad hoc decision-making process has contributed significantly to social inefficiency.

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1/ For a discussion of the experience of eleven developing countries with respect to the trade incentive structure and for a comprehensive discussion of incentive policy reforms, see Balassa et al. [5, Chapters 3 and 4.]
As a first step, therefore, governments should clearly establish and identify high priority sectors and specify the criteria for allocating or denying licences within a priority industry. These high-priority industries should be restricted to a few well-chosen ones where there are strong economies of scale and long gestation lags which would not permit rapid correction of major errors. The economies of scale would give rise to interdependence among the various projects within the sector and co-ordinated planning would be required since the existing market forces would not guarantee an "optimal solution." The government could use the licensing system to direct the location, scale, choice of technology and time-phasing of such projects. It should, however, be recognized that, as mentioned before, the licensing system will not ensure that the licensed capacity will, in fact, be installed; thus, fiscal incentives may be necessary to stimulate the investment.

The criteria by which the government allocates licences clearly need to be established; a sound cost-benefit analysis which determines a project's optimal scale, location and timing is essential if the entrepreneurs are to be properly directed. In addition, the sequential allocation of licences should be replaced by a simultaneous one conducted periodically. This would permit the government to choose from several alternative applications for fulfilling the same objectives. Once the few priority sectors and the criteria have been established, there appear to be no overriding considerations for further licensing. Thus, all other industries should be delicensed and appropriate fiscal incentives should be used instead.

Administrative reforms and periodic announcements of the criteria would also go a long way towards eliminating delays and uncertainties. If several agencies are involved in the decision-making process, they should
consider the applications simultaneously to eliminate delays. Where possible, a structure should not be established such that the approval of one agency is contingent upon the approval of another. If licence applications are rejected, the reasons for rejection should be made explicit. If the applicant is then able to take the agencies' concerns into account, a mechanism should be established that would expedite the process for such "second-round" applicants.

Price decontrols would also contribute significantly to a desired allocation of resources and greater economic growth. The social costs of price controls have been already discussed; however, there are also social and political costs associated with rapid price decontrol. The large changes in relative prices can cause rapid and large shifts in the distribution of income; some manufacturing activities would become unprofitable while others would have their profitability greatly increased. There would be changes in the real wages in manufacturing and the resulting inflation and social unrest could lead to a decline in investment activity and business confidence.

The expectation that wage/price controls could be reimposed to control the deteriorating situation would lead to even higher prices. There are, therefore, strong arguments against rapid decontrol of prices and in favor of gradual decontrol. Under these circumstances, declines in real incomes of certain sections of society could be avoided if control were removed in conjunction with increases in real incomes. This would also permit economic activity to shift gradually from the unprofitable to the profitable. In addition, these domestic price changes would enhance the effectiveness of any foreign trade reform by the fact that domestic prices would gradually become aligned to factor prices and to the scarcity values of the various commodities. This would, therefore, begin to diminish the wedge between domestic and foreign prices.
Nothing new has been said here but the experience of some countries (e.g., Egypt and Peru) has highlighted the potential for political and economic chaos as a result of rapid price decontrol. It is clear that the appropriate rate of price decontrol and the sequential selection of the industries to which it is applied would vary from one country to another and this would depend very much on the particular circumstances. There do not appear to be any general rules or principles. 1/

1/ Unlike the transition process associated with foreign trade regimes, that associated with direct industrial controls of the sort discussed above is a very under-researched area and not much is known.
IV. THE ROLE OF THE STATE IN THE PLANNING PROCESS 1/

About thirty years ago industrial planning was in its infancy. The draft outline of a five-year plan published by the Planning Commission of the Government of India in July 1951 was the first comprehensive national planning document published for a developing country. At that time, economists advocated planning as the fastest and most efficient path to economic growth. It was generally agreed that total planning of economic activity was a necessary requirement for growth and that "active participation of the state in economic life is a new factor which must be taken into account as a new datum" [92, p.204]. It was, therefore, accepted that the state would initiate detailed economic planning to achieve the major structural readjustments needed. Planning was thus supposed to achieve the optimal allocation of resources since "in less developed economies, market prices of such factors of production as labor, capital and foreign exchange deviated substantially from the social opportunity costs, and were not, therefore, a correct measure of the relative scarcity or abundance of the factor in question" [110]. The implicit assumption that was made was that the state had the required resources to obtain the necessary information, to calculate the social costs and to enforce the plan, all at a low cost to the society.

Today, planning has become a well-established activity in many developing countries. The theoretical underpinnings of the development process, the statistical base from which the plans are formulated, and the

1/ Time constraints have precluded a fuller and more complete treatment of the subject of planning. In this section, the planning process refers primarily to "physical" planning and is defined as consisting of two components, (a) the formulation of plans and (b) the implementation (enforcement) of these plans.
computational capabilities had increased significantly over these past years. Input-output techniques are now quite common and more sophisticated tools such as linear, integer and mixed-integer programming are slowly, but increasingly, being used. 1/ Most developing countries have instituted national plans for economic development, among them Brazil, Colombia, Egypt, India, Israel, The Ivory Coast, Korea, Malaysia, Turkey and Yugoslavia.

Planning, thus, became a panacea for all problems. Multi-year development plans and direct government intervention to achieve the objectives of the plans were considered by many countries to be the most efficient way to achieve growth. However, experience has also brought about the recognition of the practical problems associated with formulating a detailed plan and with its implementation. The cycle is, therefore, now complete. In fact, there are many economists who find it difficult to support planning of any sort; when comparisons are made between planned and unplanned growth, their intention is often to demonstrate the superiority of the market mechanism over planned resource allocation [86].

The aim of this section is not to espouse either extreme, but to suggest ways in which economic planning can be relevant without resorting to a fully centralized structure of decision making. The view that will be taken is that planning is not only a technical process, but also a political one. In other words, the intention is to deal here not so much with the formal aspects and techniques of planning, 2/ but rather with the nature of

1/ Integer and mixed-integer programming techniques, however, are not as commonly used as linear programming ones.

2/ For a discussion of planning techniques and economy-wide models, the reader is referred to Chenery [25], Blitzer, Clark and Taylor [18], and Taylor [102]. For industrial sector planning models, see Chenery [23, 24]; for industrial subsector planning models and applications, see Stoutjesdijk and Westphal [101], Kendrick and Stoutjesdijk [106], and Choksi, Meeraus and Stoutjesdijk [27]. An extensive bibliography on planning techniques is also available in each of the above.
the planning process in which a plan is formulated and implemented through a specific institutional framework. To achieve this, the section is organized into five sub-sections. The first one (Section 4.1) briefly delves into the reasons why developing countries have chosen to go the planning route to growth rather than use the pure market system. This is followed (in Section 4.2) by a discussion of the characteristics of the planning process. The experience of some selected countries with planning is then described (in Section 4.3). This part highlights the differences between the desired characteristics of the planning process and the actual ones. Section 4.4 discusses the reasons for this deviation and the practical problems faced by these and other developing countries in formulating and implementing plan targets. This is followed by the final section (4.5) which suggests ways in which the planning process may be directed to function efficiently with the market mechanism. 1/

4.1 The Reasons for Planning

An economic plan is a technocratic conception of a feasible program to attain certain policy goals. This implies that the public interest as expressed in the plan supersedes decentralized decision making as expressed by market forces and reached by individuals or interest groups. A major aim of planning in most countries has been the establishment and expansion of manufacturing industry to maximize economic growth. The notable exceptions have been India, Argentine and Taiwan. India's First Five-Year Plan emphasized agricultural expansion rather than industrial growth; this policy was

1/ Since the national economic plans for most countries are essentially plans for increased industrialization, and since the process of planning is not differentiated by sectors, no distinction will be made in the paper between national industrial plans and national economic plans.
reversed in the Second Plan. Argentina's objective was income stability and distribution rather than growth; and Taiwan placed equal emphasis on agriculture and infrastructure, and industry [82].

Arguments that justify planning are similar to those made for other aspects of state intervention, i.e., the sub-optimal allocation of resources by the market, the presumed optimal allocation by plan enforcement, and the divergence between private and social profitability. 1/ The inadequacy of the market as a signalling device for future opportunities in a rapidly changing economic environment is the raison d'être for planning. Two major implications of this are (i) that the planning process involves rational target setting and the prescription and the enforcement of optimal paths to achieve these targets, and (ii) that the formulation of plans is a way to deal with the interdependencies in the industrial sector in a precise, quantitative way. 2/ It is claimed that attempts to mitigate this inadequacy by the state provision of information regarding demand forecasts and technological knowledge will not suffice and entrepreneurial interia will prevail. At best, this may result in a concentration of economic activity in the safer traditional fields such as textiles, to the detriment of potentially more profitable new activities requiring technological change. As a result, the absence of planned direction and co-ordination of investment needlessly retards economic growth.

1/ These aspects have been discussed before and will not be delved into here; they will be presented only in so far as they have a bearing on planning.

2/ For a comprehensive discussion of the interdependencies in the industrial sector and the decision making involved, see Chenery [22].
The discrepancy between private and social profitability is another justification presented for planned investment. If the private and social profitabilities diverge, then the private ranking of investment priorities would deviate from the social ranking. To correct this discrepancy, the government must determine (i.e., plan) the allocation of resources to conform to the social rankings. "Infant" industries are one of the more well-known examples of such divergences: new industries bear the cost of learning-by-doing, while the benefits also accrue to other sectors of the economy; thus private and social profitability are not the same. 1/

The importance of social goals other than private profitability are not reflected in the market mechanism. An example of such a goal is the spatial pattern of development. The market mechanism could result in a pattern of allocation drastically different from the "desired" one. Thus, the justification for regional planning. However, it should be pointed out that such an objective (regionally balanced growth) implies a multi-sectoral or a general equilibrium approach in which the spatial distribution of industry would be very different from a partial (sectoral) equilibrium point of view. 2/ Very sophisticated analytical tools are necessary to attain such a general equilibrium solution, particularly with industries that exhibit strong economies of scale; such tools are often not available in many developing countries.

1/ For a review of infant industry arguments see Corden [28] or Gruebel [42].

2/ For example, a plant location based on a sectoral or sub-sectoral (i.e., fertilizers or steel) analysis could be different if issues related to the urban sector are also incorporated.
Planned government investments are often also justified by the need for large-scale capital investment in industries such as petrochemicals, fertilizers and steel. In the presence of inefficient capital markets and the risk aversion of the entrepreneur, such investments are unlikely to take place without government intervention. This, however, is an argument for capital infusion from the state as opposed to planning per se. In order to determine the social profitability of such large investments, a careful analytical assessment is essential -- this can be referred to as a plan. However, such an assessment is no more necessary for the state than it is for the private entrepreneur, for the costs and benefits of any large-scale investment are equally important to both. It is only where social and private profitability diverge, as discussed above, that the issue of planning may enter the picture.

Additional reasons for planning include the pressures that arise from within a government's constituencies who wish to know where government policies will lead to, and from aid donor countries and international agencies who wish to ensure that the aid is well utilized and allocated appropriately.

The need for planning, therefore, arises from certain characteristics of developing countries: the inadequacy of the price system as a signalling device, the uneven distribution of income and the presence of externalities are among the many. At the same time, however, "the resources required for planning, namely administrators and information, are scarce. Hence ... the need for planning tends to be inversely related to the ability to plan" [41, p. 221].

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1/ This issue is taken up in greater detail in Section 4.4.
4.2 The Characteristics of the Planning Process

Lewis [77] and Tinbergen [106] suggest that countries which choose to plan their development should adopt three kinds of plans: "There should be an annual plan, a medium-term plan and a long-term perspective plan" [106, p. 150]. A perspective plan which assesses the country's long-term development over fifteen to twenty years is a convenient device for a systematic consideration of future costs and the implications of various investment decisions. In addition, perspective plans are a useful mechanism to identify bottlenecks as the economy expands, thus allowing planners to take anticipatory actions.

After the perspective plan is drawn up, it is recommended that a medium-term plan be formulated. Such a plan usually ranges from three to seven years; but it has, in some countries, been extended to ten years. For example, Thailand has had a six-year plan, and Chile a ten-year plan. Five years, however, is the most popular choice. The medium-term plan is much more detailed than the longer-term perspective plan, and it is the plan on which planners tend to concentrate most of their resources. Finally, the ideal system incorporates the annual plan. Its character and direction are determined by the medium-term plan. The annual plan is essential to the planning process, for it is the mechanism which makes the medium-term plan operational. In some countries these plans are often referred to as operational plans.

It can be seen that, in principle, such a comprehensive three-stage view of the planning process has great merit. It provides the necessary perspective to reconcile current investment decisions with long-run objectives. The comprehensive approach also guards against a serious misallocation of
resources and provides a public/private sector balance; the internal consistency achieved precludes unanticipated bottlenecks and imbalances which retard growth. In addition, there is a learning-by-doing benefit on those involved in the preparation of the plans and in educating them on the essentials of development.

In many developing countries, resource constraints preclude most planning agencies from undertaking such a thorough and comprehensive approach. Therefore, industrial planning follows very much the same pattern or principle in most countries; and this is true despite differences in national goals, ideologies and technical sophistication. A typical plan (which is usually the medium-term one) consists of the specification of overall growth targets in terms of output levels at the end of the planning period and productive capacities by sector of product group. "Key" projects such as major public works or large-scale industrial projects are often discussed in detail. Investment requirements are specified and the financial section of the plan discusses the source and availability of these funds (e.g., personal and business savings, government savings and net inflow of foreign capital). Most plans also present a set of balances (which are not always rigorous) of inter-sectoral or inter-industry commodity flows, as well as national income and foreign account balances. Fiscal and monetary measures which are required to mobilize internal and external resources are more precisely specified.

Since most planning agencies allocate a relatively larger share of their resources to such a medium-term plan than to the perspective or annual plans, the procedure considered essential for the formulation of a good medium-term comprehensive plan will be discussed briefly. This involves the use of two simultaneously executed approaches. One moves from the aggregate
economic variables down to the disaggregated level of individual projects and is referred to as "planning from the top down"; the other moves in the opposite direction and is referred to as "planning from the bottom up."

