

IIM

BANGALORE

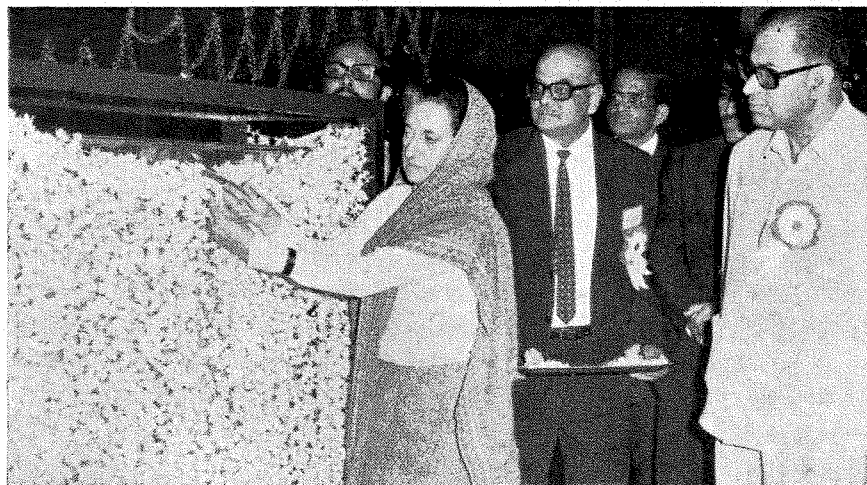
BULLETIN

THE INSTITUTE

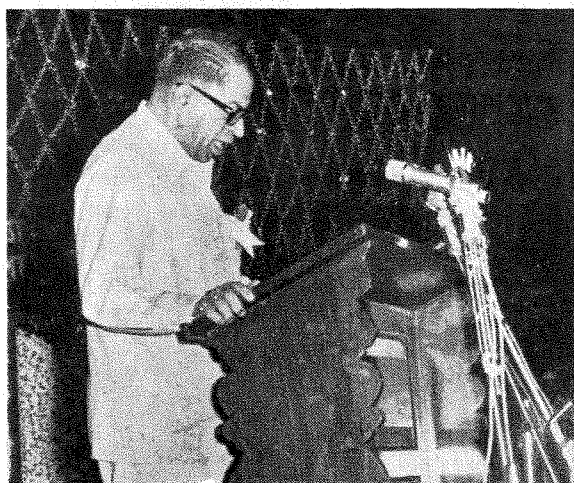
There has been a significant growth in the Public Sector activity at the Centre as well as the State levels since the beginning of the Second Plan and now it is controlling the commanding heights of the national economy. As an instrument in implementing the national policy of increasing productivity, the Public Sector has a dual role to play: one of achieving internal efficiency so as to grow from strength to strength from within and, secondly, a national responsibility of building its activities on socially desirable lines. Fulfilment of such tasks calls for varied types of managerial talent at various levels in the Public Sector, in addition to the understanding of management principles *vis-a-vis* the national goals. Public Sector Managers, therefore, can function efficiently only if they have this total national perspective.

With these objectives in view, the Indian Institute of Management was established in Bangalore through the Union Ministry of Education and with the support of the Government of Karnataka. The Institute was inaugurated by Mrs. Indira Gandhi, the Prime Minister, in October, 1973.

IIMB, like the other two Management Institutes in Calcutta and Ahmedabad, aims at augmenting the nation's management resources through programmes of study, research, training and extension seminars, but with a slight difference in its approach. It is oriented to meet the management needs of Public Sector Undertakings and the related nationally relevant priority sectors like agriculture, heavy industry, energy, transportation, health and rural development. In keeping with these perspectives, the Institute has developed its curriculum and courses. In effect, IIMB is being developed as a Management Institute for the Public Sector in India.



The Indian Institute of Management, Bangalore, was inaugurated by the Prime Minister, Mrs. Indira Gandhi, on Sunday, October 28, 1973. The Chairman of the Board of Governors, Shri T. A. Pai, welcomed the gathering and spoke on the perspectives of the Institute. The Chief Minister of Karnataka, Shri Devaraj Urs, presided over the Inaugural function.



EDITORIAL

This *Bulletin* is the first official publication of the Indian Institute of Management, Bangalore. Through it, we introduce ourselves to readers in the management world. Being an Introduction, this issue of the *Bulletin* contains some information about us: our perspectives, our programmes, our research efforts, our hopes.

This is also the place to introduce our policy with respect to coming publications.

We will publish the results of our research efforts. All our manuscripts will be referred by persons who are specialists in the area concerned. By and large, our referees will be external. The Institute's Publications Committee makes the final decision with respect of publication strictly on the basis of the referees' comments and recommendations. In this way we hope to publish only such work as merits professional discussion. Only in this manner, we believe, can high standards of quality be maintained.

This *Bulletin*, in addition to information about us, contains an essay on the long term growth prospects of the Indian economy by Mr. V. Srinivasan, a member of our Research staff. It is, we hope, an earnest of things to come.

In the pages of this *Bulletin* we will share our ideas with you. We invite you, our readers, to share your reactions with us.

Vinod Vyasulu
Chairman for Publications

PERSPECTIVES*

The development of professional management has taken rapid strides in India in the last decade. India trains about a thousand management graduates a year. But the task of providing managerial input for a country of 550 million people is colossal. Much more needs to be done. We look ahead to making our humble contribution in meeting this challenge. Though a National Institute we hope to take special interest in the problems of the southern states.

We would make an attempt to be self-reliant as much as possible. No collaboration with any foreign institution is envisaged at the present time. However, we would be having co-operative links with sister institutions in India and abroad. Presently our efforts are concentrated in assembling the man-power and physical facilities that are needed. We plan to have an academic strength of fifteen by the end of this year and about thirty by the middle of 1974. When fully developed we plan to have an academic community of about a hundred. We would be conducting a few short courses, seminars and surveys during the next few months. We hope to start the post-graduate programme in July next year.

Temporarily we are located at 33, Langford Road. Our Institute will be residential, and the campus construction will commence next year. Meanwhile, interim arrangements have been made for our activities. It is expected that an outlay of about three crore rupees would be made in the next few years on this Institute by the Central Government. The State Government will be providing the land and necessary funds for land development.

We would like to be complementary to the present efforts in the field of management in the country. Generally speaking, we would like to enter into areas where not much work has been done yet. An overview of the Indian scene shows that most of the management input has so far gone to the business and industrial sectors and, to some extent, to utilities and central administration. Our efforts would be an attempt to bring modern management into these hitherto neglected

* From the addresses of the Chairman, Shri T. A. Pai, and the Director, Shri N. S. Ramaswamy, on October 28, 1973 when the Institute was inaugurated by Mrs. Indira Gandhi, Prime Minister of India.

areas. It is observed that most of the management graduates have, due to one reason or other, tended to opt for the private sector. In the light of the importance of the public sector, it is proposed to run special programmes to meet their requirements.

Agriculture is the largest sector of our economy employing 150 million people and accounting for about 50 per cent of our total GNP. Yet, in the vital problem areas of production, procurement and distribution, modern management has done almost no work. It will be our endeavour to get involved in agriculture, animal husbandry, fisheries and allied operations.