The former starts with clearly defined economic and social objectives of the government. An aggregate plan designed to attain these objectives is then formulated by the planning agency. Once this has been accomplished, the overall targets are disaggregated into interrelated sectoral programs and into regional plans; the latter, in turn, are subdivided into sectoral programs. Each sector program has identified with it its own aggregate growth, investment, input and output targets. The final stage of the "top down" process indicates the extent to which each sector requires additional capacity to achieve the plan targets and sometimes lists the projects for providing this capacity.

While the "top-down" procedure is being conducted, the "bottom-up" approach is simultaneously executed. This requires that each operating ministry and the central planning agency determine the extent to which new projects or investments will be undertaken and existing ones expanded by the public and private sectors. The sectoral subtotals are then added to produce an overall investment plan. Where necessary, the same procedure is used for regional plans which are then aggregated to obtain a value for investment for all the regions.

The sectoral and regional subtotals and the aggregates from the "bottom-up" procedure are unlikely to be the same as those obtained from the "top-down" one. They are, therefore, only considered to be "first approximations." The two sets of calculations are iterated until there is an integrated, internally consistent, comprehensive plan with sectoral divisions, identified projects and regional plans as components.
It may be argued, however, that the advent of sophisticated modeling techniques makes the above procedure obsolete. In other words, it is possible to have a series of "cascading" models with aggregate economy-wide planning models at the top of the hierarchy followed by sectoral and then sub-sectoral models; the latter can be used to identify the socially efficient projects. The final stage in this process would then be a detailed social cost benefit analysis or evaluation at the totally disaggregated level of individual projects. "Intra-model" consistency would be assured and it is "inter-model" consistency that would need to be ensured. Once this is done, one has an internally consistent "plan" from the aggregate to the disaggregate level. This would then make the "bottom-up" procedure described previously irrelevant. However, this form of multi-level planning is technologically very advanced and in the context of most developing countries, the "top-down/bottom-up" approach discussed above may, in fact, represent the "appropriate" technology.

National plans can also be distinguished between the imperative and the indicative type. In the mixed economies of the developed countries, a national plan is not imperative, but indicative. If a plan is imperative, as it is in centrally planned economies, the logic of planning is simple; once a plan is formulated by the planning agency, the implementation is a matter of enforcement. This is usually performed through a command system which is prescriptive, but occasionally also through selective intervention using the price system. If a plan is indicative, then the logic behind it is less self-evident. For now the plan is to be formulated with reference to the preferences of the society. In addition, it is to be implemented without prescriptive force.

1/ "Inter-model" consistency may require an iterative approach between each hierarchical stage.
In a free market economy, the function of resource allocation is performed by market forces. In a purely command economy, directives of a central planning agency perform (or attempt to perform) the same function. In most countries, the economic system is a combination of these pure types. The difficulty here is that there are no unique sets of rules that apply in controlling or coordinating resource allocation comparable to the rules for the pure extremes. Consequently it is difficult to deduce the proper role of the state. It is, therefore, not surprising to find countries that have moved from indicative to imperative planning or vice-versa because of dissatisfaction with one or another (e.g., Tanzania). Nor is it surprising to find indicative planning evolving into some prescriptive hybrid as appears to be the case in France [97].

In developed countries and in many developing countries (e.g., Malaysia, Tunisia, Tanzania before 1967 and Chile before 1973) the indicative type of planning is considered to be a logical consequence of mixed economies in which there are no intrinsic rules of game. Planning, therefore, has an important role to play in establishing an organizing rule. It is also an experimental, iterative process since it cannot be carried out on the basis of a priori rules. In addition, it attempts to organize the economic system by coordinating the three major groups: the consumers, the producers and the state. Therefore, even though indicative planning is not imperative or directive, the important concept of coordination is central to its function.
4.3 The Problems Associated with the Planning Process 1/

Most developing countries have viewed and continue to view planning as an evolutionary and experimental process. India is one example of a country where the commitment to planning has been extremely deep and pervasive. Despite years of unsatisfactory experience with detailed central planning, India has shown no indication or desire to move away from this type of planning. At the other extreme is Yugoslavia which has demonstrated an ability to change the process and system on the basis of experience. Between 1947 and 1975 Yugoslavia adopted four new constitutions (1946, 1953, 1963 and 1974), each preceding a new system of planning. By 1975, there had been five medium-term plans encompassing three broad planning philosophies, viz., central planning (1947-52), planning by global balances (1956-61) and "indicative" planning (1961-75). The new constitution of 1974 introduced another system of planning: self-management planning. Other countries fall in between these extremes: some countries such as Tanzania have changed their systems (at least in principle) from an essentially indicative approach to centralized one. Others are now inching away from the centralized approach.

The experience of many of these countries is not sufficiently satisfying to warrant a strong endorsement for central planning. It is this that has led to the vociferous arguments against planning economic development. These arguments are based not so much on the merits of the free enterprise system (except when ideology is the motivating force) but rather on the methods of plan preparation, implementation and enforcement. In this section, we briefly review the general problems faced by developing countries with the

1/ See Appendix A for a discussion of the planning experience of five countries: India, Egypt, Tanzania, Yugoslavia and the Ivory Coast. In this section, references to these countries will be based on the information in Appendix A unless otherwise noted.
planning process, i.e., with plan formulation and implementation. Section 4.4 presents the potential function of planning in developing countries and how the process, if properly implemented, can be a beneficial one to the country.

4.3.1 Problems of Plan Formulation

The planning process in the developing countries implicitly presumes the availability of the resources necessary for efficient formulation and implementation of the plans. As the experience indicates, this unfortunately is not valid in most cases; the dearth of skilled technicians and administrators in developing countries is well-known. Most countries, therefore, find it virtually impossible to allocate sufficient resources to formulate and implement all three stages of planning; viz. the perspective, medium-term and the annual plan. As in India, perspective plans in most countries tend to be rather rudimentary in nature and are often not published. Annual plans are the exception, not the rule. Where they exist, the linkage between the medium-term and the annual plan is very loose. In India, this has been true for all the Five-Year Plans undertaken. Tanzania is another example of the loose linkage. In the Ivory Coast, however, the linkage is much tighter between the medium-term Five-Year Plan and the Three-Year rolling program which contains annual details at the project level. There is, thus, a mechanism built into the planning process to keep track of the execution of the overall plan, of scheduling and co-ordinating the implementation of the projects and of transferring resources as bottlenecks become apparent or as the economic environment changes.

In most development countries such as India, Egypt and Tanzania, medium-term plans constitute the main focus of planning and are of the "top-down" nature only; the "bottom-up" procedure is rarely undertaken because the
project and sector information required for this approach is either unavailable or is too poorly prepared to be of any practical use. Therefore, in the end, most plans in developing countries are prepared almost exclusively by the "top-down" procedure because it can be done relatively easily in the central planning agency. Yugoslavia is a notable exception.

The technology and the techniques available for formulating plans are also an integral part of the process. In the more advanced developed countries, the advent of technological advance in high-speed computers and associated soft-ware has made possible the use of extremely large and sophisticated planning models. These techniques are available for all stages of planning and range from large-scale economy-wide models to sectoral programming ones down to techniques for the identification and evaluation of individual projects. The efficient utilization of such techniques requires high capital and skill intensity. Again, the high shadow price associated with skills and capital in most developing countries precludes the use of such sophisticated tools. Another limitation to the use of these tools is that institutional change cannot be easily captured by them; in many cases, such change is absolutely essential for the transformation of under-development.

Nevertheless, the planners tool-kit per se, can hardly be referred to as deficient. But due to the reasons mentioned above, most planning models actually used in medium-term planning in developing countries constitute so great an oversimplification of reality that they verge on being an inaccurate representation of the real world. For example, India which uses detailed centralized planning to effectuate development, has used "models with questionable connections to facts" [101, p. 171]. In addition, the planners "have
neglected until now, cost-benefit analysis in making investment decisions" [101, p. 171]. 1/ Nevertheless, as far as developing countries are concerned, India has a relatively large number of skilled economists, engineers and computer scientists. Yet, the latest plan uses an 89-sector input-output model only. This model is too aggregated for policy purposes. Further, it is expected that, for the first time, a linear programming exercise may be conducted for the terminal year of the Sixth Plan.

In addition, the statistical information required for even the simplest of such models is generally unreliable or unavailable. In many developing countries such as Egypt and Tanzania, the lack of timely data is well known. Egypt, for example, has a well developed statistical system which generates a considerable quantity of numbers. Most of these, however, are not very useful and are often not available at the appropriate time. In addition, the budget is exceedingly intricate and contains substantial double-counting; this adds further to the data problem and makes the budget a tool of only limited usefulness for analyses or for assessing the impact of economic policy.

Needless to say that, in general, the more sophisticated the model, the greater the data requirements. This makes it difficult to plan quantitatively and the dangers of compounding errors is great when inaccurate data are incorporated into a plan which, by its nature, is likely to be internally inconsistent. Consistency exercises may lead to the discovery of inconsistent data, but not necessarily to the ability to correct inconsistencies if the new data are unavailable. Such plans may, of course, be made internally consistent, but only at the cost of the accuracy of information. As in the case of India the planners "rely too much on bad data -- overemphasize the big aggregates

of heterogeneous items and neglect detailed and concrete analysis of social and economic microcosms" [101, p. 7].

Consequently, many plans in developing countries have been beset by poor economic and technical analysis and subsequent problems. For example, in India, in the Second Plan (1956-57-1960-61), the time-phasing of investments in the public sector was extremely poor. Little or no provision had been made for those projects that were to be started towards the end of the Second Plan and completed early in the Third Plan (1960-61/1965/66). Moreover, as the Second Plan unfolded, many inconsistencies developed. Cement capacity was installed considerably ahead of demand requirements, while steel and coal capacity lagged badly. Some of these difficulties were the result of problems that could not be foreseen. Much of the trouble, however, was attributed to bad detailed planning.

Further, in the Fourth Plan (1969/70-1973/74) 1/, the average annual growth in India in the industrial sector slipped to 3.9 percent from over 8 percent. A number of factors contributed to this decline. While there was significant under-utilization of capacity in a large number of industries due to the shortage of critical inputs such as steel, cement, non-ferrous metals and power, in many other industries operational problems created bottlenecks. In the agroindustries, output showed an erratic trend due to the fluctuations in the production and availability of related agricultural raw materials. In many industries output declined because of poor industrial relations. Above all, inadequate investment significantly affect new capacity expansion. Capacity in major industries during the Fourth Plan period grew at an average

1/ Due to the war with Pakistan and severe droughts, the Fourth Plan was postponed to 1969/70. The interim period, between the end of the Third Plan and the start of the Fourth, was covered by a series of annual plans.
3.8 percent per year. Thus, the growth in industrial production was low. Both in the public as well as the private and cooperative sectors, there were substantial shortfalls in planned investments. This coincided with a period of accelerating inflation; the result was the gap in real terms between planned and actual investment was very wide (see Table A.3 in Appendix A).

In Egypt we have another example where a major problem has been the over-extension of investment funds, i.e., the government has consistently spread its investment resources too thinly over a large number of projects. The "priority" projects have generally exceeded the available resources. Rather than allocating funds on rational economic criteria and selecting the socially most profitable projects, given the resource constraint, the government has instead initiated a large number of projects and then allocated insufficient funds to achieve their completion. This problem has then compounded itself because the "ongoing" projects have acquired a prior claim on resources in subsequent investment allocations. The result is that Egypt has accumulated an extremely large number of incomplete and poorly designed projects. In addition, the priority setting and coordination is rendered ineffective by the practice of some enterprises which obtain (informally) a commitment from external sources of a part of the project funding; pressure is then put on the Planning and Finance Ministries to supply the remainder. They often comply and this accentuates the problem of the misallocation of investment funds.

In Tanzania, the story is very similar. The Five-Year Plan Plans have been vague and unrealistic and have included a long list of projects which were not based on economic criteria and, therefore, the list was not indicative of priorities. As a result, the plans were characterized by overcommitments as the total number of projects exceeded the amount
that could be implemented. In addition, the planning system had no effective mechanism for formulation or enforcement. Since no careful cost-benefit analysis was conducted on the projects incorporated into the plans, the planning exercise turned into an annual budgetary exercise similar to the traditional ministerial budgetary allocations which had no relation to development plans.

The system of planning and investment decision making in Tanzania, therefore, been described as one of unplanned socialism. The choice of projects and issues relating to scale, timing and techniques of production is more the outcome of a bureaucratic process than of rational economic criteria. Since profit maximization is not the official motivating force, factor and product prices have little relationship to investment decisions. Project selection and choice of technique are determined by such factors as the source of finance. As a result, there is little relation between the outcome of the plan and the proclaimed objectives of industrial development.

An additional dimension of the planning problem is that, while a careful planner may be aware of the limitations of the data, the political leaders and decision makers may not be aware of the total extent of the data problem in the plans they adopt. This situation is exacerbated when, as in Egypt, additional problems arise from the frequent changes in high-level personnel in the major economic ministries.  

1/ This creates a period of discontinuity during which the new members have had to adjust to the new environment and grasp the dimensions of the problems confronting them. Changes at the lower administrative level have also taken place in Egypt due to the

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1/ Since 1975, there have been five Ministers of Planning, five Finance Ministers, and three Ministers of Economy in Egypt.
relatively low salaries paid to the civil servants. This has led to a loss of the more able civil servants and high-level technicians to the private sector and to other neighboring countries. In addition, the lack of interaction between ministries, particularly when policies are being discussed, has not helped either. In Egypt, this has manifested itself in the annual plans which have been seriously deficient in the discussions of the implications of various economic policies. However, most policy makers in all countries are in the position of making decisions under conditions of uncertainty and incomplete information. The position of political leaders in developing countries, therefore, is not unique. It is only that much greater caution in decision-making is required on their part.