Utilities and services sectors not only affect the production sector of the economy, but also affect us directly. Only marginal work has been done so far in this area. We would like to do work in areas such as housing and construction, transport and communications, irrigation and power, credit and insurance, R & D and education, health services and family planning, hotels and tourism, etc. It seems that the organisation of, and systems in most of these establishments have remained unchanged since Colonial days. This has not only affected the efficiency seriously, but also rendered them insensitive to the changing needs of the people.

Governmental organisations and the decision making processes—originally designed for the regulatory needs of an alien power—are totally unsuited to the current role of the government as an agent for social and economic progress. Relatively speaking, State and Local administration appear to be weaker. Considering the inertia and urgency for reorientation, a great deal of effort is called for in this area.

We have failed to achieve some of our targets not so much because of faulty planning, but because of our inability to implement the programmes in time. We propose to run programmes to equip people with necessary know how and skills to work in Central and State Planning Commissions, as well as in District Planning Administration to accelerate the implementation process.

India has accepted the democratic process for economic and social change. In our set up the political processes are extremely important. However, unfortunately, professionals of all categories do not have an appreciation of its importance. At the other end, some of the political leaders do not appear to have

an awareness of the tremendous potential of science and technology and management. Our effort will be to narrow this gap.

With these perspectives in view, plan to have the following types of programmes:

- * Graduate level programme for business and industry, district, planning administration, agriculture and the like
- * Special programmes for the various utilities and services sectors
- * In-service training programmes
- * A Doctoral programme
- * Programme for training of trainers
- * Seminars and conference for political leaders and trade unionists, etc. etc.

In addition to the above, we plan to have divisions for applied and policy research, consultancy, entrepreneurial development, management information systems, urban affairs and publications.

The Board of Governors, Director, Faculty and Staff of this Institute are committed to a long and fruitful service to the nation. We look forward to the cooperation and good will of you all.

INAUGURAL ADDRESS

SMT. INDIRA GANDHI
Prime Minister of India

On Sunday, the 28th October 1973

Shri Pai, Professor Ramaswamy, Distinguished Guests,

Before I begin, I should like to thank Mrs. Parvathi Mahadevan and party for the very beautiful rendering of the invocation slokas. It is always a great pleasure to come to Bangalore. It is a city which, I do not have to tell you, is renowned for its beauty. But it is also an important centre of industrial production and the home of many industrial complexes, which involve advanced technology.

I don't think that Bangalore can complain of not having sufficient institutions and factories and so on. In fact, many people complain that there are already too many of them, affecting their comfort and pleasure. But it is appropriate that the city should have the Institute of Management to train managers for whom there is an increasing need in our complex economy. The importance of management does not have to be explained to an audience consisting largely of professional managers. It is widely recognised that modern managerial practices are indispensable for industrial and economic growth and modernisation. The phrase "managerial revolution" came into being some 40 years ago. However, it acquired certain ideological overtones and was used to advance a defence of capitalism. We need not go into this question except to point out that theories of management, which has been developed in other political systems, cannot have wholesale and automatic application in ours. Nor should we be expected to change our political system to suit the test of managerial efficiency applied in the United States of America or Western Europe.

The Director of this new Institute, Prof. Ramaswamy, sent me an interesting paper. I agree with him that ours is an undermanaged society and that management is one of the inputs for achieving economic development. I am glad that he has gone further and stressed the point often ignored by professionals who tend to think of themselves as political experts. He has stressed the importance

of their understanding the political process of the country, of being in tune with them, and of being involved in socially relevant activities. He has rightly stated that Indian management has not concentrated on primary needs of the people like food, housing, health and on the development of administrative skills to mobilise people for productive functions. But so far most of the institutions of management, as Mr. Pai has also pointed out, have not given sufficient thought to this problem. These institutions have attracted some exceptionally gifted and talented young men and women and have trained them to be good managers. The head of one Institute once proclaimed with great pride that the average salary of their graduates are nearly one thousand rupees per month. I am glad, but also somewhat sad to hear that. Were these institutions only for the salary market, like other institutions? This indicates that the products of these special institutions join on the private rather than the public sector at a time when the needs of the latter for managerial skills are so vital. I wonder also whether those who were trained from these institutions consider higher salary of greater importance than the nature of work or the acceptance of hard challenges. The country's need is for people who will take risks who will accept challenges, who will not seek comforts, security, and high pay. People of undoubted talent tell us that they find better return and greater appreciation and more congenial conditions of work outside the country. No doubt such conditions were created by pioneers who risked defeat and failure even their lives. We in India are still in such a stage where pioneering spirit is of vital importance.

During the colonial period a few openings were available but employment was equated with security. The rule makers spent time and energy in making the new method of security yet more secure. Also, government employment was identified with authority rather than service. Since freedom, we have a number of new services. They are manned by bright men and women but the spirit of service is not always conspicuous.

The last few months have seen a vigorous controversy raging over the relative importance of generalists and specialists. I have declared time and again that in order to achieve progress, we should learn to make better use of our specialists. I do not respect hierarchy nor have I hesitated to appoint specialists as administrative heads of Ministries and place them in positions of authority. All generalists are not mere revenue and law and order people. The very complexity of administration is compelling them to gain new kinds of competence. The test is to find the best person for any job. The present controversy is somewhat sterile.

The other day, when I came last to Bangalore, I read an article by Mr. Krishna Pillai on this subject, in which he quoted Dr. Johnson "Who is more intelligent-men or women?" Dr. Johnson replied, "which men and which women?" We can say the same about generalists and specialists, that is not a question of a particular class or a group of people but the individual within.

Our experience is that the generalists and specialists both tend to be somewhat bureaucratic when they come into the system. The specialists are not more assiduous than the generalists when suggesting new approaches to administration, new ways of getting things done, new ways of economisation. Both are subject to human feelings, feuds, hatred and jealousies, and narrow mindedness. These are not diminished in new institutions headed by specialists. There should be an interweaving of the competence and administrative abilities of trained generalists and of skills of specialists. In a fabric of a modern administration the two are like the warp the woof. The important issue is to evolve a system by which we are able to get the best out of our personnel and to ensure that the entire administration, specially the level at which it comes in direct touch with the people, is imbued with a sense of service and understanding. We do not want mere officers but competent and creative human beings. All our training procedures, whether for generalists or specialist need to be improved. They must have the insight of modern management and a lively sense of the social context in which we live. We take it for granted that a person who is brilliant at 25 will continue to be so at 45 or 50, or that the person who has done well in one task will naturally be able to tackle another. No allowance is made for degeneration and slackness on the one hand and for late flowering on the other. Many do learn on the job but many also lose the habit of learning. Merit is desirable but it should not breed arrogance or complacency. In my view, no one outgrows the need for specialised training and refresher courses at various stages. There should be vertical and horizontal mobility. In scientific research, in most branches of technology, in medicine and in the social sciences side by side with greater specialisation, there is also a trend towards greater interdisciplinary approaches and administration cannot be an exception. It is specially important for public sector enterprises to have the psychology of service. A large part of the nation's resources is committed to the public sector enterprises. Much of our hope in building up a dynamic economy centres on them but the workers and managers of the public sector factories are still to develop a special ethos, a special pride, a special sense of identification with their institutions. Mahatma Gandhi counselled capitalists to culti-

vate a feeling that they were the trustees of the people, but very few of them have even made the attempt. But public sector institutions are IN FACT public trusts.

I have also been reading about the political management course which is to be introduced here. There is no doubt that professionals and technocrats must develop keen appreciation of our political process and that in turn the political leaders should have more intimate awareness of technological facts and acquire the ability to utilise the techniques of management. Most of our institutions, political or otherwise, are run on antiquated lines. We must begin to function in a modern and rational manner but we should be careful not to fall prey to gadgetry. The accumulation of large amount of facts and data has not always led to any greater wisdom or better judgement. To the professional managers, I should like to say that while we need their talent to manage our resources, potentialities and opportunities in a more purposeful way, people do not normally relish being managed. But as long as managers bear in mind that they have to serve men they will be on the right line. All this is part of education.

I have great pleasure in inaugurating the Indian Institute of Management in Bangalore and I should like to give to all those concerned my good wishes for its future success.

CONSTRAINTS ON THE LONG TERM GROWTH PROCESS IN THE INDIAN ECONOMY

V. SRINIVASAN *

Economics as a separate science is unrealistic and misleading if taken as a guide in practice. It is one element—a very important element, it is true—in a wider study, the science of power.

Bertrand Russell

The long term growth process in the Indian economy could be viewed in terms of trends in aggregate savings and capital coefficients. However such Harrod-Domar model type approach so popular with ¹Neoclassical economists has very little explanatory value even when considered in the context of advanced Western economic growth experience precisely because it disregards the locus of power and its dynamics within an institutional framework. Trends in national income, capital, savings and efficiency co-efficients are to be viewed as manifestations of a socio-economic system. The end of a socio-economic system must be the improvement of social welfare which at least in part implies the maximisation of the present discounted value of aggregate consumption over time. This seemingly simple objective subsumes quite a complex set of inter-relationships. These inter-relationships can be appreciated when we consider the institutional constraints which define boundaries around the social welfare objective. The approach to identify institutional constraints involves going beyond the concepts of savings and productivity ratios in analysing the long term growth profile. In optimisation terms one could even question the logic of specifying the constraint set in purely technological input—output terms subject to capital and efficiency constraints. Viewing the Indian economy in the context of long run trends it appears that the progress of the socio-economic system towards the goal of social welfare is very much dependent on the resolution of institutional constraints which find expres-

* Research Assistant, IIMB. Discussions with Vinod Vyasulu, Bharat Jhunjhunwala and Jaspal Singh have been useful. Responsibility for the views in the paper is mine.

sion in the power structure. The utility of this approach is that it identifies the forces underlying the growth process and reveals the futility of certain policies purely aimed at solving problems that appear to be technological in nature.

This technocratic approach to specification of constraints on growth process is illustrated by certain policy exercises both in India as well as abroad. As Chakravarty² poses the problem, "Maximise a certain preference function, e.g. value of national income subject to a specification of technology and a prescribed level of primary factors including foreign exchange availability." What this means is that the constraints on growth process are internal savings reflected in the form of domestic embodied capital formation and foreign savings in the form of foreign exchange availability. This is also the sum and substance of the so-called "Theory of the Two gaps" presented by the Organisation for Economic Co-operation and Development.⁴ Another instance is Ashok Mitra identifying the 'basic' constraints.³ In a recent writeup he says "If economic growth has been disappointing, it is not simply on account of the wars fought or the failure of rains, but because of—as I would argue later—more basic factors such as, for example (a) savings having either shrunk or not grown in a satisfactory manner, and (b) the deployment of savings for capital formation being less than optimal". It is significant that an avid student of Indian Planning Dr. K. N. Raj has stated that "Planning in India has also been tending to become more and more a technocratic exercise".⁵ Given the socio-economic power structure that this is the natural outcome of a planning process is a fact which would be overlooked by a specialist charmed by planning techniques. The conventional method of bringing out the constraints or obstacles to economic development is well brought out by Hirschman.⁶ "The traditional method of identifying an obstacle to development points immediately to the conceptual weakness we have in mind. The method consists in looking up the history of one or several economically advanced countries, noting certain situations that were present at about the time when development was brought actively under way in one or several of these countries, and then construing the *absence* of any of these situations as an obstacle to development".⁷ This method of examining the growth process and growth constraints on developing countries in the light of advanced nation's economic history ignores socio-economic factors of these countries and also certain processes which enabled the so-called developed countries to grow at the expense of the present underdeveloped countries. It is no doubt essential to examine the specific socio-economic characteristics with a view to find out the specific obstacles to development.

Power in a socio-economic context is the starting point for identifying the constellation of constraints on the growth process in the Indian economy. The clue to this approach is given by Paul Baran who as far back as 1957 stated that "Economic development has always been propelled by classes and groups interested in a new economic and social order, has always been opposed and obstructed by those interested in the preservation of the status quo, rooted in and deriving innumerable benefits and habits of thought from the existing fabric of society, the prevailing mores, customs and institutions".⁸ The implication is that certain classes operating within a social system have the power to counteract the forces of economic development. Whereas one recognises the importance of power structure it is necessary to bring out the *modus operandi* by which this power structure contributes to stagnation and pseudo development. The social classes which derive their power on account of their ownership and control over property dictate the pattern of income distribution, and consequently the pattern and organisation of production. Our planning process is subject to this comprehensive structural constraint. This point has been well noted by Mahbub Ul Haq who says that "We have a number of case studies by now which show how illusory it was to hope that the fruits of growth could be redistributed without reorganising the pattern of production and investment first. Many fast growing economies in Latin America illustrate this point. In my own country, Pakistan, the very institutions we created for promoting faster growth and capital accumulation later frustrated all our attempts for better distribution and greater social justice. I am afraid that the evidence is unmistakable and the conclusion is inescapable: divorce between production and distribution policies is false and dangerous. The distribution policies must be built into the very pattern and organisation of production".⁹ It is indeed very significant to note that no planning document in India envisages the need for structural change in property relations as an essential precondition for effective planning. Ultimately the classes which obstruct economic development hamper the growth process by accumulating and allocating resources in disregard of social needs. While we should recognise the impact of socio-economic power structure on the economic base it is important to recognise that power relations have different dimensions. It is far from easy to indicate very minutely the base, the means the scope and the amount of power.¹⁰ As Ranjit Sau pointedly states that "In ultimate analysis, the dynamics of economic system is determined by the prevailing class relations". In this perspective, let us focus on Indian growth experience. If one considers the average growth rates over the past two decades a dismal picture emerges. Sharp reductions in average annual growth rates particularly in mid sixties were sought to be explained, in terms of a series of droughts.