Given these limitations, it is not surprising that in many of the low-income developing countries such as Tanzania and the Sudan, the budgetary authority tends to be the ultimate decision-maker with respect to the acceptance of projects. This authority often tends to ignore the central planning agency and the national plan. As a result, the government budget in many countries comes closer in reality to being a public investment plan than does the national plan. However, budgets in most such countries are rather incomplete statements of public investments; they also tend to be poorly organized and administered and use static techniques that are designed to achieve limited goals. They, therefore, tend to be unsuited to the needs of development which is essentially a dynamic process. In addition, the poor quality of the technical staff in the ministries and department leads to unreliable estimates of costs and benefits of alternate projects. Therefore, as discussed in the case of Egypt and Tanzania, the allocation mechanism of the budgetary authority tends to be "across the board cuts" in requests for investment funds, regardless of the merits of the projects.
Most developing countries have also not made effective use of the private sector in the process of plan formulation. This, however, is changing. In India, for example, the role of the private sector in planning is somewhat ambiguous. Although in theory, during the study and analysis stage, the Planning Commission sets up working groups which include representatives from the private sector, in practice this has been the exception rather than the rule. For the first three plans these working groups were composed only of government officials. However, for the Fourth Five-Year Plan the working groups included representatives from private industry and labor as well as professional consultants. Through time, some improvement has been made as it has been recognized that it is useful to draw upon the knowledge and data available in the private sector for plan preparation.

4.3.2 Problems of Plan Implementation

Implicit in the process of planning is the assumption that the present is completely known, that the future is knowable and that events can be sufficiently controlled to achieve the knowable future. Even if one takes the first two assumptions as valid, the third one, that of controlling events or the implementation of plans, has not held up in practice for a variety of reasons. Some of these reasons are related to the presumption that the desired change will take place in a generally stable environment. However, unforeseen and sudden change and political instability is not unusual in developing countries. 1/ In many instances, the new governments rarely continue with their predecessor's medium- or long-term plans. Countries with

1/ From 1962 to 1972, there have been 63 coups d'etat in developing countries [41].
considerable planning experience have had to abandon their medium-term plans due to various forms of unforeseen circumstances. Due to wars and droughts, India had to postpone its Fourth Five-Year Plan from 1965 to 1969 and to resort to annual plans in that period. The oil crisis of 1973 and the change in government in 1977 converted the Fifth Plan into a series of four annual plans. Wars and balance of payments problems disrupted attempts at medium-term planning in Egypt after 1965. In Yugoslavia, the rift with the Soviet Union led to the abandonment of central planning in 1951, and until 1956 the economy was managed by a system of annual plans [52]. Japan discarded its Ten-Year Plan for 1961-1970 and then the Five-Year Plan (1964-1968) which replaced it because of the unanticipated expansion of its economy [52]. The Five-Year Plan (1966-1970) of the USSR was never formally enacted even though the directives for it were approved in 1966. Instead, one-year target figures were announced in December of each year. The reasons for this were never announced, but it is speculated that a new system of plan implementation led to uncertainties which could not be contained within the Five-Year Plan [2]. Finally, in France the civil disturbances of May 1968 led to the abandonment of the Five-Year Plan (1966-1970); the subsequent increase in salaries and wages compromised plan targets to such an extent that a revision of the plan was considered impractical [97].

Economic uncertainty has also played a major part in inhibiting the successful implementation of a plan. Where inflation or balance of payments stabilization has been the cause for concern, the political leaders of many of these countries have often given short-run problems priority over longer-term development programs. Such short-run problems have, therefore, prevented the adherence to planned investment targets. For example, in India
in the Second Plan (1956-57-1960/61), due to the emphasis on heavy industry, there was a substantial increase in foreign exchange requirements. But there was a shortage; the foreign exchange requirements had been grossly underestimated, and the plan promptly ran into trouble. The underestimation resulted from poor planning. The planners had allocated investments in a single five-year lump; the whole five-year allocation of foreign exchange for private investment was made available at once. Private investors, however, used up the majority of this allocation in the first two years of the plan period. This resulted in the foreign exchange crisis of 1957 and 1958 and the subsequent foreign exchange constraint that continued to impede not only further expansion, but also current production in many industries during the remainder of the plan period. There were similar problems in the Third Plan (1960/61-1965/66) in which the expansion of capital goods and machine-building industry on a large scale was considered to be essential. The plan, however, encountered difficulties from the very start with foreign exchange shortages and the rapid increase of foreign debt. The results achieved were disappointing. The target rate of growth over the plan period was 5.4 percent per annum. The achieved rate was 2.5 percent; this was lower than that achieved in either of the previous two plans and less than half the target rate.

Similarly, in nearly two decades, Egypt has had only one medium-term plan (from 1960 to 1965) that was seriously pursued. Subsequent attempts were disrupted by wars and balance of payments difficulties. As a result, serious attention has not been paid to medium-term planning for several years, and the government has been primarily concerned with short-term economic management.
Apart from the economic and political uncertainties which impede the successful implementation of plans, the priorities determined by the planners and the instruments needed to enforce these priorities constitute a significant cost to the economy. This is because, in the formulation stage, the planned priorities are often not based on sound economic criteria. The role of the officials in charge of the enforcement of the plan is to ensure that the sum of the individual projects fulfill the plan targets and to create the conditions that lead to the planned pattern of investment. These conditions are created through various policy instruments such as licenses, tariffs, preferential credit terms, capital import arrangements, and tax abatements. Projects that are high plan priorities receive proportionally greater inducements.

Unfortunately, the system of plan priorities tends to nurture inefficient projects which have been incorporated into the plan in the first place because of inadequate plan preparation and formulation. In many instances, subsidies and concessions are afforded to those enterprises that are in difficulty so that the high priority targets may be attained. This tendency is even greater where government projects are involved. As discussed before, non-economic objectives play an important role in government projects; thus, losses, if they occur, can be easily hidden and mistakes tend to be perpetuated through state subsidies. In addition, such projects suffer from managerial and operational handicaps, so that even if they are well-conceived, they suffer from financial (and even social) losses 1/.

The fostering of inefficient industrial enterprises based on badly planned projects and targets is not unusual. Countries such as India, Turkey

1/ See Section II for details.
and Egypt have placed great emphasis on encouraging, through various protective devices, planned industrial projects that have subsequently been found to be economically wasteful. For example, Indian planners "have pursued an import substitution policy at the end of which foreign exchange earnings scarcely covered the current demand for raw materials and capital replacements," [101, p. 75]. A study of Turkish industrialization shows that "twice as much output, in value terms, could be obtained from a liberalized trade regime at an equilibrium exchange rate" than was obtained from a similar amount of investment under the regime of trade licenses and restrictions [68]. Studies on Pakistan paint a similarly gloomy picture where 18 out of the 32 industrial sectors could not be considered to be economically viable even after account had been taken of the costs of learning-by-doing [76]. Similarly, in some other countries, the costs of protectionist policies, expressed as a percentage of GNP, has been estimated to be 7.1 percent in Brazil [11], 6.2 percent in Chile [6] and 11.0 percent in Colombia [30].

As discussed before, a major reason for the poor performance of planning in India is the lack of any economic attention paid to determining the plan targets. Associated with this is the issue of the instruments used to enforce these plans and the inefficiencies caused by the industrial policies. In particular, the complex system of licensing and bureaucratic controls as applied in India have not on the whole been conducive to promoting industrial efficiency. The consequences of highly protectionist trade policies have also been quite detrimental "to the growth of the economy by adversely influencing

1/ Except for the last study which used a general equilibrium model, the other studies used a partial equilibrium approach. In addition, all studies are static rather than dynamic in nature. For a more complete discussion of the costs of protection, see Balassa et al. [5, Chapter 3].
export performance, by wasteful inter-industrial and inter-firm allocation of resources, by permitting and encouraging expansion of excess capacity and by blunting competition and hence the incentives for cost-consciousness and quality-improvement" [16]. In addition, the planned industrialization led to imbalances between the structure of industrial capacity created and the structure of demand. These imbalances were severe in the absence of a growing export market.

The inefficiencies in such a badly planned system are further compounded as costs in the downstream projects also begin to rise. The "exhaustion" of domestic demand and the international non-competitiveness of these domestic products limit new capacity expansion. Thus, any new industries relying on inefficient plan-fostered projects also find themselves precluded from foreign markets; industrial growth, therefore, begins to slow down. This sequence of events is not unique; it is one that has been experienced by many developing countries such as India [15] and Argentina [14]. Those countries that have not undergone the Indian experience have merely been fortunate in delaying the "day of reckoning". Once domestic demand is "exhausted", precisely the policies that have encouraged a planned but inefficient domestic production structure, will preclude the entry of these industrial products into the international market. Thus, opportunities to take advantage of a potentially very large (foreign) market will have long been foreclosed to these industries.

Income distributional considerations have made the spatial aspects of industrialization a major concern in most developing countries; the objective being to avoid over-congestion of some regions and the neglect of others. An unplanned approach has often led to spatial maldistribution of industries,
often unwittingly fostered by public authorities. Industrial activities naturally tend to gravitate to major urban centers where skilled labor, social overhead capital, attractive living conditions and access to markets are available. However, a planned approach (regional planning) has not always solved the problem, particularly if plan formulation to begin with is weak. It often happens that, while industrial concentration is considered to be undesirable, no viable alternative sites are made available. Decentralization by fiat is then the usual recourse. This involves a variety of measures such as prohibition of new industries in certain areas, the use of location-specific licenses, or the siting of government-financed ventures. All of these impose hidden and substantial costs to the economy; in many cases these measures are also ineffective. For instance in India it was found that, in the absence of genuine regional planning, "licensing as it has operated during the last ten years has not been very effective except in a very limited way for the attainment of the objective of regional dispersal" [103, p. 114]. The same is true of many other developing countries 1/. Thus, the combination of poor plan formulation and undesirable or ineffective instruments of plan implementation have led to several undesirable and unintended consequences.

As mentioned earlier, an industrial plan that takes into consideration the location of industries based not just on the costs and benefits to the industrial sector alone, but to the economy as a whole, is required to identify the "optimal" location. The enforcement or implementation of such

1/ See Section III.
planned regional growth may then be effected by providing the required infra-
structure and suitable fiscal incentives; this obviates the need for admin-
istrative fiat and location-specific licenses since it induces industrial
investment to locate in the most advantageous regions.

Assuming that the plan has been correctly formulated and that the
objectives of the state (as identified in the plan) are socially desirable,
then the method of plan enforcement becomes of crucial importance. The use
of improper tools and instruments could lead to significant and undesirable
deviations from the plan. The experience of Pakistan demonstrates how govern-
ment intervention through the use of proper instruments can affect the direc-
tion of investment. In Pakistan, one state objective towards industry was
to shift private investment funds from commercial activities to industrial
ones. Initially, the investment funds moved primarily to the textile sec-
tor; subsequently, further shifts occurred to the more technologically com-
plex industries such as the chemical industry. This was largely the effect
of incentives provided within a planning framework [75, 87]. The incentives
were necessary to encourage entrepreneurs to overcome external obstacles and
their own initial reluctance to make major shifts. These incentives were
provided by virtually assuring high profits to the entrepreneurs. Once the
initial barriers had been overcome, investment funds continued to flow into
the technologically advanced industries.

The planned growth of industries, encouraged and nurtured by del-
iberate state policies of enforcing the plan, when badly done, however, tends
to be self-defeating. The social opportunity cost is then extremely high and
the growth of inefficient industries occurs at the expense of other potentially
efficient enterprises; the latter are deprived of the factors of production
which could be put to more productive use. Costs are also borne by the consumers who pay higher prices for what are essentially non-competitive and thus poor quality products.

4.3.3 The Plan and the Market

In principle, a plan is the mechanism by which official institutions are directed to bring about specific changes in the industrial structure over a designated time period; these, in the opinion of the state, would not have occurred otherwise. A plan is, therefore, used as a tool to allocate resources efficiently. An "ideal" planning system would, therefore, be one in which there is an efficient and frictionless state machine, no uncertainty, no bureaucracy and zero information costs. Similarly, if the market mechanism were perfect, there would be no divergence between the plan "solution" and that arrived at by the market mechanism 1/. Thus, a perfectly planned allocation of resources would be no different from a perfectly operating market system. The arguments in favor of planning are based, however, on the assumption that the process of plan preparation and implementation is superior to that of the market mechanism; i.e., that the market is a more imperfect means of resource allocation than the plan. The latter, however, is "essentially a set of guesses about the future, since the assignment of priorities requires uncertain estimates of likely results, benefits and costs" [77, p. 25]. The issue, therefore, is whether the planner's estimates and his ability to enforce the planned allocation are superior to those of the market. A related and more important issue is whether the planning function, as currently undertaken by developing countries, achieves its goals in the sense that it eliminates the errors inherent in and also allocates resources more efficiently than the market mechanism.

1/ The dual prices of a linear programming model allocates resources in exactly the same way as would a perfectly competitive market mechanism.
The evidence, however, indicates that there are significant costs associated with the planning mechanism. In the developing countries, this is primarily due to the scarcity of administrative resources, the paucity of information and the high level of uncertainty associated with the available information. These problems, which are inherent in most planning processes, are most acutely felt in countries such as India and Egypt that have instituted total planning and have left little room for market forces to play their part.

Arguments in favor of detailed planning have always tended to ignore the limitations and the costs imposed by ignorance, uncertainty and unanticipated changes. In principle, control of every facet of economic life assures balanced growth. In practice, however, the state must be satisfied with second-best solutions that are based on the available information, and with a system that is sufficiently flexible to make rapid adjustments to unforeseen circumstances. Liberman, who initiated the reforms in the USSR, noted that "the substitution of voluntarism and naked administrative fiat for economic stimuli produced distressing disproportions, a lower efficiency in utilizing our fixed assets, deterioration of the quality of goods and, as a result, insufficient growth of the working people's property" [78, p.53]. Because of such problems, total planning has been almost completely abandoned in the centrally planned economies of Eastern Europe [114].