TABLE 1

| | Average Annual Rates of Growth | | | |
|--|--|---------|---------|--------------------------|
| | 1954-55 to 1964-65 | 1965-66 | 1966-67 | 1967-68 to 1973-74 |
| Net Domestic Product (1960-61 prices) | 4.3 | - 5.1 | 1.2 | 2.9 |
| — NDP in Primary sector | 2.5 | -13.2 | -1.5 | 1.8 |
| — NDP in Secondary sector | 7.2 | 2.5 | 3.3 | 2.6 |
| — NDP in Tertiary sector | 7.0 | 2.8 | 3.2 | 4.5 |
| Per Capita National Income | 2.1 | - 7.3 | -0.8 | 0.6 |
| | Percentage of NDP at Current Market Prices | | | |
| | 1960-61 to 1964-65 | 1965-66 | 1966-67 | 1967-68 to 1972-73 |
| Investment | | | | |
| Net Domestic Capital | | | | |
| Formation | 12.0 | 13.8 | 15.5 | 12.2 |
| Net Fixed Investments | 10.9 | 12.7 | 12.3 | 11.7 |
| Net Public fixed investment | 7.0 | 8.0 | 6.8 | 5.7 |
| Net Private Fixed Investment | 3.9 | 4.7 | 5.8 | 6.0 |
| Savings | | | | |
| Net Domestic Savings | 9.2 | 11.2 | 11.9 | 10.9 |
| Net Foreign Inflow | 2.8 | 2.6 | 3.6 | 1.3 |

Source: Montek Ahluwalia, Chief Income Distribution Division World Bank's Development Research Centre, 'Diminished Role' in Seminar, Sept. 1975, P. 19.

This is an obviously oversimplification and we should focus our attention on the underlying trend factors between 1954-55 to 1964-65 and 1967-68 to 1973-74.

The National domestic product whose average annual rate of growth between 1954-55 to 1964-65 was 4.3 per cent decreased by 1.4 per cent between 1967-68 and 1973-74. Despite the consideration of green revolution, the average annual growth rate of domestic product in primary sector which was 2.5 per cent in the

TABLE 2
Income Distribution in India-Gini Coefficient

| | | | Consumption | Income |
|----------|------|------|-------------|--------|
| PAKISTAN | | | | |
| 1963-64 | .... | .... | .... | .381 |
| 1966-67 | .... | .... | .337 | .365 |
| INDIA | | | | |
| 1951-55 | .... | .... | .371 | .... |
| 1955-60 | .... | .... | .392 | .... |

Source: Javaid Azfar, Unpublished Ph.D. dissertation, Harvard University, quoted in *Distribution of Income, Wealth, and Power*, Gustav F. Papanek, P. 86: *Economic Growth in Developing Countries* edited by Yohanan Ramathi.

decade 1954-55, to 1964-65 came down to 1.8 per cent in the decade 1967-68 to 1973-74. What is of course viewed with relatively greater concern by the planner is the somewhat drastic decline in the average growth rate of the industrial sector from 7.2 per cent in the first period to 2.6 in the second period. The relative rate of savings in the overall economy indicated by the extent of net savings and net capital formation shows a virtual stagnancy around the 10 per cent rate. The trend in social welfare index whether expressed in terms of overall income distribution, or the access to wage goods indicates unsatisfactory results. Some indication of worsening inequality in incomes is indicated in the estimates in Table 2.

Any attempt to conceptualise these trends could use the classical statistical methodology of hypothesis testing within the quantitative model building framework. This procedure revolves round to superimposing the measurable elements in economic models on these long term economic trends and ultimately on the basis of certain subjective confidence bounds deciding upon the explanatory power of an economic model. The bewildering complexities involved in a socio-economic system render this kind of quantitative approach virtually ineffective so much so that the econometricians themselves try to tackle these formidable issues under the guise of multicollinearity and autocorrelation. Alternatively on an intuitive basis a comparison between economic models and these trends could be made with a view to decide which model 'fits' best with these trends. In an exercise

aimed at analytically crystalising these trends, Chakravorthy considers a number of post-war economic models built on constant savings co-efficient assumption and brings out their irrelevance to our condition.¹¹ In his attempt to find a framework of analysis he selects Lewis surplus labour model and tries to relate certain aspects of the model to the observed trends in the Indian economy. ¹²He states that "a conceptual model which is applicable to structural conditions prevailing in the Indian economy is not easy to spell out". It appears that a methodology which tries to explain what is admittedly a very complex phenomena with many qualitative interfaces in terms of a set of quantitative functional relations is not a promising approach. The motivation for model fitting exercise is apparently to gain insight and finally control over economic forces. The basic drawback of this approach is that it tries to comprehend the realities of an economic system which is one sub-system of the broader social universe without trying to go beyond the economic sub-system. A fruitful approach to understand the economic reality is to view economic problems from the stand-point of larger social system and face the impact of the broader social system on the economic sub-system.

One critique of planning which has gained academic respectability, but the basis of which has to be scrutinised a little more carefully is that the planning process through faulty strategy has resulted in malallocation of investment resources with the consequent inefficient utilisation of resources, the social costs have been out-stripping the social benefits. As evidence of expanding social costs we find that the utilisation ratio of the manufacturing productive capacity has declined from 87.9 in 1960-65 to 79.6 in 1968-72. See Table 3.

TABLE 3

| Potential Utilisation Ratios | (Percentages) | | | |
|------------------------------|---------------|------|------|-----------|
| | 1960-1965 | 1966 | 1967 | 1968-1972 |
| All Manufacturing: | 87.9 | 83.2 | 89.9 | 79.6 |
| Basic Industries | 97.5 | 85.2 | 80.8 | 83.7 |
| Capital Goods | 81.9 | 69.4 | 63.5 | 59.5 |
| Intermediate Goods | 89.3 | 83.3 | 83.2 | 80.3 |
| Consumer Goods | 88.8 | 86.6 | 81.9 | 83.7 |

Source: Montek Ahluwalia, Chief Income Distribution Division World Bank's Development Research Centre, 'Diminished Role' in Seminar, Sept. 1975, P. 23.

Interestingly the decline in the utilisation of consumer goods industry capacity is very much less than the utilisation of capital goods industry productive capacity. A related argument which is advanced is that declining efficiency in the resource use is indicated by the overall increase in the aggregate net incremental capital—output ratio which was 1.7 and 2.6 in the first two plans and which rose to 2.9 in the third plan. See Table 4.

TABLE 4
SECTOR AND AGGREGATE NET INCREMENTAL CAPITAL—OUTPUT
RATIOS WITH ONE YEAR TIME LAG IN 1967—68 PRICES

| Sector | 1 Plan | 2 Plan | 3 Plan | 4 Plan (a) | 4 Plan (b) |
|---|--------|--------|--------|---------------|---------------|
| 1. Agriculture and Allied sectors | 1.1 | 2.6 | 2.3 | 1.7 | 1.8 |
| 2. Mining, Manufacturing and Construction | 1.5 | 3.8 | 3.0 | 4.3 | 4.2 |
| 3. Transport and Communication | 5.8 | 5.2 | 5.9 | 6.6 | 6.8 |
| 4. Aggregate (based on actual NDP) | 1.5 | 2.7 | 2.2 | 2.8 | 2.3 |
| 5. Aggregate based on actual NDP) | 1.7 | 2.6 | 2.9 | .... | .... |

Notes:—(1) Definitions of investment and output increments are as follows:*

| | Investment | Output |
|----------|--------------------|----------------------|
| I Plan | 1951-52 to 1955-56 | 1956-57 over 1951-52 |
| II Plan | 1956-57 to 1960-61 | 1961-62 over 1956-57 |
| III Plan | 1960-61 to 1963-64 | 1964-65 over 1960-61 |
| IV Plan | 1969-70 to 1973-74 | 1974-75 over 1969-70 |

(2) Details of assumptions regarding the IV Plan (page reference pertain to the Draft Fourth Plan).

Source: B. S. Minhas, Planning and the Poor, S. Chand and Company

- (i) Assumption (a) 3.0% growth rate of NDP between 1967-68 and 1968-69 (P. 15) and the implied Plan growth rate of 5.8% between 1968-69 and 1969-70.

Assumption (b) 5.5% plan growth rate (P. 29) between 1968-69 and 1969-70 and implied 4.4% between 1967-68 and 1968-69.

Assumption for getting the sectoral and aggregate NDP for 1969-70.

- (3) Exponential trend equation for NDP is given by $\log(\text{NDP}) = 9.0947 + 0.03671t$; $R^2 = 0.9831$.

In retrospect we have to concede that the pattern of economic development has worked in such a way that most of the internal savings and external savings have gone into industry, transport and power. Since the Second Five Year Plan basic and heavy industries have held the central place in plan priorities. That an alternative strategy which concentrates on channelising resources to agriculture, rural development, decentralised industry with stress on removing regional imbalances would have been more in line with our resource endowments and capacities is not in question. The relevant question is not what is the appropriate strategy from the view point of social welfare maximisation but which strategy is most appropriate from the standpoint of a class structure? Planning strategy and the consequent set of policies do not issue out of technological deliberations but they bear a strong imprint of the class structure. Aditya Mukherjee¹³ in this context throws a revealing light on the role of Indian capitalist class in moulding the plan strategy. He quotes a key section of the "Bombay Plan" of 1945: "In carrying out the stages of development, we shall have to pay special attention to basic industries...on those industries will depend the development not only of all other industries but of the whole economic life of the country." This shows the thinking process embodied in a dominant class which strongly desired state capitalism to underpin its development. It is hardly a coincidence that the Mahalanobis model very substantially reflected this heavy industry logic. The issue of malallocation of resources was vigorously debated in second and third plan periods and has again come into focus in the fifth plan strategy debate centering around the charge of neglect of agricultural sector. The issue involved in this is that on an apriori basis a deliberate strategy of creating increasing productive potential in the industrial sector has been socially an inefficient choice, by implication this wrong strategy has been a constraint on the growth process.

As a starting point the interlinks between the industrial and the agricultural sector could be scrutinized with a view to understand the industrial stagnation. We can also consider the power constellation in the agricultural sector and its consequences for the agricultural and industrial growth rates. The waning euphoria about green revolution is intimately linked to the stagflation situation. A study of the industrial structure indicates that about 50 per cent of them are in the agro-industries group. The adverse terms of trade against the agriculture result in the mark-up of prices of agricultural raw materials used in the industries and the food supplies to the industrial sector. The consequent escalation of unit costs and wages in the industrial sector results in the reduction of corporate surpluses. Paradoxically even if the level of agricultural incomes increase its multiplier impact will not be of a high order in view of the skewed income accuals, which is a reflection of land ownership. It is the institutional factors in the agricultural sector which act as a constraint on the expansion of the industrial sector, and the outward manifestation of which is the limited demand for industrial goods.

The above analysis indicates how the methodology of artificial segregation that is the attempt to analytically separate the economic system from the over-all socio-economic system could result in an incorrect identification of constraints. This takes us to an analysis of the role of primary sector in the growth process and its institutional setting. The institutional constraint in the agricultural sector has taken a more acute form since sixties particularly after 'Green Revolution'. Along with the decelerating trend in the agricultural growth, we observe rising fluctuations over time. The heavy concentration of land holdings and the marginal impact of land reforms show the locus of power.

In analysing the failure of wheat procurement measure the Economic Survey in 1973 revealingly states that 'it is also obvious that the active opposition of landed interests and private traders, and a lack of effective administrative arrangement in some states, hampered the procurement effort. However, the fact that shortfall in procurement was lower in a state like Punjab, where costs of cultivation tend to be higher than in any other States, suggests that the unsatisfactory performance of procurement cannot be adequately explained by reference to the alleged unremunerativeness of procurement prices'. That the so called attempts at self-reliance primarily in the industrial sector have only resulted in increasing dependence for our food needs is clear when we see a jump in imports from 12 million tonnes during the first plan to 26 million tonnes during third plan.

TABLE 5
Net Imports of Food-grains in million tonnes*

| | | |
|--------------------|------|------|
| I Plan | .... | 12.0 |
| II Plan | .... | 17.0 |
| III Plan | .... | 26.0 |
| 1966-67 to 1968-69 | .... | 25.0 |
| 1973 | .... | 3.7 |
| 1974 | .... | 4.8 |

One should examine to what extent the policies designed to promote the extent of agricultural surplus which is in a set of hands who have monopolistic control over marketable surplus will have favourable impact. The question arises whether there is a mechanism in the agricultural system to penalise the non-use or inefficient use of land. So far as the operative land-holdings are concentrated in a few hands who in view of monopoly control over the output have no dominant incentive to use the land efficiently it is difficult to improve the productivity on land without impinging on the ownership pattern.

Experience of different countries in regard to growth process has shown that the primary sector funds considerable surpluses into the industrial sector towards the achievement of high growth rates. The resource transfer from the primary sector takes different forms such as the adverse terms of trade against it and substantial drain of resources through high rates of taxation on different bases. The proposition that the tax efforts have not even touched the fringe of resources in the rural sector is well established in the studies on the subject. Neither the terms of trade nor the income terms of trade show bias in favour of the industrial sector. See Table 6.

The power configuration in the rural sector has had significant impact on the agricultural price policy. The policy of encouraging production in the agricultural sector strengthens the power base of the rural rich. The monopoly control over marketable surpluses seems to have accentuated in the sixties. The question arises about the analytical value of regarding surplus or wage-goods as a constraint on economic development. B. S. Minhas for instance says that "Food and agriculture-based necessities of life have become a binding constraint on further growth and

* Source: B. S. Minhas, Self-reliance, Seminar, Feb. 1976, P. 2.

TABLE 6

INTERSECTORAL TERMS OF TRADE 1951-52 to 1972-73
(1960-61)
-100

| | |
|---------|--------|
| 1951-52 | 100.72 |
| 1952-53 | 99.13 |
| 1953-54 | 103.74 |
| 1954-55 | 97.02 |
| 1955-56 | 94.78 |
| 1956-57 | 102.46 |
| 1957-58 | 98.46 |
| 1958-59 | 101.66 |
| 1959-60 | 101.68 |
| 1960-61 | 100.00 |
| 1961-62 | 100.69 |
| 1962-63 | 99.09 |
| 1963-64 | 97.39 |
| 1964-65 | 108.66 |
| 1965-66 | 114.57 |
| 1966-67 | 123.07 |
| 1967-68 | 125.02 |
| 1968-69 | 116.27 |
| 1969-70 | 125.72 |
| 1970-71 | 127.32 |
| 1971-72 | 119.37 |
| 1972-73 | 119.60 |

Source: S. Chakravorthy: "REFLECTIONS ON THE GROWTH PROCESS IN THE INDIAN ECONOMY" 1974 Mineographed. For the data relating to the years 1951-52 to 1965-66, see Thamrajshi, R. Intersectoral terms of trade and marketed surplus of Agricultural produce—1951-52 to 1965-66. Economic and Political Weekly, June 1969, reprinted in Agricultural Development in Developing countries—Comparative Experience—Indian Society of Agricultural Economics, Bombay 1972.

industrial development in India".¹⁴ But as has been argued this method of identifying the constraints deflects our attention from central issues. More relevant for consideration is the role of rural power elite, its mode of exercising the power and its impact on price policy and its ability to resist resource mobilization or nullify land reforms or defeat any socialization measure. It appears that the value of any strategy in terms of achieving the goal of socio-economic welfare very much depends on the forces that impinge on this power constraint.