In developing countries where the central planning approach is followed and where the planners have attempted to make radical structural changes, the costs are higher and the economic consequences are much more serious. As the example of India shows, the strategy of heavy industrialization in the Second and Third Plans led to a premature expansion of equipment to produce capital goods and to extremely large economic losses. The problem
arose due to the improper treatment of sequential inter-industry flows and the sub-optimal timing of investments. Briefly, the problem may be stated as follows: to produce consumer goods, machines are required; to produce machines, equipment to produce capital goods are required; these in turn, require steel. In the heavy industrialization strategy, it was assumed that the optimal sequence of investment and plant construction would, therefore, be (i) steel, (ii) equipment to produce capital, (iii) machines, (iv) consumer goods. This, of course, is not necessarily true. The result of such a planned, sub-optimal sequence was that the consumer goods sector depended heavily on imported machinery, the export-oriented industries stagnated and the heavy equipment sector had no markets. 1/  

It is not only in centrally planned economies that planning has failed to allocate resources optimally. As the examples of the previous section show, even the expectations of the planners of non-centrally planned economies have not been met. The changing and evolving methods of planning systems in Yugoslavia and Tanzania (pre 1967) bear witness to that. Even in France, a developed country whose highly touted indicative planning system has been used as a model by many developing countries (Morocco, Tunisia, Chile (pre 1973) among others), the planners have frequently turned out to be wrong; "the (planning) Commissariat has from time to time believed that there was too much production in automobiles, detergent, electricity and similar industries -- and has often been demonstrated wrong in these fears" [65, p. 82]. In other instances, the Commissariat has advocated an unwarranted overexpansion [65, 106].

1/ In six years of operation, Heavy Electricals Ltd. of Bhopal made an accumulated loss of Rs 330 million on an initial investment of Rs 62 million [91].
It is also assumed that the performance of plans may be judged by whether the planned industrial growth targets have been fulfilled. As the preceding section showed, the deviations between planned targets and actual achievements are often used as a measure of performance. Such fulfillment is also considered to be superior to the value-added test of the market. This can be misleading. The attainment of plan targets can indicate that either the planners are good forecasters or that they are effective in enforcing the plan regardless of the instruments used or of the associated costs. If the plan that is enforced is a "bad" plan, then there is no guarantee that the country would not have been better off if there had been deviations from the plan. Also, the over-fulfillment of the plan may indicate that the plan was too modest, and under-fulfillment may mean that the plan was too ambitious. Thus, the outcome may be interpreted in any light one chooses. Fulfillment of plan targets is, therefore, not a meaningful measure of performance because there is no basis with which to compare the current plan targets except with other plan targets in the past (as is often done) or with the targets in other countries.

Hanson is rather scathing about the way Indian planners have gone about setting targets. He says that "one is never surprised when some little back-room planning bureau in a Ruritanian-style country comes up with a comically inflated projection of growth. But one is surprised when planners as knowledgeable, experienced, sophisticated and prestigious as the Indians do the same -- particularly when the failures of their past exercises in this genre are available for contemplation. Yet, the practice of setting "minimm" objectives, realizable if at all, only on the supposition that the most favorable possible combination of circumstances actually materialized, is evident..." [101, p. 40]. It should be mentioned that this approach to target-setting is not unique to India but is common to most developing
countries. Even assuming that plans are fulfilled and plan targets are "correctly" determined by the use of extremely sophisticated techniques, the question still remains of plan enforcement; could these targets have been attained by more cost-effective, socially efficient instruments instead of the methods of direct intervention that are commonly used in planned economies?

In many developing countries, the difficulties associated with detailed planned sectoral allocation of resources can be traced to two major reasons. The first is the paucity of information on which the planning decisions are based. The experience of the countries cited in the previous section indicates that information in developing countries is a scarce commodity and, as such, has associated with it a high opportunity cost. Clearly this cost varies from one country to another. The cost is extremely high in countries that have not undertaken the fixed costs to establish a "statistical" or data base agency. Where such fixed costs have been incurred, the marginal cost associated with assimilating quality information on a periodic basis, storing it and disseminating it tend to be quite significant. 1/ Few countries, developed or developing, can afford to undertake the high costs associated with efficient and periodic information retrieval and transmission. For the developing countries, most of whom do not have the necessary informational infrastructure, total (central) planning becomes an extremely expensive exercise.

An extreme point of view held by some is that the market mechanism "generates, apparently at zero cost, dual prices ... i.e., a basic information

1/ In many of the really poor countries, calculations of GNP are largely exercises in statistical imagination.
that is nearly always needed and is very often sufficient" for national decision making [13]. The information generated by the market, nevertheless, provides scarcity indicators. If these indicators are ignored, alternate indicators and signals must be developed and transmitted. Since the efficient allocation of resources is not a static problem, but a dynamic one, such signals must be continuously developed. This is a costly and difficult task, which, under the best of circumstances, is very imperfectly accomplished by planners. Thus, these high costs associated with the planning exercise result in the planners disregarding or being unable to take into consideration the relevant detailed micro information on the basis of which actual production and consumption decisions are made. The cost of obtaining such information and the associated computational difficulties reduce efficiency calculations to more or less informed guesses. It is also the unavailability of such detailed information that results in the waste of resource use in most planned economies.

The second factor is the lack of an automatic error-correcting mechanism in detailed central planning systems; it is however, an essential characteristic of the market mechanism with all its real and imagined faults. Assuming that the planning process enables the planners to make fewer mistakes than the entrepreneurs in a market system, in the long run, ceteris paribus, the planned allocation of resources would be much worse than the market performance simply because the market would eliminate the errors that have been made, while planning (and the means of plan enforcement) cumulates these

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1/ The author talks of atomistically competitive markets; such frictionless markets, of course, do not exist except in theory. Therefore, in countries where the information is generated by the market mechanism, the activity is not costless.
errors. The experience of public enterprises and the use of direct industrial controls discussed before are examples of such phenomena. It is the presence of these costs that has led many developing countries to recognize that planning cannot usurp all the functions of the market, and that there is a need to intervene selectively and to permit market forces to play a larger role in the allocation of resources.

4.4 The Potential Function of Planning

The criticisms of the traditional methods of plan enforcement does not negate the need for formulating industrial development plans. It merely points out that the market mechanism may be more effective in enforcing some aspects of the plan through directives that work in conjunction with market forces, rather than the heavy visible hand of the planners. In this section we discuss how the planning process may be beneficial to developing countries.

Given the scarce resources at hand, the primary function of the planners is to concentrate on those areas that the market is least able to take care of. The goals of the plan should, therefore, be on establishing national priorities based on the principle of comparative advantage, setting the "rules of the game" and determining the nature and volume of public goods and services. These functions are of utmost importance to social development. Unfortunately, in many countries resources are diverted away from these functions by planning offices that are overly concerned with detailed and direct investment allocation.

Experience has shown that the two extremes -- "pure" market and "pure" planning -- do not work as well in practice as they do in theory. Neither the market nor planning is by itself an effective mechanism of resource allocation. Therefore, the important question facing planners is to
what extent can the market be used as a guide and an informational device and how much can it be modified and adjusted to meet certain social objectives without creating too many distortions? The issue, therefore, has become not whether to plan or not to plan, but rather how and what to plan. In other words, the major problems facing planners are the extent of state intervention, the consequences of various government policies and the degree to which these policies can be enforced. Since any policy has associated with it various costs and benefits, the incidence of each policy must be carefully considered. Both the state and the private sector are constrained by scarce resources. Priorities, therefore, need to be determined by both sectors.

The criticism and disenchantment of planning in developing countries results largely from the failures of detailed administrative allocation of resources and from the crippling of the market mechanism. The formulation and implementation of plans is inherently a difficult task. In many developing countries, the system has failed to coordinate the planners' superior information on demand forecasts and overall capacity requirements with the superior knowledge of the private entrepreneur regarding the local conditions, human resources and technology. The two groups are often isolated with no mechanism to facilitate the flow of information. Brazil, Korea and Mexico, however, have made considerable effort in bringing together industrialists and state and development bank officials to secure the cooperation and the exchange of information to assure the selection of the most economic investment projects. Yugoslavia and Malaysia have also made great strides in this direction. As in these countries, planning should be treated as a rational application of policy instruments, of generating the necessary information that is not provided by the market and, where necessary, of modifying the
market signals. In contrast to the administrative meddling and the detailed preparation of investment schedules based on incomplete information as in India and Egypt, such planning is not inconsistent with growth, and in the long run it may be a positive aid in avoiding the costly mistakes made by the now more developed countries in their past.

Countries that have attempted detailed centralized planning have explicitly assumed that, to maximize economic growth, the government should create major structural readjustments using direct and specific controls to achieve the plan targets or objectives. Those advocating such a role are impatient with the workings of the market. Yet, allegations of inadequacy are meaningless without fully specifying an alternate system. Planning and controls do not automatically ensure compliance. It is, therefore, not surprising that such planning systems have been found to be deficient and to have faced many difficulties; decisions have to be made under conditions of uncertainty and with poor quality information; the planners have not been able to accurately forecast consumers' demands, technological change, or reactions of individuals to various policy changes. In addition, the information channels that have been established have become rigid because of the costs associated in setting them up. Once a channel has been established, those using it tend to perpetuate it or to apply it to other fields, even though the system may have in fact ceased to be useful because of changed circumstances. There are many other examples of government myopia. Therefore, it is not enough to argue that the market cannot achieve a particular goal, it has to be shown that there exists an alternative way to achieve this objective at a lesser cost. Detailed centralized planning is not necessarily the answer.
In addition, the reaction of many developing countries to their colonial heritage has led to a plethora of state regulations to enforce the plans and these have choked and restricted individual initiative. This state of affairs has resulted from the unfortunate view that the relation between the state and the private sector is a zero-sum game. The interdependence between the two has not received sufficient recognition and, thus, the construction of an efficient and refined communications network between these two groups is lacking in many countries. This emphasizes the need for consultative and indicative planning that incorporates the concerns and objectives of the state as well as that of the private entrepreneur.

The significance of the evolutionary nature of planning discussed before is that there is an increasing opportunity for the private sector to contribute its judgements, knowledge and experience to the earliest phases of plan-making. This, in turn, permits the private sector to undergo change and development. Even countries, such as India, which have adopted a doctrinaire view of planning, have begun to modify their views to permit an earlier and more significant contribution from the private sector. Therefore, in countries where the private sector is not included in the planning process, it does not necessarily mean that it will not play a more significant role in the future. Nevertheless, it would appear that most developing countries need to work at developing and experimenting with instruments of private sector participation; in other words, on how and when the private sector should be brought into the planning process.

The interdependence of investments in the industrial sector necessitates a coordination role for the state. Investment decisions cannot be based in isolation and on present prices alone. Future prices are also
required. They depend upon forecasts of supply and demand, which in turn depend upon other projected investment projects. There is, therefore, a role for the state to play in the proper formulation and coordination of sectoral investment programs which take into account not only prices, but also public and private investment plans in the other interdependent sectors. Thus, a coordinating mechanism is essential. The state can keep the private sector informed of its own investment programs and policies and of the impact on economic growth of alternate investment strategies. Such a consultative approach to planning may be made effective through the use of incentive mechanisms as opposed to direct administrative controls. Therefore, the direct vetting of individual projects is neither necessary nor sufficient to affect the private pattern of investment. The plan can, thus, be an aid to private investors in properly assessing business opportunities by providing the type of information mentioned above and making a correct assessment of the functional relation between the application of policy instruments and the investor's responses.

The logic of planning under such a policy approach is indicated by Chenery [22] and Tinbergen [105]. Emphasis is placed on the role of planning in putting together various policies of the government departments, which are often inconsistent, into a coherent framework and in coordinating these various policies. The planning approach would, therefore, be to coordinate the various activities of the government and then to achieve the objectives by pulling the relevant levers of the policy variables. There would, however, be two problems. First, government policy often does not always follow closely its coordinating pattern. Second, the actual economic activity may not fit the forecast of the plan. Policy making could be more effective if planning were to be an annual activity. In the case of medium or
long-term plans, there are likely to be deviations from the plans in the interim period. The approach would then be to correct the plan annually (by "rolling") or to gear the short-term policy to the long-term planned path by an institutional device such as a system of signals to redirect the actual path to the planned path. 1/

Since the future is unknown, a system that is flexible and allows more change as more information becomes available is obviously to be preferred to an inflexible one. This, therefore, constitutes the primary reason for iterative planning or "rolling plans" that incorporate additional information on an annual basis. This concept of the rolling plan has been instituted by many developing countries such as the Ivory Coast and India (starting with the Sixth Plan (1980/81-1985/86)). There are, however, other countries such as Egypt that do not use this concept. Despite the difficulties faced by Egyptian planners with regard to data and information and the desired liberalization of the economy, the new medium-term plan (1978-82) is still of a fixed and rigid nature.

The existence of uncertainty is also the reason for using market forces as a guide so that additional information may be incorporated and transmitted, not only on an annual basis, but more or less continuously. The judicious use of such forces provides at least a partial alternative to

1/ The theory of planning under conditions of uncertainty is still in its infancy. Radnor [89] has summarized the available literature which deals with the characterization of optimal paths, optimal decision rules and procedures for calculating optimal allocations. He concludes that optimal planning under uncertainty requires "rolling" or "sliding" plans; this involves updating plans as new information becomes available. He proposes that, as a first approximation, planners use the "certainty-equivalent" approach where decisions for each new period are based on the expected values of the random variables.
total centralized planning. Therefore, the greatest potential benefit of planning lies not so much in the selection of particular alternatives, but in generating such alternatives, in identifying problems and key factors that should be considered and in assessing the sensitivity of certain variables to potential changes in other variables whose values are not known with any degree of certainty. These are functions that the market system in most developing countries is ill-suited to perform.

The French type of indicative planning is considered to be the "cooperative approach" based on the consultation and bargaining between various interest groups and government about their future behavior. The plan is worked out through the coordination of conflicts among various groups.

Many developing countries such as Yugoslavia, Tunisia, Ivory Coast, Morocco and Malaysia have planning systems based on this principle; this experience is of some relevance to other developing countries. Therefore, the coordination and rationalization of government policies may well constitute the most important function of planning.