An attempt to diagnose the industrial system in terms of over capitalization, import dependancy and high cost is done by some economists.¹⁵ The wrong track here is to identify industrial policy as an implied constraint. The monopoly strength of the corporate sector as evidenced in the operation of licensing, tariff and price policies is a reflection of the power of the corporate elite. It also does not appear very revealing to focus the blame on the bureaucracy since to what extent bureaucracy can perform towards the social goals depends on the linkages of bureaucracy to the overall socio-economic system. In this sector, the requirements of capital and modern technology have expanded rapidly. An outcome of this is a rise in the trend rate of growth in capital-labour ratio at constant prices by about 9.6 per cent per annum between 1946-64.¹⁶ The trends in regard to employment of 'Productive labour' are interesting when we find that outside the agricultural sector the most important sanctuary for 'employment' is the tertiary sector whereas the secondary sector which accounts for 33 per cent of non-industrial employment is barely expanding the employment potential.

If we consider the disposition of surpluses both in the corporate and in the top echelons of the agricultural sector, one gets a respect for the classical western prototype capitalist whose motto was to accumulate and accumulate. Undoubtedly the luxury consumption goods sector is one branch of the economy which has by and large stood the economic vicissitudes. The growth rate of this sector is highly respectable. A study by this author based even on the limited A.S.I. data indicates that if the present trends continue, the growth rate in this sector is likely to be 35 per cent by the end of V Plan period.¹⁷ One clue to the stagnancy of the resources situation is the high growth rate of this sector till recently fed by bureaucrat-smuggler alliance.

The question of resources for the growth process, the mode of utilisation of resources or the technology employed or the pattern of growth process itself in the secondary sector depends upon the institutional power of the corporate and

the rural elite. As Baran says "Both (i.e., the size and mode of utilization of economic surplus) are essentially determined by the degree to which society's productive resources have been developed, and by the social structure within which the productive process unfolds". It is relevant to consider here the extent to which there is choice in the adoption of technology in our economy. There are extreme positions such as the one taken by Leontief who holds the view that "...the choice of alternative technologies hardly exists".¹⁸ The implication of this line of argument is that the technology in the efficiency sense is an universal constant and that the context of socio-economic system is not much of a relevant factor. One cannot overlook the strong impact of institutionally determined income distribution and demand pattern on the development of technology. The proportion and rate of use of economic resources is crucially related to the consumption pattern of the elite. While one should recognize the intimate interaction between technology and the socio-economic system it is difficult to ignore the social impact on the technological process. The effect of institutional factors on technological development can be seen in the elite consumption sector where the technological pattern reflects the income distribution structure.

The central force of any economy is the quantum of surplus generated but the social significance of the surplus lies in the mode of generation of this surplus and the disposition of the surplus. As per the indications given the generation of surplus in the Indian economy has not been spectacular but it is interesting to observe that in the corporate sector while profit rate has been maintained the real wage rate of the factory workers has remained constant. The share of wages and salaries has declined from 65.0 in 1949 to 53.3 in 1969.¹⁹ Available evidence on the agricultural sector reveals that if anything the income share of the rural poor made up of the landless labourers and the small and marginal farmers has gone down while the share of rich peasants and landlords has increased. One could postulate based on these trends how the relative power positions of different classes have emerged and the implications for the growth process.

The conventional methodology of abstracting an economic system from the overall socio-economic system and 'analysing the economic system from the view point of identifying its constraints leads to 'logical solutions' approach. The appeal of this approach is evident when we see voluminous material on fiscal monetary and the so called incomes policies. Fiscal and monetary measures it should be noted ultimately affect the size, distribution and accrual of resources, and hence directly affect the power structure. To what extent these measures achieve

a specified social welfare index depends much upon their impact on the power constraints. Fiscal, monetary, income and other so called economic policy instruments serve class interests so far as sharp class conflicts exist in society. The precondition for the social effectiveness of these instruments is an altered social base. An interesting exercise on the quantum of resources and the extent of resources transfers needed from rich to poor to eliminate absolute poverty in India shows that it is the power that is the dominant constraint.²⁰ Although in a capitalistic society there may exist some marginal flexibility in regard to distribution of wealth and income through fiscal and monetary policies there are strong limits to this process. This process is firmly conditioned by the class basis of the state which determines the limits to which a state can go in changing the basic conditions.

Development in general and economic development in particular is a complex process dependent on a set of objective and subjective factors. Development entails a change in the superstructure and ushering in of a new consciousness. Both subjective as well as objective factors could result in a drag on the process of economic development. One has to focus on the mutual relation between technology and the social institutions, conditioned by the objective and subjective factors. It is only a dynamic equilibrium between the subjective and the objective conditions which can trace a developmental path which by no means will be smooth or linear. Technology as a productive force is very much a function of social consciousness. At a given historical moment as a product of cumulative forces either the subjective or objective factors could constitute the predominant constraint. The Chinese experience suggests that the objective conditions embodied in the technological choices becomes easier once the subjective barriers given by the power constraint is relaxed.

In the Indian situation it is the subjective constraint reflected in the power constraint and the lack of social consciousness which forms the basic constraint. Technology as an objective factor is an instrument of the power-structure to realise its goals. Therefore technology does not constitute the primary limitation on the growth process in the contemporary Indian situation. It should be made clear that the relaxation of power constraint does not assure the material wealth of an imperialist power like the United States. One could perceive the inability of the system to generate more and more material resources as an objective constraint. However this ceases to be a constraint once the subjective forces reflected

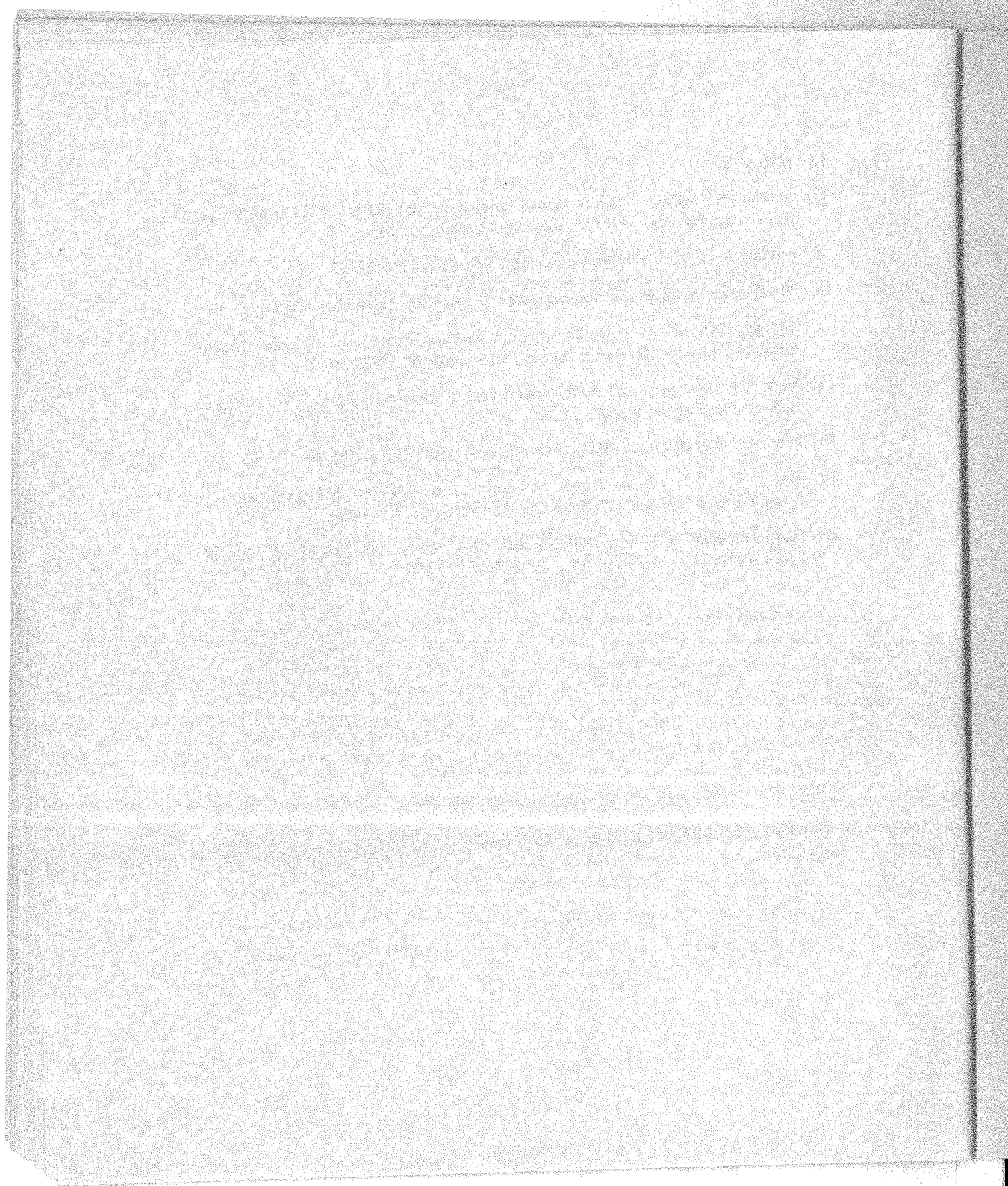
in social consciousness prepare the society for an equilibrium between the resource availability and the perceived needs.

It is difficult to escape the conclusion that from a long term perspective the constraints on the growth process in Indian economy are not so much technological as institutional in character. It is the locus of power in the corporate and the rural sector with its ramifications that constitutes the constraint. The progress of the economy in the direction of social welfare is directly related to what extent the developments in the Indian body-politic reduce the power base of the dominant power elements in the industrial and agricultural sectors. The historical forces have a logic of their own in shaping the course of power patterns. When much of the body of economics as it has evolved becomes helpless in tackling the central social issues, questions are raised about the role of economists in changing the economic system into a human system, an effort to which economists committed to social change can make significant contribution.

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ACADEMIC PROGRAMMES

The Post Graduate Programme

Candidates admitted to the third two-year Post-Graduate Programme in Management commence work in the first half of July and Graduate in June two years later.

Congruent with the orientation of the Institute, the Post-Graduate Programme offers courses relevant for careers in the Public Sector and alternative sectors, in addition to universally applicable management concepts, tools and techniques. Candidates enrolling into the Post-Graduate Programme are expected to identify themselves with the objectives of the Public Sector and the perspectives of the Institute.

The placement efforts of the Institute for graduating students are *only for positions in the Public Sector*. Candidates are expected to abide by the placement policy in completing the formal application.

The eligibility conditions for admission into the PGP may vary in the details from batch to batch, according to the special features of the Programme for a batch. These are specified and defined in the prospectus for each programme. The essential conditions for all Programmes are:

- a Bachelor's Degree from a recognised University or Institution with a consistently good academic record, and

- a minimum facility in mathematics to take the courses in the Programme.

During the first phase of the programme there are compulsory courses in the basic disciplines of economics, social sciences, behavioural sciences and quantitative methods, as well as in the functional areas of management (such as production, finance, personnel and marketing). In the second phase, following the completion of the course work in the compulsory subjects, all students are assigned project work at various Public Sector undertakings for a period of approximately 4 months. During this assignment, candidates are expected to identify specific

management problems and work towards their solutions with the use of concepts and techniques learnt so far.

During the final phase of the programme, students are provided opportunities to do more advanced study and gain a deeper understanding in any of the different *functional areas* of management, such as production management, personnel management and finance. Opportunities for advanced study in one or another sector are also provided; e.g., transportation, agriculture, power, health, energy and education.

On successful completion of the programme, students are awarded a Post-Graduate Diploma in Management which is recognized as equivalent to a Masters Degree offered by Indian Universities. It is similar to the Diploma awarded by the two other Institutes of Management at Calcutta and Ahmedabad.

Fellowship Programme

The Fellowship Programme was begun in 1976. The Fellowship of the Institute is equivalent to the Doctoral degree of a University and is patterned on the American model. It requires a basic core of courses in the field of management, then a stream of specially designed courses in the second year in any one of the five sectors: agriculture, education, energy, transportation and planning. This is followed by a special examination for admission to candidacy. During his candidacy the student must write and defend an acceptable thesis, under the guidance of a committee of the faculty, in the sector of his specialization. Upon completion, he becomes a Fellow of IIMB. Currently seven students are enrolled in this programme.

Research

Teaching at post-graduate levels is ineffective in the absence of research. Research, therefore, is an important activity of the Institute, although not its primary aim.

The Institute conducts basically two types of research. One is Policy Research, which has not only an all-India significance, but seeks to make an impact at high policy-making levels. The other is Applied Research where the effort is more at the micro/local levels. The objective here is to understand current prac-

tices and make suggestions and recommendations for improving them. This also facilitates the preparation of case studies and other teaching material. Such applied research also gives an opportunity to the faculty to be in constant touch with the world of work. Some of the notable research projects currently under way are: one on bullock-cart transportation wherein attention is focussed on the techno-economic and social implications of this mode of transport; a research study on one of the backward districts of the state; to study organization, objectives and systems for the management of the Drought Prone Area Programme. A diagnostic study of medical education is also currently under way.

Library

It is in the Library, more than any other area, that we feel the lack of a campus. It is cramped for space at a time when increasing demands are being made of it. Yet, on the positive side, the Library has in two years acquired more than 15,000 books, and orders have been placed for as many more. Some 400 periodicals have been ordered, of which over 200 are now regularly received. IIMB has pioneered the use of the London Classification of Business Studies for cataloguing. The system, in addition to the conventional Author/Title indexing, is ideally suited to the special cross-indexing needs of management science. Library facilities also include mechanical aids for cataloguing and preparation of bibliographies, a micro-film reader, and an off-set printing photo-copying machine.

EXTENSION PROGRAMMES

Management Development Programmes

Short duration programmes of a very wide variety are available to practising managers and administrators today as means for continuing education. IIMB offers the following four types of MDP:

SENIOR MANAGEMENT SEMINARS, designed to cater to the needs of top and senior managers and administrators, would discuss policy and long-range issues, examine emergent and environmental problems, and formulate guidelines for organisational strategy.

SECTOR BASED PROGRAMMES would focus on unique problems that the particular industries and sectors are facing today in the respective functional areas. The generic context in which these problems arise would, of course, be examined.

TECHNIQUE ORIENTED PROGRAMMES are generally meant for senior and middle-level executives and administrators, and for those who head the respective functions and departments in organisations. These programmes are designed to focus relatively more on specific management applications, techniques and skills.

BROAD BASED PROGRAMMES would seek to examine the entire range of problems and issues, both current and emergent, in the concerned area of organisational functioning. These programmes are expected to be relevant for managers and administrators from all organisational levels.

The teaching methodology to be employed in these programmes is highly eclectic and inter-disciplinary, employing a wide range of methods to facilitate learning. Faculty from a variety of academic disciplines combine with practising managers to teach in any one programme, on the realisation that complex organisational problems are always multi-faceted and do not conform to conventional academic boundaries.

Organization Based Programmes

OBPs are designed specifically to suit the requirements of individual organisations. Such programmes offer a number of advantages both to the Institute and the participating organizations.

To the Institute, they provide opportunities for an intimate access to the climate and culture of individual organisations and to acquire a deeper understanding of the problems they face in practice. This is helpful not only to teaching, training and consultancy in general, but also for the identification of relevant research projects. To the organisation, such programmes can be immensely beneficial since a critical mass of managers will be trained in the relevant areas at lower costs. Adoption and implementation of new ideas, concepts, methods and techniques by the organisation will be easier and follow-up will be meaningful. Data, information and the personnel directly connected with problems being discussed are all available for use at one programme venue. Benefits accruing to the organisation from the investment in training are likely to be high. OBPs are far more economical to an organisation when compared to sending an equivalent number of managers to external courses.

When an OBP is undertaken, the organisational needs are first discussed between the Institute faculty and the Training Executives of the Company through correspondence and, if necessary, by visits. The subject for the course, programme content, faculty, duration and schedule are then worked out.

Short duration OBPs (for example, less than two weeks) are held in the premises of the organisation and longer duration programmes are usually conducted at the Institute, in Bangalore.

Senior managers and functional specialists of the organisation are associated with programmes as internal support to the Institute faculty conducting the programme. Guest faculty with special competence may also be included wherever appropriate.

Consultancy

IIMB undertakes consultancy assignments with the dual objectives of extending theoretical and academic constructs into the practice of management in

organizations and for enriching its own academic programmes of work through cases, illustrations and research hypotheses derived from client organizations.

Consultancy assignments are undertaken on an Institutional basis only, ensuring a thoroughly professional and, often, interdisciplinary approach to the task on hand.

Sponsored Projects

This is one form of research activity that brings high and immediate returns. Through sponsorship, the external environment can tap the special skills that are available in the Institute, and it provides an opportunity for the academic staff in the Institute to tackle problems of priority, and often as not, to escape from the dangers of ivory-tower theorizing. It is also an area that can provide opportunities for young researchers; for example, thesis topics for Fellowship candidates. Currently, the Institute is involved in a wide variety of sponsored projects, from theoretical studies of dependence and underdevelopment, to the socio-politics of rural poverty, to an international comparison of public-sector performance.

SECTORAL PROGRAMMES

IIMB had decided to extend the concept of management to areas that had traditionally been excluded from it. This was made clear in the Prime Minister's Inaugural speech.

In keeping with these perspectives, IIMB plans to set up six self-supporting centres of teaching and research in the areas of agriculture, education, energy, planning, population and health, and transportation. It is now much too soon for us to expect such centres to function in a self-supporting way. They are therefore considered to be priority sectors of activity in the Institute.

All these sectors are currently engaged in developing teaching material, and in initiating research projects. With time, out of the work of Fellows and full time faculty, the sectors should grow into centres.

Agriculture and Rural Development

The immediate objective is to lay the groundwork for agricultural resource ized, and a multiplier effect is expected. Efforts at present are to study various aspects of vocational and technical education, and then to move on to higher educational. Further seminars, teachers training programmes and consultancy of tea plantation managers.

Education

A seminar for the Principals of Engineering Colleges has already been organized, and a multiplier effect is expected. Efforts at present are to study various aspects of vocational and technical education, and then to move on to higher education. Further seminars, teachers training programmes and consultancy services are being planned.

Energy Management

It is only now being realised how important energy is to the world ecological system. In this context, the Institute plans to study the problems of energy in

the country in a systems framework. This programme has received the support of the Ford Foundation. Currently, interest is being focused upon power and electricity, and alternate sources of energy.

Planning

Planning, until recently, has been the exclusive domain of the econometricians. Many of the shortfalls of planning exercises can be traced to the lack of input from the social sciences. A management approach is ideally suited to bridge the gaps. In designing its teaching and research, priority is given to the fact that planning is intended to foster social change, and input from behavioural sciences will be incorporated into the work of the sector.

Population and Health

This sector intends to concentrate on areas of public health, medical care including dispensary and hospital maintenance, and population control. Emphasis is given to primary health centres and to programmes for hospital administrators. Some experience has already been gained on drug distribution and nutritional services.

Transportation

This is a sector in which tremendous resources are needed. In the light of recent changes in the world economy, much needs to be done in India. A start has been made by conferences for senior personnel in railways, bus networks and shipping. Courses are also being prepared for the post-graduate and fellowship programmes. This sector also has benefited from a grant of the Ford Foundation.

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Systems Operations Management, Computers
L. Jayaprakash, B.E. (Mysore)
Energy, Public Sector Management, Inventory Control
S. P. Kumar, P.G.D.M. (Calcutta)
Financial Analysis, Valuation of Shares, Investment Analysis, Cost Benefit Analysis, Project Feasibility

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Managerial Economics, Industrial Economics
R. V. Ram Mohan, P.G.D., B.A. (Ahmedabad)
Production, Quantitative Methods
A. J. Yuvaraj Reddy, B.Com., A.I.C.W.A.
Finance, Marketing
N. Roy, M. Tech. (Kharagpur)
Production Management, Transportation, Operations Research
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Systems Analysis, Organisation and methods, Management Information Systems
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Y. K. Viswanadhan, M.Sc. (Andhra)
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K. S. Panikkar
Administrative Officer (General)
Lt. Col. S. P. Dutta
Administrative Officer (RCP)
Cdr. K. Manjunath, N.M., I.N.
Administrative Officer (PGP)
Lt. Col. K. V. Suryanarayanappa
Administrative Officer (MOS)
A. S. Keshavamurthy
Superintendent Engineer
T. S. Natarajan
Accounts Officer

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