In addition, the need to provide adequate financing of investment projects over a multi-year time frame requires the integration of the budgetary and the planning processes. Thus, multi-annual budgets, which form the basis for annual budgets and which would make the plans operational, must be prepared. The fact that conditions change and new information relevant to projects and plans becomes available periodically necessitates the preparation of a multi-annual budget on a rolling basis similar to the concept of the rolling plans discussed above. Thus, the rolling multi-annual budget must be linked to the rolling plans to ensure that the investment plans remain realistic and do not lose their operational relevance. 1/

1/ For details see Balassa [7, Chapter 2 Annex].
Laissez-faire economies do not exist anywhere; state intervention to varying degrees is always present. However, in many developing countries, policies are pursued by several different authorities, most of which are designed on an ad hoc basis without adequate consideration given to priorities, conflicts and economic cost implications. Planning, as a framework for organizing information, encourages authorities to think in terms of opportunity costs, to explore the impact of alternative policies, to raise issues of the efficiency of the use of policy instruments, and to determine the costs and benefits of alternative targets or objectives. In the process, the preference function of the policy makers is likely to become more defined as the trade-offs between available alternatives are revealed 1/. The communications between policy makers, technicians, private entrepreneurs and other interested parties with divergent opinions concerning a desirable development path, and the resulting iterative use of the planning process, may be of greater importance than the plan itself 2/. This iterative and consultative procedure identifies the information and the nature of political (and other) constraints which must be taken into account.

The belief that either total planning or the unfettered market system can provide the answer to rapid industrialization is now on the wane. Both extremes constitute a high-cost approach to industrialization and economic development. Yet, even in the developed countries, the public's expectation of the state has increased significantly. This has resulted in an increase in the size and responsibility of the public sector and has coined

1/ It is a myth that the preference function of policy makers is uniquely defined and known a priori.

2/ For a detailed discussion on how formal planning models may be used to achieve the above, see Choksi and Meeraus [26].
the term "the crisis of expectations" in some quarters. The state is, therefore, faced with the problems of achieving the impossible and preventing the inevitable. Yet, the finite limits to the government's ability and of the resources available preclude it from detailed administrative planning and from solving all problems. The greater the recognition of the finite ability of the state and that some problems cannot be solved immediately, the higher the probability that the state will be able to make a more significant contribution to industrial and economic growth.
V. CONCLUSIONS

State intervention in the industrial activity of developing countries has grown quite substantially. The pervasive presumption has been that the state can and should cure all economic and social ills, and that the problems will disappear once their solutions are entrusted to the state. In many countries, governments are almost assumed to be able to solve any problem simply by enacting a law, passing a regulation or announcing a policy.

Experience in the developing world has now shown that some problems cannot be solved, at least in the short run, while others simply continue to exist and do not disappear as a result of transferring responsibility from the private to the public sector. In fact, in many cases, this transfer process aggravates the situation and sometimes creates even more problems. It does not necessarily ensure that the allocation of resources will be either socially optimal or more efficient or even more equitable.

The major question facing any state is not whether to intervene or not, but to what extent and how. For example, under what conditions are state owned, controlled and managed enterprises preferable to private ones? What is the minimum number of licenses needed? What should be the extent and detail of planning? To some extent the answers will be determined by historical and cultural forces. In addition, since economists cannot compare policies in a controlled laboratory environment as in the natural sciences, categorical answers that one policy is superior to another are not always possible. Nevertheless, the experience indicates that some generalizations can still be made.
The accumulated evidence so far does not demonstrate that detailed central planning and direct controls stimulate economic growth. In fact, the contrary is true. The consistent ignoring of cost-benefit considerations and detailed negligent planning combined with the regulation of inefficiently determined targets negate the very concept of rational planning. Further, the administrative controls significantly contribute to an uncertain economic environment which suppresses investment activity. Decisions by the state are always made under conditions of uncertainty. Therefore, policies that permit responses to changing economic environment and exhibit flexibility are preferable to inflexible, rigid ones. Consequently, decentralization of the planning system and the use of incentives rather than imperatives are more likely to stimulate industrial activity and economic growth, than rigid centralized decision-making. Similarly, in the case of state-owned enterprises, decentralization of authority and decision-making are more likely to enhance the performance of these enterprises as opposed to rigid, inflexible administrative structures. It is the aspect of uncertainty and the need for rapid responses that make the case for decentralization and for the use of market signals.

The issue for developing countries is not whether the private or the public sector should be the vehicle for industrial growth. In many countries, there is a state of mutual interdependence and co-existence between these two sectors. In developing countries, where resources are scarce, such sharp dichotomies and the resulting policies have led to a waste of these resources. It is clearly in the interest of the nation to harness the key elements of the private sector and to create an environment that is conducive to the co-operation between the two sectors. Thus, the state should
devise policies in such a way that the private sector is able to identify its own interests with those of the state. Since the private sector responds to a set of market signals, the state, through the use of appropriate policies, can modify these signals. If the resulting signals are correct, then the private sector can be used to serve the social objectives of the state.

Wholesale intervention in the production process and the demarcation of sectors for public and private industry do not provide the appropriate signals. It is only in countries in which indigenous entrepreneurial activity is in its infancy, that the state may have no option than to be heavily involved in the production process. With respect to services, however, there are valid arguments that, in the early years of industrialization, the state should be involved in the provision of services and in the development of an industrial infrastructure. Due to the lack of management experience, technical skills and knowledge, the private sector is unlikely to undertake the risk and thus to benefit from training schemes that it may initiate. The state can, therefore, be an important vehicle for the training of indigenous managers, administrators and entrepreneurs.

Thus, in areas where the imperfect operation of the market is due to ignorance or high risk, and the signals cannot be modified sufficiently through the use of tax/subsidy based incentives, the state has a strong role to play in disseminating information, knowledge and other services that would eventually contribute to the development and strengthening of market forces. The ultimate intention, however, being not a policy of laissez-faire, but a recognition of the fact that the market is an administrative instrument, that it is relatively cheap to operate and may, therefore, be a more efficient tool despite some of its objectionable characteristics.
As in any policy analysis, account must be taken of the costs and benefits of the policy or the instrument that is to be used. The natural propensity of the state to regulate is an extremely high cost approach to industrialization. This is because the function of regulation requires inputs or "factors of production" that are extremely scarce in developing countries; they, therefore, have a high opportunity cost associated with them. In addition, the process of regulation necessitates implementation which is a function of the availability of timely information, the extent of non-compliance, administrative competence, and the constant policing and detection of deviations from policy. Therefore, ideal regulations that are extremely difficult and costly to implement are worse than less ideal policies or approaches whose implementation costs are much lower. The use of the market as an administrative instrument would be less than ideal, but more efficient and cost-effective than a detailed administrative approach to industrialization.

Finally, one might add that several judgements have been made about the effectiveness of state intervention in this paper, particularly at the end of each of Sections II, III and IV. Admittedly these judgements have been made on some factual basis, but not on rigorous theoretical grounds. Nevertheless, given the current state of the theoretical foundation of economic development, the experience of developing countries provides one approach to reasoned judgements. On this basis, it seems safe to conclude that a prime function of governments in developing countries is to undertake policies that do not contribute to an uncertain economic environment. These policies must, therefore, be based on general directives and incentives that are non-discriminatory in nature. The regulation of economic activity, whether it
be through the planning mechanisms or through the control of the production process, should be conducted to achieve maximum benefits given the resource constraints and by keeping in mind the general dearth of human capital in most developing countries. The control of every facet of industrial activity has not proven to be a successful strategy precisely because such constraints have not been adequately taken into consideration. The task of the state, therefore, should be to remove those obstacles that dampen private initiative and to reform and strengthen specific markets so that the process of co-operation and the interdependence between the state and the private sector can be used as an instrument to maximize economic growth.
APPENDIX A

The Experience With Planning

In this appendix we review the experience some developing countries have had with the planning process. Developing nations have numerous characteristics in common which provide the environmental circumstances that are conducive to the transfer of experience. All place great expectations in industrialization and most are in the relatively early stages of industrial growth. Most possess limited resources in terms of capital and skilled manpower, and political instability from internal dissention or external threat is a lurking problem for many.

Most of these countries have viewed, and continue to view, planning as an evolutionary and experimental phenomenon. This will be apparent from the examples presented in this section. It is only in India that the commitment to planning has been so deep and pervasive as to make it essentially a basic element of the governmental structure. The significance of the evolutionary nature of planning is that there is an increasing opportunity for the private sector to contribute its judgement, knowledge and experience to the earliest phases of plan-making. This, in turn, permits the private sector to undergo change and development. Even countries, such as India, which have adopted a doctrinaire view of planning, have begun to modify their views to permit an earlier and a more significant contribution from the private sector. Therefore, in countries where the private sector is not included in the planning process, it does not necessarily mean that it will not play a more significant role in the future. Nevertheless, it would appear that most developing countries need to work at developing and experimenting with instruments of private-sector participation; in other words, on how and when the private sector should be brought into the planning process.
The experience of five countries is briefly discussed below. Two countries (India and Egypt) have been very involved with detailed centralized planning systems; the problems they have encountered, though not identical, are similar. Another country (Tanzania) is an interesting example of a low-income developing one that changed its planning system from an essentially indicative type to a centralized one. This example also highlights the problems such countries face when they attempt to undertake a detailed approach to planning. A fourth country (Yugoslavia) is a case of movement in the opposite direction to Tanzania; i.e., the evolution of the system from central planning to indicative to what is now called self-management planning. The last case (Ivory Coast) is an example of a country that has always practiced an indicative approach to planning. Relatively greater emphasis is placed on two of these countries, India and Yugoslavia. The former, because it has shown no indication or desire to move away from imperative central planning despite years of unsatisfactory experience; the latter, because there has been the phenomenon of learning-by-doing. Yugoslavia has demonstrated an ability to direct and change the planning mechanism on the basis of its experience.

A.1. The Indian Experience of Detailed Centralized Planning 1/

Planning has never been a strange concept to Indian intellectuals and leaders. As far back as 1935 eminent economists had stressed the need for formulating an economic plan, and in 1938 the National Planning Committee generally assumed that the economic development of India rested in the hands of the government and that this task could best be executed in the form of a plan.

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1/ This section is based upon Lewis [63], Honey [51], Griffin and Enos [41], Agarwal and Lal [2], Khan [62] and Chakraverty and Bhagwati [20].
A.1.1 How Planning is Conducted

After independence, the issue was not whether India would plan but how planning would be conducted. To this end, two principal planning bodies were established: the Planning Commission in 1950 and the National Development Council in 1952. The planning function undertaken by these bodies involves all the agencies of the central and state governments. Given the federal character of India's government and the political sensitivity of the various states (regions), the integration of the state governments into the planning process is considered to be important. Within each state government there is a planning department which is the direct responsibility of the Chief Minister. In the various state ministries there are planning groups which parallel those in the central government ministries. The Chief Minister of each state represents the state's interest to the Planning Commission. He is accountable for the consistency of the plans and for the operations of the state government departments with the national development scheme.

The Planning Commission undertakes the formulation of the five-year plans. Preliminary judgements about the state of the economy and the identification of objectives and problems which should receive special attention are submitted by the Commission to the Cabinet and to the National Development Council. These targets are then given as provisional guidelines to several working groups, each of which prepares a five-year sector program. The state governments are also asked to contribute similar working groups whose efforts can then be coordinated with those of the national groups. On receiving these tentative sector programs, the Planning Commission presents to the Cabinet and to the National Development Council a brief memorandum
sketching a proposed five-year plan. After this memorandum is approved (possibly with amendments), the Commission prepares an elaborate Draft Outline of the plan which is presented to the Parliament and to the public. After extensive discussions with private groups, ministries, and the state governments, a detailed final plan is then formulated and presented to the Cabinet, the National Development Council and the Parliament. Parliamentary debate and approval by a general resolution makes the plan effective.

In addition to the medium-term plan, a long-term perspective plan (of 15 to 25 years) is also conducted within the Planning Commission. The bulk of the Indian planning machinery, however, is involved in the medium-term plan. Annual planning is also undertaken. But, the linkages between five-year and annual plans have been extremely loose throughout all five-year plans undertaken.

The role of the private sector in planning is somewhat ambiguous. Although in theory, during the study and analysis stage, the Planning Commission sets up working groups which include representatives from the private sector, in practice this has been the exception rather than the rule. For the first three plans these were composed only of government officials. However, for the Fourth Five-Year Plan the working groups included representatives from private industry and labor as well as professional consultants. Through time, improvement has been made as it has been recognized that it is useful to draw upon the knowledge and data available in the private sector for plan preparation.
A.1.2 The Five-Year Plans

The medium-term plans of India have concentrated on capital formation with a strong bias towards basic and heavy industries. Since the private sector does not have enough resources, Indian plans are predominantly public sector plans. However, a part of the medium-term plan is earmarked for the private sector. But since this sector cannot be directed in the same way as the public sector, these plans provide a control mechanism which consists of regulatory devices and restrictionist methods to force the private sector to conform to plan objectives.

(i) First Five-Year Plan (1951-56)

This plan was limited in its objectives and did not clearly specify any strategy. It was basically involved with short-term readjustment problems brought about by the termination of World War II and the partition of the sub-continent. It did not, accordingly, attempt to confront all the major long-term development problems of the economy. The role of private investment was discussed in the plan, as well as the relationship between the public and private sectors, but emphasis was placed on reorganizing and coordinating the public sector and increasing the rate of capital expenditure by public bodies. Agriculture was given very high priority with only 6 percent of planned investment allocated to industry; this emphasis was reversed in subsequent plans.

(ii) Second Five-Year Plan (1956/57-1960/61)

The First Plan did not provide any strategy for long-term development. It was at the time of formulation of the Second Plan that the planners began having a long-term perspective and a basic strategy governing this perspective. The theory behind this strategy implied a strong emphasis on
the capital goods sector - the Mahalanobis strategy. Thus, the objectives of the Second Plan state that: "in the long run, the rate of industrialization and the growth of the national economy would depend on the increasing production of coal, electricity, iron and steel, heavy machinery, heavy chemicals and heavy industries generally, which would increase the capacity for capital formation. Our important aim is to make India independent as quickly as possible of foreign import of producer goods so that the accumulation of capital would not be hampered by difficulties in securing supplies of essential producer goods from other countries. Heavy industry, therefore, should be expanded with all possible speed" [2, p. 398]. Thus, the emphasis here was radically different from that of the First Plan which gave priority to agriculture.

This strategy also provided the basis for subsequent plans. There were, however, some variations and departures which were necessary to accommodate the conditions and stress that emerged during the second and subsequent plans. For example, in the formulation of the draft Fourth Plan (which was later transformed into three annual plans) there was a "greater emphasis on rapid growth. Quick yielding projects ... being preferred within each economic sector ... roads, light industry, and improved seeds have been favored at the expense of railways, heavy industry, and community development." [80, p. 11]. This shift, however, was temporary. The overall strategy governing the development of the country was the same as that of the Second Plan.

On the basis of this strategy, the share of public investment allocated to industry rose from 4 percent in the First Plan to 20 percent in the Second Plan. Due to the emphasis on heavy industry, there was a
substantial increase in foreign exchange requirements. But there was a shortage; the foreign exchange requirements had been grossly underestimated, and the plan promptly ran into trouble. The underestimation resulted from poor planning. The planners had allocated investments in a single five-year lump; the whole five-year allocation of foreign exchange for private investment was made available at once. Private investors, however, used up the majority of this allocation in the first two years of the plan period. This resulted in the foreign exchange crisis of 1957 and 1958 and the subsequent foreign exchange constraint that continued to impede not only further expansion, but also current production in many industries during the remainder of the plan period.

The time-phasing of investments was also extremely poor in the public sector. Little or no provision had been made for those projects that were to be started towards the end of the Second Plan and completed early in the Third Plan. Moreover, as the Second Plan unfolded, many inconsistencies developed. Cement capacity was installed considerably ahead of demand requirements while steel and coal capacity lagged badly. Some of these difficulties were the result of problems that could not be foreseen; however, much of the trouble was attributed to bad detailed planning.

In spite of these difficulties, some progress was made. Industrial production rose on average 8.2 percent a year throughout the plan period. The achievements in industrial production are indicated in Table A.1.
Table A.1: INDIA: INDICES OF INDUSTRIAL PRODUCTION  
(Base Year 1950/51)

<table>
<thead>
<tr>
<th>Group</th>
<th>1955-56</th>
<th>1960-61</th>
<th>Percent Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Index</td>
<td>139</td>
<td>194</td>
<td>+39.6</td>
</tr>
<tr>
<td>Cotton Textiles</td>
<td>128</td>
<td>133</td>
<td>+ 3.9</td>
</tr>
<tr>
<td>Iron and Steel</td>
<td>122</td>
<td>238</td>
<td>+95.1</td>
</tr>
<tr>
<td>Machinery (all types)</td>
<td>192</td>
<td>503</td>
<td>+162.0</td>
</tr>
<tr>
<td>Chemicals</td>
<td>179</td>
<td>228</td>
<td>+27.4</td>
</tr>
</tbody>
</table>

Source: Khan [62].

These figures indicate the slow development of the cotton textiles due to the restricted imports of component parts. The rapid increase in the production of iron and steel and the machine tools reflects the government's concern for the production of capital goods.

(iii) Third Five-Year Plan (1960/61-1965/66)

The Third Plan continued to give high priority to heavy industry. It started with the explicit objective of generating foreign exchange so as to be self-sufficient. The Third Plan document states that "external assistance is essential for this period, but the aim must be to make the economy more and more self-reliant, so that it is able to support within a period of ten or twelve years an adequate scale of investment from its own production and savings. Normal inflows of foreign capital may continue but reliance on special forms of external assistance has to be reduced progressively and eliminated. The Third Plan represents a crucial state in this process."

[62, p. 53].

To achieve this objective, the expansion of capital goods and machine-building industry on a large scale was considered to be essential. The plan, however, encountered difficulties from the very start with foreign exchange shortages and the rapid increase of foreign debt. The results
achieve were disappointing. The target rate of growth over the plan period was 5.4 percent per annum. The achieved rate was 2.5 percent; this was lower than that achieved in either of the previous two plans and less than half the target rate. In the industrial sector, however, the achievement was better. Table A.2 shows the increase in the output of the major industrial sectors at 1960-61 prices.

Table A.2: INDIA: OUTPUT OF INDUSTRIAL SECTORS (in Rs. crores)

<table>
<thead>
<tr>
<th>Industries</th>
<th>1960-61</th>
<th>1965-66</th>
<th>Percent Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consumer Goods</td>
<td>423.7</td>
<td>487.6</td>
<td>+15.1</td>
</tr>
<tr>
<td>Intermediate Goods</td>
<td>346.1</td>
<td>620.2</td>
<td>+79.2</td>
</tr>
<tr>
<td>Machinery</td>
<td>151.3</td>
<td>315.5</td>
<td>+109.0</td>
</tr>
<tr>
<td>Others</td>
<td>6.9</td>
<td>10.3</td>
<td>+49.3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>928</strong></td>
<td><strong>1434.0</strong></td>
<td><strong>+54.5</strong></td>
</tr>
</tbody>
</table>

Source: Khan [62].

The increase in the consumer goods industries was the smallest, however, while that in the intermediate goods and machinery sectors were substantially higher. This manifested itself in the increase in the capacity of steel, aluminum, engineering, chemical and petroleum products.

(iv) Fourth Five-Year Plan (1969/70-1973/74) 1/

The rapid growth of industrial production continued to be a major objective of Indian economic policy, and some progress was made in promoting this objective up to the mid-60s; industrial production had increased at an

1/ Due to the war with Pakistan and severe droughts, the Fourth Plan was postponed to 1969/70. The interim period, between the end of the Third Plan and the start of the Fourth, was covered by a series of annual plans.
average rate of over 8 percent up to this period. However, average annual growth in this sector, during the Fourth Plan period dropped to 3.9 percent.

A number of factors contributed to this decline. While there was significant under-utilization of capacity in a large number of industries due to the shortage of critical inputs such as steel, cement, non-ferrous metals and power, in many other industries operational problems created bottlenecks. In the agro-industries, output showed an erratic trend due to the fluctuations in the production and availability of related agricultural raw materials. In many industries output declined because or poor industrial relations. Above all, inadequate investment significantly affected new capacity expansion. Capacity in major industries during the Fourth Plan period grew at an average rate of 3.8 percent per year. Thus, the growth in industrial production was low. Both in the public as well as the private and cooperative sectors, there were substantial shortfalls in planned investments. This coincided with a period of accelerating inflation; the result was that the gap in real terms between planned and actual investment was very wide. (See Table A.3.)


<table>
<thead>
<tr>
<th>Savings/Investment</th>
<th>Target</th>
<th>Achievement</th>
<th>Deviation (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public Savings</td>
<td>58</td>
<td>32</td>
<td>-44.82</td>
</tr>
<tr>
<td>Private Savings</td>
<td>148</td>
<td>145</td>
<td>-0.02</td>
</tr>
<tr>
<td>Domestic Savings</td>
<td>200</td>
<td>177</td>
<td>-11.50</td>
</tr>
<tr>
<td>Foreign Savings</td>
<td>26</td>
<td>15</td>
<td>-42.31</td>
</tr>
<tr>
<td>Total Savings</td>
<td>226</td>
<td>195</td>
<td>-13.72</td>
</tr>
<tr>
<td>Public Investment</td>
<td>136</td>
<td>111</td>
<td>-18.38</td>
</tr>
<tr>
<td>Private Investment</td>
<td>90</td>
<td>81</td>
<td>-10.00</td>
</tr>
<tr>
<td>Total Investment</td>
<td>226</td>
<td>192</td>
<td>-15.04</td>
</tr>
</tbody>
</table>


During the Fifth Plan period the government continued to lay emphasis on the development of core sector industries. In the early years of the plan, however, it concentrated on removing the hurdles of growth mentioned in the Fourth Plan period. Therefore, improvements in the management of public enterprises and the administration of industrial policy were initiated, the availability of energy and other inputs was emphasized, and changes in the area of industrial licensing were made in order to stimulating investment in the priority sectors, and to ensure fuller utilization of installed capacity. As a result, industrial production showed an increase since the spring of 1975. Industrial production, which at the beginning of the plan period was low, increased in 1975/76 by 5.5 percent. Intermediate products had rates of growth in excess of 10 percent, while capital goods, which had declined by over 4 percent during 1974/75, increased to the level of the previous year.

In 1976/77, the rate of industrial growth reached 10 percent, the highest rate of industrial growth recorded in over 10 years. It, however, slowed down to 5 percent in 1977/78. Overall industrial output increased by 7.0 percent a year over the period 1975-78 as compared to only 3.0 percent in the period 1970-75. This more rapid industrial expansion was a significant improvement not only over the early 1970s but also over the decade from 1965 to 1975 when industrial growth had been sluggish. This increase in industrial

1/ A Draft Fifth Plan had been discussed by the National Development Council in December 1973, but because of the implications of the international oil crisis, the Plan magnitudes had to be drastically revised and final approval of the document had to be postponed until three annual plans had been formulated. The final Fifth Plan was thus basically a plan for the remaining two years (1977/78-1978/79) of the plan period. But with the election of the new government, this plan was cut short to 1977/78. Thus, this plan was a series of annual plans covering four instead of five years.
activity has been accounted for by the easing of various bottlenecks, e.g. electricity, as well as the gradual improvement in the performance of public sector enterprises in basic industries such as steel and heavy engineering. On the demand side, the increase was stimulated by a rise in incomes and by increased exports.

The March 1977 elections which ushered into power a new Government (and a new industrial policy) cut short the Fifth Plan by one year. With the new objective of encouraging rural and small-scale industry, the Five-Year Plans are now intended to incorporate the concept of "rolling plans" where each year the plan is revised and extended to include a total of five years.

A.1.3 Reasons for Deviation from the Plans

There are many reasons that have been put forward to explain why the actual performance of Indian industry deviated from the plans. The exogenous shocks faced by the country is one explanation. These refer to the war with China in 1962, the war with Pakistan in 1965 and again in 1971, two successive drought years in 1965/66 and 1966/67 which were repeated with less intensity in 1971/72 and 1972/73, and more recently the oil crisis. It is argued that these exogenous shocks have introduced disturbances in the general growth process over the last 10 years and in particular in the process of industrial expansion. The period from 1965 to 1967 was very difficult because of the serious crop failures and the short-term disruption caused by devaluation. This led to the postponement of the Fourth Plan to 1969/70.

Another explanation is the lack of any economic attention paid to determining the plan targets. Associated with this is the issue of the instruments used to enforce these plans and the inefficiencies caused by the industrial policies. In particular, the complex system of licensing and bureaucratic controls as applied in India has not, on the whole, been
conducive to promoting industrial efficiency. The consequences of highly protectionist trade policies have also been quite detrimental "to the growth of the economy by adversely influencing export performance, by wasteful inter-industrial and inter-firm allocation of resources, by permitting and encouraging expansion of excess capacity and by blunting competition and hence the incentives for cost-consciousness and quality-improvement" [16].

In addition, the planned industrialization led to imbalances between the structure of industrial capacity created and the structure of demand. These imbalances were severe in the absence of a growing export market. Poor plan formulation and the inefficiencies associated with sectoral investment allocation and the timing of individual projects within the industrial sector also contributed significantly to the poor performance of this sector.

A.2 Planning in Egypt 1/

Egypt is another example of a country that has instituted detailed central planning. In the ten years after assuming power in 1952, the Government in Egypt changed the direction of its economic policy, from encouraging the private sector, to gradually increasing restrictions and controls on it, to finally bringing about massive nationalization, state intervention and comprehensive national planning throughout the economy. The process was frequently hesitant and often ad hoc. This interventionist policy was continued until the next major change, viz. the "Al-Infitah" or the "opening up" policy of President Sadat in 1975.

The transition from an essentially free, private enterprise system (with the government mainly in charge of law and order and public works) to a

1/ This section is based on the analysis of a recent World Bank economic mission.
planned economy with a dominant public sector took place between 1954 and the early 1960s. The public sector was initially a very small entity when the government obtained equity in two or three new industrial enterprises established in 1954. Then, in 1957, there was the nationalization of British and French economic interests and the increased public investment in industry (during the First Industrial Plan of 1957-60); in 1960 Bank Misr was nationalized and soon after several other financial and industrial enterprises were taken over. Socialist ideology was now beginning to be involved and, as a result, the nationalizations were more of an ad hoc nature rather than being based on economic arguments. At the same time, planning became more comprehensive.

In 1957, two sectoral five-year plans were formulated, one for agriculture and one for industry. In 1960 the First Five Year General Plan for Economic and Social Development (1960/61-1964/65) was launched. As the planning process was made more comprehensive, there were increasing restrictions placed on the private sector. After the 1961 nationalizations, the private sector was relegated to a relatively minor role. Private property, however, was not abolished, but the opportunities for private economic activity and decision making, especially in investment and production, were severely restricted.

Egypt currently has a plethora of institutions and mechanisms that are required for both short- and medium-term planning of the economy. They include the Supreme Planning Council, the five-year plan, the annual plan, the domestic budget, and the ownership and control of virtually the entire industrial structure. In nearly two decades, Egypt has had only one medium-term plan (from 1960 to 1965) that was seriously pursued. Subsequent
attempts were disrupted by wars and balance of payments difficulties. As a
result, serious attention has not been paid to medium-term planning for
several years, and the government has been primarily concerned with short-
term economic management. There are, also, severe problems of coordination
and implementation of the policies and recommendations of the different
agencies involved in planning.

Some of these problems arise from the frequent changes in high-level
personnel in the major economic ministries. 1/ This has created a period of
discontinuity during which the new members have had to adjust to the new
environment and grasp the dimensions of the problems confronting them.
Changes at the lower administrative level have also taken place due to the
relatively low salaries paid to the civil servants. This has led to a loss
of the more able civil servants and high-level technicians to the private
sector and to other neighboring countries.

Another difficulty faced by the planners is the lack of timely data.
Egypt has a well-developed statistical system which generates a considerable
quantity of numbers. Most of these, however, are not very useful and are
often not available at the appropriate time. In addition, the budget is
exceedingly intricate and contains substantial double-counting; this adds
further to the data problem and makes the budget a tool of only limited use-
fulness for analyses or for assessing the impact of economic policy. The
lack of interaction between ministries, particularly when policies are being
discussed, has not helped either. This has manifested itself in the annual

1/ Since 1975, there have been five Ministers of Planning, five Finance
Ministers, and three Ministers of Economy.
plans which have been seriously deficient in the discussions of the implications of various economic policies.

Another major problem is the over-extension of investment funds; i.e., the government has consistently spread its investment resources too thinly over a large number of projects. The "priority" projects have generally exceeded the available resources. Rather than allocating funds on rational economic criteria and selecting the socially most profitable projects given the resource constraint, the government has instead initiated a large number of projects and then allocated insufficient funds to achieve their completion. This problem has then compounded itself because the "ongoing" projects have acquired a prior claim on resources in subsequent investment allocations. The result is that Egypt has accumulated a large portfolio of incomplete and poorly designed projects. In addition, the priority setting and coordination is rendered ineffective by the practice of some enterprises which obtain (informally) a commitment from external sources for a part of the project funding; pressure is then put on the Planning and Finance Ministries to supply the remainder. They often comply and this accentuates the problem of the misallocation of investment funds.

Egypt's first medium-term plan covered the period 1960-1965. As mentioned before, in the subsequent period, medium-term planning was replaced by short-term economic management. Recently, however, a new medium-term plan has been completed for a five-year period (1978-82). The case for medium-term planning in Egypt has been based on the assumption that the quality of current decision making would be enhanced if the decisions were based on the careful consideration of the likely outcome of events and of the potential direction of future policy. The medium-term plan, however, is of a fixed,
rigid nature which, in effect, negates this basis of planning; the actual performance of the economy in any year will inevitably diverge from the original forecast. The inflexible nature of a fixed-term planning exercise thus precludes the possibility of reassessing the projections for subsequent years. Recently Egypt has adopted a system of "rolling" five-year plans to annually take account of the changing environment and priorities.

The new medium-term plan has been submitted to the People's Assembly and the first year's program has been approved. The program for the remaining four years is under discussion. An initial assessment of the plan indicates that assumptions regarding the savings rate and investment are extremely optimistic. They permit the planners to predict very high growth rates of GDP. This is considered to be unrealistic. In addition, the large investment program proposed for the Plan period will make the practical problems of identification of priorities and project selection difficult if the investment funds are not available. Therefore, if these plan assumptions are not borne out, then, as in the past, it is very likely that ad hoc cuts in investment allocations will be made. There is also said to be little discussion in the Plan of the specific policies that would be required to transform the performance of the Egyptian economy to the extent desired. In addition, the role of the private sector is indicated only in passing; this lowers the probability of successfully implementing the new "open door" strategy, particularly since the mixed economy that Egypt is aiming at will possess a more complex structure than the present one. In place of an economy dominated by public investment which can, in principle, be easily directed into designated channels, the
economy is expected to include a large private sector whose investment decisions will be more amenable to incentives than to prescriptions and controls. The current plan, however, does not incorporate this aspect. It has not evolved from its initial conception of detailed central planning to a more indicative approach as in Yugoslavia. 1/

A.3. Planning in Tanzania 2/

The evolution of planning in Tanzania has followed a course similar to that of other British colonies and dependencies. The first steps were undertaken during the colonial period; following the Second World War, a ten-year development and welfare plan was published in 1946. It was subsequently revised in 1950. During the 1950's there was the East African Royal Commission Report (1953-1955), which was followed by a Five-Year Development Plan (1955); this was revised in 1957. In 1959, just before independence (in 1961) there was a World Bank Economic Survey Mission. After the Mission's report in 1961, a three-year development plan was launched.

In Tanzania, despite the British colonial legacy, the French approach to planning has had considerable appeal with the Tanzanian government. However, given the nature of the society, and a large and sparsely populated country with a relatively poor endowed agricultural base, the French approach required major adaptation. Reference to the French experience, nevertheless, encouraged wide consultation in the process of plan formulation even though most of the institutional factors were lacking.

1/ See Section A.4.

2/ This section is based on van Arkadie [111], Honey [51] and a World Bank mission review.
The First Five-Year Plan of the post-independence period (1964-69) proposed an ambitious program of industrial development. The plan was indicative in nature and emphasized dependence on external financial support. It, however, failed to reflect all the implications of the rural nature of Tanzanian society. In addition, since much of the economy was dominated by external influences, only a small portion was susceptible to influence by available policy instruments. The achievements and growth performance were considered to be satisfactory, although they fell short of the objectives set in the Plan.

The limited development options open to the country due to the extent of external dependence led to a radically new strategy which was introduced in the Arusha Declaration of February, 1967. A new course was chartered based on socialism and self-reliance which created the need for a different kind of planning.

The Arusha Declaration reversed the country’s strategy of dependence on foreign investment as the major instrument of development. This was done for two reasons. First, because the required amount of foreign exchange was not available; second, and more importantly, because dependence on foreign investment was not considered to be consistent with political independence, self-reliance or socialism. Therefore, most major industries were to be nationalized and most new investments would be made by the public sector.

As a result of this change in policy, by mid-1968 a significant portion of large-scale industrial activity was controlled by the state. The private sector was simultaneously subject to a number of controls and policy instruments. This increase in the extent of government intervention led Tanzania to adopt a system of centralized planning.
The investment allocation and planning is based, in principle, on a medium-term and an annual plan. The former is a five-year plan which allocates investment among sectors and indicates priorities within sectors. The annual plan specifies the projects and the amount of investment each ministry and parastatal will undertake in the plan year. In addition, the sources of finance are also specified.

In practice, however, the actual investments have had little relationship to amounts allocated in the medium-term plan. During the First Five-Year Plan period, the control of the industrial sector by private or foreign firms made this inevitable as there was no effective mechanism to direct these firms along the paths of the indicative plan projections. Despite the large public sector involvement during the Second Plan period, there was still inadequate direction given to investments.

There were many reasons for this breakdown in the planning system. First, the Five-Year plans were vague and unrealistic. They included a long list of projects which were not based on economic criteria and, therefore, the list was not indicative of priorities. As a result, the plans were characterized by overcommitments as the total number of projects exceeded the amount that could be implemented. In addition, the Annual Plans tended to ignore the Five-Year Plans; there was very little relationship between the two.

Second, the planning system had no effective mechanism for formulation or enforcement. Since no careful cost-benefit analysis was conducted on the projects incorporated into the plans, the planning exercise turned into
an annual budgetary exercise similar to the traditional ministerial budgetary allocations which had no relation to development plans.

Finally, the skilled technicians and manpower required to implement such a centrally planned system were in extremely short supply. This scarcity of skilled resources also contributed to all the problems of plan formulation and implementation.

The system of planning and investment decision making in Tanzania has been described as one of unplanned socialism. The choice of projects and issues relating to scale, timing and techniques of production is more the outcome of a bureaucratic process than of rational economic criteria. Since profit maximization is not the official motivating force, factor and product prices have little relationship to investment decisions. Project selection and choice of technique are determined by such factors as the source of finance. As a result, there is little relation between the outcome of the plan and the proclaimed objectives of industrial development.

A. 4 Yugoslavia: The Transition from Central to Self-Management Planning 1/

Thirty years of experience in Yugoslavia have resulted in changes in the planning mechanism and to the environment in which these changes have been carried out. These changes were not made for ideological reasons or for theoretical predilections for one type of economic planning system to another. Most of the changes have been the result of the pressure of facts against preconceived ideas and of an attempt to reconcile theory with the changing conditions of development. The multinational nature of the country with its

1/ This section draws on the works of Bicanic [17], Horvat [52] and a recent World Bank economic mission.
varied resource endowments and the different levels of economic development has demonstrated much quicker and more clearly the weakness in the planning mechanism of the Soviet pattern which might have been concealed for a longer time in a less complex country.


A. 4.1 Central Planning (1947-1952)

Yugoslavia's first experience in planning was with an extreme form of central planning based closely on the Soviet model. The Law of Planning was passed in 1946 with the Five-Year Plan period starting in 1946. All decisions were to emanate from the Federal Planning Commission with little direction of feedback from producing units. \(^1/\) This plan was to lay the foundations for the future industrialization and development of Yugoslavia. The Plan was extremely ambitious -- national income was to be doubled as compared with the pre-war level -- and in the first eighteen months it was quite successful.

\(^1/\) Article 15 of the 1946 Constitution states that "in order to protect the essential interests of the people, increase national welfare and make proper use of all economic potentials, the state directs economic life and development through a general economic plan, relying on the state and cooperative sector and exercising general control over the private sector in the economy".
However, in the first half of 1948, Stalin accused the Yugoslav party leaders of revisionism and antisovietism and soon afterwards the Cominform countries launched a major political and economic attack. The Yugoslav Communist Party was excommunicated from the "family of brotherly parties," various treaties were abrogated unilaterally, development loans were cancelled, trade with Yugoslavia which amounted to about one half of her total foreign trade was reduced to virtually nothing by the middle of 1949, and a complete economic boycott was established.

This attack by the Cominform forced the Yugoslavs to reconsider their ideological positions quite thoroughly and the system of central planning was extensively questioned. Apart from ideological dissatisfaction, the system did not produce the results expected on economic grounds. The First Plan was implemented satisfactorily, though not as well as was generally believed. In 1949, the economic blockage of the Cominform countries caused Yugoslavia to undertake a sudden reorientation of foreign trade; this imposed stifling effects on growth and industrial output fell by 4 percent in 1951. Thus, the conditions had been created for the search for a new economic system and, by the end of 1951, the centrally planned economy was abandoned.

The plan itself was extended into 1952, but the report on the fulfillment of the First Five-Year Plan was never published. Though not a full success, the Plan nevertheless generated output above the pre-war level and raised the share of gross investment in fixed assets to 33 percent of gross national product and created several new industries.

A.4.2. Planning by Global Balances (1956-61)

Between the abandoning of central planning in 1951 and before the new economic system became well established in 1956, the economy was managed on an ad hoc basis through a system of annual plans. Central planning was
now replaced by planning of basic proportions, sometimes referred to as planning through "global balances." These were used by the Planning Bureau to forecast sectoral growth rates. Such "fundamental" planning was the responsibility of the State organs; enterprises on the other hand would have "operative" plans based on these basic proportions and market signals. To facilitate the use of the market, steps were taken towards creating a unified price structure and adopting a more realistic exchange rate. The new planning system coincided with the increased emphasis on the growth of consumption. The Second Five-Year Plan (1957-61) was considered to be very successful with all the objectives being fulfilled within four years.

A.4.3. **Indicative Planning (1961-75)**

The success of the Second Five-Year Plan provided the incentives for further changes in the system of economic management; the question now became one of determining the respective roles of the plan and the market. In 1961, three new reforms were implemented to increase the role of the market. The reforms were, however, ill prepared, inconsistent and badly implemented. The result was that in one year the rate of growth of industrial output was reduced to one half of its 1960 level, imports increased rapidly, exports stagnated and wages increased in excess of productivity. These economic difficulties led to a national debate on whether the solution lay in the further "liberalization" of the economy or a retrogression to greater central control. As a result of this debate, major economic reforms were instituted in 1965; they "liberalized" the system even further. After these reforms, planning in Yugoslavia became indicative in nature. The new role of planning was to provide forecasts and a basis for rational decision-making by enterprises, and to determine a set of objectives to be pursued by the
government through the use of non-administrative instruments. Once accepted, the Social Plan became a directive for the Socio-Political Communities, this was the only compulsory aspect of the plan.

The basic premise of the new system of planning was that enterprises by maximizing their own income would further the public interest. An appropriate environment was, therefore, required for individual producers with appropriate signals and incentives to ensure macro-economic stability. With the exception of the Federal Fund for the Less Developed Republics, investment decision-making was relegated to the market. This new system of economic management, however, did not live up to expectations. 1/ The economy exhibited considerable cyclical behavior, with periodic balance of payments problems, growing inflationary pressures, and stop-go policies. At the same time there were structural imbalances. This has all been attributed to the combination of an imperfect market system with inadequate instruments of economic policy.

A.4.4. The Procedures of Self-Management Planning

The new system of planning incorporated into the Constitution and based on a new Law on Planning (1976) is different from any of its predecessors. First, unlike the previous system based on plans prepared by the Planning Institutes, the new system incorporates the participation of all decision makers. Second, whereas the previous plan was largely indicative, imposing legal obligations only on the Social-Political Communities, Self-management Planning involves binding legal obligations on all decision makers.

1/ See Table A.4 for details regarding planned targets and actual achievements regarding GNP, exports and imports for 1971-75.
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<td>8.1</td>
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<td>Imports</td>
<td>10.0</td>
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1/ Computed from 3-year averages.

The new system was devised as a response to the failure of the purely indicative form of planning. It was generally felt that an economy at Yugoslavia's level of development still required a long-term, macro-economic strategy with some form of *ex ante* coordination; *ex post* coordination through the market mechanism was felt to have been inherently wasteful. The new system is an attempt to develop a system of planning based on economic principles.

The new process involves all "planning agents" who are affected by the decisions to be made. It is to be carried out simultaneously at all levels, i.e., at the micro level between enterprises and at the macro level between the Socio-Political Communities. The process is intended to be a continuous one, with annual assessments and revisions which may be necessary with changed economic circumstances. The cycle for the preparation of the next medium-term plan, 1981-85, is to have started in 1978. There is also an obligatory exchange of information by all planning agents on their respective plans; the individual plans at all levels must go through a process of "harmonization," and are then incorporated into legally binding agreements. These stipulate not only specific obligations but also penalties for failure to fulfill these obligations; in addition, the planning agents are bound by law to a firm timetable for the planning process. The basic plan is the medium-term Five-Year Plan. There is also a Long-Term Plan which reviews long-term objectives and structural changes.

The planning process starts with the passage of a law at the Federal level. This specifies the plan period and timetable for the major steps of the planning process. This process commences simultaneously at all levels. Each enterprise is expected to review its performance during the preceding
plan period and determine its starting position; it then sets out its expectations and forecasts regarding the prospective level of output, input requirements, etc. The enterprises then exchange these initial projections with each other. In the process, assumptions, expectations and projections are adjusted between the enterprises, and with certain macro-economic parameters established through the parallel process of "Social Planning," the enterprises incorporate their common understanding in Self-management Agreements. The final plans are then drafted by the enterprises.

A parallel process of "Social Planning" is conducted by the state. The Planning Institutes first review the expiring plan period and identify the problems to be faced in the subsequent period. They then set out the macro-economic assumptions on external conditions and consider alternative scenarios of development. These are formally submitted to the respective assemblies, which decide on one of these scenarios. The tentative social plans are then extensively reviewed by economic chambers and trade unions and, after agreement has been reached, they are incorporated into "Social Compacts." The final plans are then drafted by the Planning Institutes and adopted by the assemblies.

The next step is the fusion of these two forms of planning, which have so far been carried out independently, into one consistent master plan. Thus, the top-down social planning process must be reconciled with the bottom-up one. This fusion process is not necessarily viewed as one of resolving conflicts but as a process whereby the planning agents are forced to view their development objectives at differing levels of aggregation. They are, therefore, forced to consider the broader objectives and the necessary trade-offs involved. Though the negotiated solution is agreed by all
involved in the process, the final solution may not necessarily be socially optimal.

To facilitate this process of planning which would become quite unwieldly if each individual unit had to be involved, large "economic complexes" of enterprises are created. This reduces the system to one of "Network Planning" which is conducted at different levels. The actual plans that are adopted at the Republican and ultimately at the Federal levels are based on the Social Compact and Self-Management Agreements reached by the various economic units.

There are three major advantages of this new system of planning. First, the planning process is based on an extensive exchange of information between all involved; this facilities national decision-making. Second, the requirement that planning be carried out by all economic agents at all levels ensures that all interests are represented. Third, unlike the market mechanism, self-management planning attempts to provide an \textit{ex ante} equilibrium solution. It also avoids the pitfalls of central planning which ignores consumer sovereignty. This process of multi-level planning is, therefore, an attempt to determine an economic equilibrium based on the exchange of information. Consistency is assured through an iterative adjustment of individual plans.

There are, however, disadvantages associated with this system. First, the full cycle of planning takes about two to three years, involving several extremely time-consuming iterations within and between numerous planning agents. The associated costs are, therefore, likely to be quite high. Second, the nature of this planning system leaves economic units with little flexibility. Changes in the underlying premises of the plans can
occur at any time requiring revisions. The openness of the Yugoslav economy also increases the probability of such unforeseeable events, though the large foreign exchange reserves, good access to external sources of capital, and the diversified nature of its trade provide a cushion. Nevertheless, under rapidly changing circumstances the system of planning could face difficulties in reacting too slowly and, thus, leading to a misallocation of resources. Nevertheless, it is stated that the Yugoslavs are very much aware of the potential inflexibility and, therefore, foresee a system of continually evaluating the implementation of the plan to make the necessary adjustments.

A.5 **Ivory Coast: An Arbitrage Approach to Planning**

The Ivory Coast has an extensive record of planning. After independence in 1960, the country was engaged in a series of ten-year projections for the economy through 1970 and the government chose to continue the policies followed during the final stages of the colonial era. Then, a Four-Year Plan for 1967-70 was introduced and this was followed by a Five-Year Plan for 1971-75. The latest plan covers the 1976-80 period.

Given the liberal economy of Ivory Coast, planning is conducted very much along the French lines of indicative planning. The system, therefore, permits a certain degree of flexibility. Since the Four-Year (1967-70) Plan, the planning process has undergone continual improvement and sophistication. The drafting of the plan was involved a large and highly technical staff most of whom are expatriates.

The plan itself is a very detailed document which attempts to quantify the economic goals and to provide the necessary regional and sectoral

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1/ This section is based on the World Bank Report [115].
investment breakdowns. In addition, a financial plan is also provided. Recently, the Ministry of Planning has begun to distinguish between the planning process and the programming process. The former develops a macro-economic framework, formulates the economic objectives, ensures consistency and identifies the priorities. The latter monitors the individual projects which are used to attain the economic objectives of the government. Any changes in direction, emphasis or cost in any year are taken into consideration by a three-year rolling program called the "Loi Programme."

The system, therefore, provides a medium-term Five-Year Plan (the Loi Plan) which dovetails with the three-year rolling program (the Loi Programme) which contains annual details at the project level. There is, thus, a mechanism built into the planning process to keep track of the execution of the overall plan, of scheduling and coordinating the implementation of the projects and of transferring resources as bottlenecks become apparent or as the economic environment changes.

The Ministry of Planning, rather than selecting the projects identified in the plan, instead plays the role of an arbitrator between the technical ministries and public enterprises on the one hand and the Finance Ministry and the government on the other. Programs are put forward by the technical ministries and public enterprises, 1/ while the government formulates overall objectives. Based on these objectives, the Ministry of Planning prepares consistent forecasts for a five to ten year period, then produces the overall target figures for output and investments. Within these constraints, the Ministry of Planning, together with the technical ministries,

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1/ Public enterprises have to submit their long-term investment plans to the Ministries of Finance and Planning and to the technical ministry involved.
identifies and selects the projects from the plan document. This "arbitrage" approach to planning has its problems in that it is a long process and it is often difficult to reconcile the demands and programs of the different ministries. In this system, responsibility for long-run coordination of projects rests with the Ministry of Planning. The Ministry of Finance is responsible for the annual financing of investments and the technical ministries are responsible for project preparation and execution.

It is expected that the 1976-80 plan will emphasize planning by objectives and de-emphasize the project details. The current approach has led to a surplus of investment proposals and attempts to reduce the total amount of planned investments have not been very successful. There appears to be a need to make hard decisions regarding priorities in the selection of investment programs.

Another aspect of this approach is that it concentrates on investment planning and pays much less attention to recurrent expenditure. The latter are currently rising faster than revenues, thus contributing to a decline in savings. As a result, these investment programs are being increasingly financed from borrowed funds. It has, therefore, been suggested that this aspect be incorporated into the Loi Programme.

Table A.5 shows the amount (in percentage) of public investment forecasted and actually allocated to the major development programs in the various plans. In the period 1960-1966, economic infrastructure was emphasized, while economic development, the category in which investment is allocated for industrial production, constituted only 19 percent of public investment. This figure has subsequently increased to over 30 percent in this period; real income per capita grew at 5 percent per annum though there was
considerable regional imbalance. This imbalance had not changed since 1960. With respect to implementation, the table shows that forecasted and actual values are not as disparate as they are in many developing countries.

The 1971-75 plan was an improved and more detailed version than the preceding one. The improvements included better economic analysis and an improved system of rolling budgets. This plan placed as great an emphasis on industrial development as its predecessor, and considerably more than in 1960-66. However, the plan was not completely successful in implementing its target value for economic development of 37 percent of public investment. The actual figure turned out to be 32 percent. Nevertheless, despite the shocks of the oil crisis and the world recession of 1975, the GDP in this plan period grew at a real annual rate of 5-6 percent; this was, however, below the plan target.

The forecast or target figures for the 1976-80 plan are very preliminary and were arrived at prior to the completion of the arbitrage process. It is presumed that these figures will be reduced once the process is completed.
### Table A.5: IVORY COAST: PLAN FORECAST AND IMPLEMENTATION

(% of Public Investment)

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<td></td>
<td>Actual</td>
<td>Forecast</td>
<td>Actual</td>
<td>Forecast</td>
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<td>19</td>
<td>36</td>
<td>33</td>
<td>37</td>
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<tr>
<td>Economic Infrastructure b/</td>
<td>46</td>
<td>39</td>
<td>35</td>
<td>32</td>
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<tr>
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<td>2</td>
<td>6</td>
<td>14</td>
<td>17</td>
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<tr>
<td>Cultural Development d/</td>
<td>9</td>
<td>7</td>
<td>7</td>
<td>9</td>
</tr>
<tr>
<td>Government Infrastructure e/</td>
<td>24</td>
<td>12</td>
<td>11</td>
<td>5</td>
</tr>
<tr>
<td>Total (percent)</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Total (current CFAF bil.)</td>
<td>116 f/</td>
<td>277 g/</td>
<td>1,350</td>
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Average per year (1975 CFAF bil.)

|                         | 31.1    | 61.9    | 109.5   | 270 h/  |

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a/ Almost entirely primary sector until 1971; about 6 percentage points for the secondary sector in 1971-75 and around 10 percentage points planned for 1976-80.

b/ Communication and energy.

c/ Urban development, health and welfare.

d/ Education and Culture.

e/ Research, defense and general administration.

f/ 1967 prices.

g/ 1970 prices.

h/ 1975 prices - very preliminary.

Source: World Bank [115].
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<table>
<thead>
<tr>
<th>No.</th>
<th>Title of Paper</th>
<th>Author</th>
</tr>
</thead>
<tbody>
<tr>
<td>310</td>
<td>Teacher Training and Student Achievement in Less Developed Countries</td>
<td>T. Husen, L. Saha, R. Noonan</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(consultants)</td>
</tr>
<tr>
<td>311</td>
<td>Optimum Economic Power Supply Reliability</td>
<td>M. Munasinghe, M. Gellerson</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(consultant)</td>
</tr>
<tr>
<td>312</td>
<td>Intra-Industry Trade and the Integration of Developing Countries in the World</td>
<td>B. Balassa</td>
</tr>
<tr>
<td></td>
<td>Economy</td>
<td></td>
</tr>
<tr>
<td>313</td>
<td>Export Promotion Policies</td>
<td>B. de Vries</td>
</tr>
<tr>
<td>314</td>
<td>The Changing Composition of Developing Country Exports</td>
<td>H. Chenery, D. Keesing</td>
</tr>
<tr>
<td>315</td>
<td>Urban Growth and Economic Development in the Sahel: Prospects and Priorities</td>
<td>M. Cohen</td>
</tr>
<tr>
<td>316</td>
<td>World Trade and Output of Manufactures: Structural Trends and Developing</td>
<td>D. Keesing</td>
</tr>
<tr>
<td></td>
<td>Countries' Exports</td>
<td></td>
</tr>
<tr>
<td>317</td>
<td>Cuba: Economic Change and Education Reform 1955-1974</td>
<td>M. Carnoy, J. Wertheim</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(consultants)</td>
</tr>
<tr>
<td>318</td>
<td>Sources of Fertility Decline: Factor Analysis of Inter-Country Data</td>
<td>R. Faruqee</td>
</tr>
<tr>
<td>319</td>
<td>Educational and Economic Effects of Promotion and Repetition Practices</td>
<td>W.D. Haddad</td>
</tr>
<tr>
<td>320</td>
<td>Small Farmers and the Landless in South Asia</td>
<td>I.J. Singh</td>
</tr>
<tr>
<td>321</td>
<td>Fruit and Vegetable Exports from the Mediterranean Area to the EEC</td>
<td>R.D. Hunt</td>
</tr>
<tr>
<td>322</td>
<td>Ability in Pre-Schoolers, Earnings, and Home-Environment</td>
<td>R. Grawe</td>
</tr>
<tr>
<td>323</td>
<td>Priorities in Education: Pre-School; Evidence and Conclusions</td>
<td>M. Smilansky</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(consultant)</td>
</tr>
<tr>
<td>324</td>
<td>Tropical Root Crops and Rural Development</td>
<td>T.J. Goering</td>
</tr>
<tr>
<td>No.</td>
<td>TITLE OF PAPER</td>
<td>AUTHOR</td>
</tr>
<tr>
<td>-----</td>
<td>-------------------------------------------------------------------------------</td>
<td>---------------------</td>
</tr>
<tr>
<td>325</td>
<td>Costs and Scale of Bus Services</td>
<td>A.A. Walters</td>
</tr>
<tr>
<td>326</td>
<td>Social and Cultural Dimensions of Tourism</td>
<td>R. Noronha</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(consultant)</td>
</tr>
<tr>
<td>327</td>
<td>Investment in Indian Education: Uneconomic</td>
<td>S. Heyneman</td>
</tr>
<tr>
<td>328</td>
<td>Nutrition and Food Needs in Developing Countries</td>
<td>O. Knudsen</td>
</tr>
<tr>
<td></td>
<td></td>
<td>P.L. Scandizzo</td>
</tr>
<tr>
<td>329</td>
<td>The Changing International Division of Labor in Manufactured Goods</td>
<td>B. Balassa</td>
</tr>
<tr>
<td>330</td>
<td>Application of Shadow Pricing to Country Economic Analysis with an Illustration</td>
<td>L. Squire</td>
</tr>
<tr>
<td></td>
<td>from Pakistan</td>
<td>I.M.D. Little</td>
</tr>
<tr>
<td></td>
<td></td>
<td>M. Durdag</td>
</tr>
<tr>
<td>331</td>
<td>A Survey of the Fertilizer Sector in India</td>
<td>B. Bumb (consultant)</td>
</tr>
<tr>
<td>332</td>
<td>Monitoring and Evaluation in the PIDER Rural Development Project - Mexico</td>
<td>M. Cernea</td>
</tr>
<tr>
<td>333</td>
<td>Determinants of Private Industrial Investment in India</td>
<td>A. Pinell-Siles</td>
</tr>
<tr>
<td>334</td>
<td>The &quot;Graduation&quot; Issue in Trade Policy Toward LDCs</td>
<td>I. Frank (consultant)</td>
</tr>
<tr>
<td>335</td>
<td>Balancing Trickle Down and Basic Needs Strategies: Income Distribution Issues</td>
<td>M. Selowsky</td>
</tr>
<tr>
<td></td>
<td>in Large Middle-Income Countries with Special Reference to Latin America</td>
<td></td>
</tr>
<tr>
<td>336</td>
<td>Labor Force, Employment and Labor Markets in the Course of Economic Development</td>
<td>L. Squire</td>
</tr>
<tr>
<td>337</td>
<td>The Population of Thailand: Its Growth and Welfare</td>
<td>S. Cochrane</td>
</tr>
<tr>
<td>338</td>
<td>Capital Market Imperfections and Economic Development</td>
<td>V.V. Bhatt,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>A.R. Roe</td>
</tr>
<tr>
<td>339</td>
<td>Behaviour of Foodgrain Production and Consumption in India, 1960-77</td>
<td>J. Sarma</td>
</tr>
<tr>
<td></td>
<td></td>
<td>S. Roy</td>
</tr>
<tr>
<td>340</td>
<td>Electric Power Pricing Policy</td>
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</tr>
</tbody>
</table>
State intervention in the industrialization of developing countries: