242

WP : 242

Working Paper

INDIAN INSTITUTE OF MANAGEMENT AHMEDABAD

DOES FUTUROLOGY HAVE A FUTURE IN INDIA?

by

Shreekant Sambrani
Nikhilesh Dholakia

W P No. 242
Sep.1978

The main objective of the working paper series of the IIMA is to help faculty members to test out their research findings at the pre-publication stage.

INDIAN INSTITUTE OF MANAGEMENT
AHMEDABAD

A population growth rate of around 2 per cent per annum being the one certainty of India's future, predictions have varied between Malthusian nightmares and blissful utopias. The methods used for arriving at these conclusions have been just as varied in their rigour and data base. One sustained effort aspiring to a degree of seriousness has been the Second India Studies. In this article, Sambrani and Dholakia examine the studies individually and as a whole for their analytical utility and policy prescriptions. They also look into the institutional setting of the country, particularly the roles and the biases of the elites and their influence on decision-making. This leads them to posit certain propositions regarding the place and utility of futurological studies in developing societies.

BOOKS REVIEWED

1. Mehta, F.A., Second India Studies: Economy, Delhi: Macmillan, 1976.
2. Ezekiel, H., Second India Studies: Industry, Delhi: Macmillan, 1975
3. Ambannavar, J.P., Second India Studies: Population, Delhi: Macmillan, 1975.
4. Rao, V.M., Second India Studies: Food, Delhi: Macmillan, 1975
5. Chaturvedi, M.C., Second India Studies: Water, Delhi: Macmillan, 1976
6. Ezekiel, H. and Pavaskar, M., Second India Studies: Services, Delhi: Macmillan, 1976
7. Parikh, K.S., Second India Studies: Energy, Delhi: Macmillan, 1976
8. Ezekiel, H., Second India Studies: Overview, Delhi: Macmillan, 1978.

DOES FUTUROLOGY HAVE A FUTURE IN INDIA?*

I

A feeling of buoyancy has prevailed in India in the last couple of years regarding our political economy. We have over 20 million tons of foodgrains in reserve. Foreign exchange reserves have been steadily rising, due in large measure to an increase in exports as well as remittances from abroad by expatriates. In the eyes of the world we have proven ourselves to be a mature democracy by replacing one ruling elite with another through parliamentary procedures. The democratic India at last feels confident and well on the way to the holy grail of economic development.

It was not too long ago that an exact opposite feeling of despair prevailed in the country. The major drought of 1972-73 followed by recession as well as inflation in the wake of the oil crisis had led us to worry as to whether India would ever be out of the poverty trap. This concern was shared not only by the Indian intellectuals but also by such worrywart well-wishers of India as the Ford Foundation. The latter played the role they were used to: they commissioned scholars and

---

*We gratefully acknowledge useful discussions with our colleague Professor Rakesh Khurana during the early stages of the preparation of this article.

consultants to study the prospects for the future. Possibly inspired by Stanley Kubric's film, they chose 2000 as the terminal year of their odyssey. The projections were brought out under the catchy title, Second India Studies, since the population was expected to nearly double between 1972 and 2001, generating a "Second India" in three decades.

Dr. Freddie Mehta of the Tata organisation undertook to provide the key volume on the economy. The Tata Economic Consultancy Services, under the guidance of Dr. Hannan Ezekiel, provided companion volumes on industry and on services (in collaboration with Dr. M.G. Pavaskar). Respected scholars such as the late Dr. J.P. Ambannawar of Bombay university, Dr. V.M. Rao, formerly of Bombay University, Dr. M.C. Chaturvedi of Indian Institute of Technology at Delhi and Dr. Kirit Parikh of Indian Statistical Institute provided volumes on population, food, water, and energy respectively. These seven volumes together constitute the Second India Studies. They have since been published by Macmillan with impressive cover designs and prices to suit the convenience of the interested lay reader. An "Overview" volume by Dr. Ezekiel has also been published by Macmillan recently.

In this essay, we attempt to examine the Second India Studies and several related issues. This examination takes the

form of a scrutiny of each study (except the "Overview") in terms of its objectives, assumptions, data base, methods used, conclusions, and general utility. We then look at the study as a whole (including the "Overview" volume) to assess the compatibility of the individual volumes with each other and the utility of all the components together to the interests of the common reader, the scholar and the administrator. To gain an overall perspective of the study in the context of the country's development efforts so far and prospects for the future, we examine the basic policy-making structure which has shaped the First India and might well affect the Second India. We conclude this essay with some general observations regarding the place of futurological concerns in the developing world, especially where systematic planning efforts are espoused, at least on paper.

Mehta's volume on the economy assumes a great deal of importance in the whole series. For one, while the other volumes in the series have more limited concerns relating to some sectors or parameters of the economy, Mehta's concerns are "global" as he states in the preface. In the context of the magnitude and the gravity of issues that the volumes in the study taken together seek to address themselves to, this statement raises the expectation that an integrative analysis will be presented in the study on the economy, from which the others will take off to examine rather more limited concerns in greater depth. Secondly, given the multiplicity of factors influencing the overall economy, our imperfect understanding of their interrelationships and the ever-present uncertainties, the exercise of making projections is fraught with hazards. Indeed, Mehta himself observes that "the line between 'futurology' and 'astrology' was very thin" (p. vi). No other volume in the series illustrates the limitations of the data available or methods used in meeting the goals accepted by the researchers in as clear relief as does Mehta's, although, as we shall discuss below, this development was not deliberate.

The main objective of the volume is to paint in broad strokes the possible picture of the Indian economy in the year 2000.

The chosen indicators of the economy include per capita GDP,* employment, savings and investments, and shares of six major sectors in the entire economy, namely, agriculture, industry, electricity, construction, transport and other services. Four different growth rates have been assumed: 3 per cent, 5 per cent, 7 per cent and 9 per cent per year. Projections have been made on the basis of these growth rates. These projections lead to what the blurb claims as a "startling conclusion" that even if India were to grow at the rate of 9 per cent per year, its per capita income in the year 2000 will not be more than US $615 in 1972-73 prices. Actually this is merely an application of compound interest formulas to income and population growth rates. Any high-school graduate should be able to arrive at this conclusion without having any understanding whatsoever of the economy.

The volume is presumably meant for laymen, because the author makes no efforts whatsoever to explain his method of analysis. Out of the 11 chapters in the book, only three (chapters 3, 6 and 8) concern themselves with projections. Even in these,

---

*The author often fails to distinguish between the GNP and GDP, which is an undesirable glossing over in the present circumstances of substantial transfer of resources from abroad.

projections have been given either as a matter of assumption or definition. For example, in Chapter 6 it is repeatedly emphasised that the projections must look into interlinkages of various sectors in the economy. The overall growth rate, therefore, is a weighted average of different sectoral growth rates. For each of the assumed overall growth rates, different sectoral growth rates have been given and projections have been made. How these sectoral growth rates were obtained is never explained. Subsequently, the author explains that under each of the assumed growth rates, the sectoral balance will change. In the absence of explanations as to how the sectoral growth rates have been worked out, it appears that these changes in the sectoral balance are more assumptions than conclusions. In a similar way, the author has tried to work out the sectoral employment balance. The method used here has also been left unexplained, leading therefore to the conclusion that these employment projections may well also be assumptions.

The most grieveous flaw of this whole analysis occurs when the author tries to workout the projection targets for 22 selected activities in chapter 8. These have been worked out for a 7 per cent growth possibility, which will treble the per capita income by the year 2000. The method used is to multiply projected increases in income by the assumed income elasticities of demand for the

commodity in the year 1972-73. The results are in many instances nothing short of ridiculous. It may be acceptable, for instance, that the demand for foodgrains will be 274 million tons by the year 2000 (a companion study by Rao has projections considerably lower than this but at least there are no order of magnitude differences). Using the same approach, it is concluded that the demand for nitrogenous fertilisers will rise to an astronomical figure of 86 million tons of nitrogen by the year 2000. This projection has several implications. Firstly, at constant price, the cost of nitrogenous fertilisers alone would amount to about 60 per cent of the gross value of foodgrain production. This raises questions regarding the economic wisdom of this projection. Secondly, it is not at all clear that agronomically speaking, we will be able to absorb 86 million tons of nitrogenous fertilisers. This use of fertiliser amounts to roughly half a ton of nitrogen per cultivated hectare. Is this tenable from the point of view of a desirable soil chemical balance? The present indicators are that we take out approximately 8 lakh tons of nitrogen from the soil over and above what we put in (Swaminathan, 1973, p. 18). What will be the impact of this tremendous additional input of nitrogen predicted by Mehta? Thirdly, are these assumptions consistent with the foodgrain production, since the use of fertilizers by itself has no intrinsic utility?

Assuming that the foodgrain production is to be increased by over $2\frac{1}{2}$ times and assuming that soil chemical balance will be maintained, it does not require a very high power consistency analysis to indicate that the demand for nitrogenous fertilisers will not be more than 10 million tons of nitrogen by the year 2000. Therefore, Mehta's projections have definitely an order of magnitude problem. Similar questions can be raised about other demand forecasts as well. The principal flaw of this method of projection could be illustrated through a rather mundane example. A sixteen-year old adolescent might be growing at the rate of about 10 cm per year. Assuming that his height is 1.5 m, does it follow that in 27 years, at the age of 43, he will be 4.2 m tall? No analogies are perfect, but projections made by Mehta are in the nature of the ridiculous example cited above.

It requires nothing short of a proper consistency analysis, of the type carried out by the Perspective Planning Division of the Planning Commission or economists such as Sandee (1960) or Manne and Bergsman (1965) to establish detailed sectoral implications of the overall growth rate projections. In the absence of these, the author's projections are little more than exercises in imagination.

Mehta uses a particularly amusing device to prove that his projections are realistic. He compares his assumed sectoral

balances with those predicted by Chenery (1971) on the basis of the latter's empirical study of developing economies at different stages. As we have seen above, Mehta's projections are largely based on unexplained (and unidentified) assumptions. The norm used for comparisons is an empirical study. Since we do not know the basis for Mehta's assumptions, there is no way we can question them and we have to accept that his projections are realistic because he says so.

The assumptions made regarding the so-called non-economic factors are also a cause of some disquiet. A parliamentary pluralistic democracy, a continuation of the hegemony of the existing ruling classes, decision-making confined to the current techno-bureaucratic classes are all implicit in the analysis. At one place, on pp. 15-16, the author makes a case for maintenance of what he calls social cohesion. This is clearly a case for maintenance of the status quo as far as power relations within the society are concerned. Yet, earlier on pp. 4-5, the author talks about revolutions in the spheres of sociology, politics and intellectual concerns that may take place in the Second India. The extent of these so-called revolutions, however, is merely reform, which will at best aid economic growth at a rapid rate, not necessarily bring about redistribution of the fruits of this

growth. The author then goes to compare the Indian and the Chinese experiences in chapter 3, holding up China as a possible example for us to follow. His anticipation of limited changes in the non-economic factors, his claim that "this generation as a rendezvous with destiny" (on p.17), and his advocacy of the Chinese path all add up to a rather confusing picture of factors that govern societal modernisation. Mehta's prescriptions for India amount to little more than accelerated growth under essentially ceteris paribus conditions, his advocacy of various reforms notwithstanding. Yet he admires the Chinese experience, which is based on a clear break from the past institutions.

Certain stylistic features affect whatever content there may be in Mehta's work. These include his very tone which seems to trivialise insights (see especially chapters 1 and 4), endless repetition (of the 'startling conclusion' that a high growth rate of 9 per cent per year will still leave India underdeveloped), excessive and unclear use of cliches ('economic miracle', 'symbiosis', 'social synergy'), use of quotation marks without proper attribution('ambitious plans', 'glamour areas' and 'stories of glory' of planning, 'structural stagnancy' of the Indian economy), and selective citing of evidence

(repeated use of works of Chenery (1971), Felix (1972) and Denison (1967) to corroborate and justify the author's limited concerns). Such shortcomings will not be tolerable even in a piece of serious journalism, let alone a volume claiming scholarship.

Ezekiel's work on industry closely follows Mehta's approach. Ezekiel tries to see the implications of Mehta's four scenarios of growth. Thus, the volume on industry could be considered an extension of the volume on economy.

Ezekiel divides the industry into three subsectors, namely, consumption goods, intermediate goods and capital goods. Different growth rates for each of these have been assumed on the basis of three different approaches.

In the first approach A, it is assumed that the shares of the three sub-sectors in industrial value-added as prevailing in 1973-74 will continue, namely 45 per cent for consumption goods, 33 per cent for intermediate goods and 22 per cent for capital goods. In approach B, these shares are supposed to change by the year 1985-86 to 35 per cent, 39 per cent and 26 per cent for each of the three sub-sector respectively. In approach C, the changes are supposed to take place in the opposite direction with the shares becoming 65 per cent, 20 per cent and 15 per cent respectively. The volume

on economy has projected economy-wide capital-output ratios. Ezekiel assumes that under approaches A and B, the sub-sectoral capital-output ratios will also change in the same proportion. In approach C substantially lower capital-output ratios in the terminal period have been assumed for three sub-sectors, while the economy-wide capital-output ratio remains the same as in approaches A and B. Thus, for example, in approach C the terminal ratio for consumption goods is 2.7 while in approaches A and B it is 4.3. For capital goods it is 3.3 in approach C and 5.4 in approaches A and B. The availability of savings in all the three approaches has been held constant. Projections are then made on the basis of the identity that the ex post savings ratio equals the product of the growth rate and the incremental capital output ratio.

Approach A therefore is consistent with the economy study. Approaches B and C, while they are supposed to provide approximately the same overall growth rates by adjusting the output of the non-industry sectors for each of the scenario as in Approach A, have, nevertheless, different sectoral and sub-sectoral balances. For example, in approach C and scenario 4, the most optimistic one, the share of industry in the terminal year income is about 40 per cent whereas in approach B it is 22 per cent and in approach A, 25 per cent.

While some rationale has been provided for the assumption of the incremental capital-output ratios in approaches A and B (namely, that from a given starting point, they will be affected by the same proportion as changes in the rest of the economy) non convincing rationale for the determination of substantially lower capi output ratios for approache C (to the fourth decimal place!) has been provided. The only explanation that one gets is the general platitude that capital-output ratios in case of consumer goods industries are generally lower. It has been further assumed that amongst these, those activities could be selected which have lower capital-output ratios and capacity utilisation could be improved, both of which will further depress the capital-output ratios. Such considerations do not seem to merit attention in the discussion of approaches A and B. Does this mean that it is not possible to follow these things under these approaches? On a priori grounds at least, there is no satisfactory answer. Therefore, in the absence of a convincing explanation, the lower capital-output ratios under approach C must remain hopes based on the author's value premises and not projections.

Not surprisingly, approach C emerges the best. The author even goes to the extent of saying that in approach C, the production of capital goods is greater than in approach B and calls this a paradox. Naturally, this will be so, insofar as the terminal year

incremental capital-output ratio is only 60 per cent in approach C of that in approach B. The entire analysis in praise of approach C therefore becomes nothing but a self-fulfilling prohpecy. Thereafter to seek the implications of this approach and work out the details is adding embellishment to this piece of fiction.

The author spends some time discussing the export possibilities. His conclusion is that even if 40 per cent of the Indian GDP is exported by the year 2000, India will not account for more than 3 per cent of the total world exports. This share, he claims, is less than that of the many developed countries at the moment. He cites particularly that the US accounted for about 13 per cent of the world exports in 1972. We do not think that export possibilities are necessarily a matter of international competition to assess the extent of development, particularly for continental economies such as the US or India. Even though the US accounted for 13 per cent of the world exports in 1972, this came to only about 5 per cent of its GDP. It is not likely that a continental economy will place so heavy a dependence on the world market as to leave its economy hanging precariously on the quirks of the relatively unpredictable world market, as might be indicated by a 40 per cent share of its GDP going for others.

It must be accepted that the principal market for goods and services to a continental economy is in the economy itself. It is immaterial as to what share of the world exports such an economy actually enjoys.

Ezekiel spends considerable space attacking the Mahalanobis model. At present, of course, it is a common pastime to resurrect the ghost of the gentle thinker and flog it to death. This has become the way of establishing one's scholarly method.

Ezekiel has gone to great lengths saying as to why the Mahalanobis model cannot work. The basic method followed by him, however, is in no major way different from that of the Mahalanobis model. The Mahalanobis model assumes sectoral capital-output ratios and works out the supplies or production necessities for obtaining a desirable rate of growth or a desirable level of employment. The only advantage of Ezekiel's work is that he has further disaggregated the industry into three sub-sectors. The merit of his obviously favoured approach C is based entirely upon the assumed low level of capital-output ratios rather than in any analytical innovation. If we can work out the Mahalanobis model with similar low ratios, the results would be no different. It is truly said that people living in glass houses should not undress before turning out lights!

The other studies in the series are somewhat more specific and limited in their concerns. Ambannavar's study, for example, is on population. This volume provides the concept of "Second India", from the expected doubling of the 1971 population around the turn of the century. Three population projections have been made: high, medium and low. According to the medium projections, which Ambannavar recommends for use in planning, the 1971 population would double in the year 2007.

Of the four chapters in the volume, the first is concerned with the data on fertility and mortality in India. The second sets out the methodology in detail and presents the population projections. Implications of the population growth for urbanisation and labour force growth constitute the subject matter of the third chapter. A preliminary report consisting of the three chapters was discussed in a seminar and the fourth chapter was appended to take care of some questions raised in the seminar. This chapter remains an appendage--patchy in structure and ill-connected to the main work.

Ambannavar's study is full of numerical data pertaining to demographic variables. Unlike some of the other Second India authors, however, he does not treat this futurological exercise as a game of numbers. In fact, the main strength of this volume lies in the careful attention paid to the data base and the methodology.

Fully realising that assumptions must be made as a part of any futurological study, Ambannavar spends considerable effort in improving the quality of his assumptions. For example, to arrive at suitable assumptions regarding the trends of fertility, factors such as marriage incidence and age, number of children desired and performance of family planning programme are taken into account. Similarly factors such as income distribution, nutrition, public health, and medical services are considered for basing assumptions about the trends of mortality. The use of Frejka-type methods enables Ambannavar to project secular, long-term trends in a disaggregate fashion. As a result, a wealth of projections disaggregated by age, sex, location, etc. are available for over a hundred years.

In the very strength of this volume, namely, methodological soundness, lie some of its shortcomings. Firstly, the interpretation of results gets the short shrift because of excessive preoccupation with methodology. The third chapter gives some glimpses of the interesting implications of the population projection for urbanisation and labour force size and composition but these hardly justify the effort undertaken in the projection exercise.*

---

* Perhaps the other Second India volumes were supposed to explore the implications in detail. These volumes, however, make very little use of the detailed population projections, as we have indicated at appropriate places in this essay.

Secondly, parts of this book are so strewn with demographic jargon as to put off the lay reader. Thirdly, the concern with methodolo fragments the assumption as well as the results. There is no systematic framework linking the assumptions, though the factors which go into making the assumptions clearly interact.

The end result of all this is that a rich collection of detailed population projections emerge but neither are the assumptions underlying these projections fully grounded into the social reality of present India nor do the results help construct the social reality of future India.

The main objective of the food study by Rao is to project both food requirements as well as production possibilities by the year 2000. The exercises are done by Rao in an almost independent fashion.

The approach used for projecting the requirements is relatively straightforward. The population has been stratified into four classes, namely, the lower poor, the poor, the middle class and the rich. Of these, the lower poor and the poor do not presently obtain sufficient food. The middle class are assumed to have nutritionally an adequate diet-mix, whereas the rich are supposed to be over-consumers. The nutrition

requirements are met from both foodgrains as well as other foods, which include sugar, dairy products, fruits and vegetables, fats, and animal, poultry and fish products.

Population trends as estimated by Ambannawar have been used for the purpose of projection. The critical factor, however, is the distribution of this population into appropriate classes. Three such divisions are attempted, all of these being in the form of alternative assumptions. In all of the classifications, it is assumed that there will be no lower poor left. (This could be considered a tall order, since according to the data, about a third of the total population was in this category in 1964-65.) In the three alternative assumptions, the poor constitute 40 per cent, 20 per cent and 20 per cent of the population whereas the rich account for 20 per cent, 20 per cent and 40 per cent, respectively. These three classifications are superimposed on the high, medium and low population projections, giving thus in all nine possible population mixes by the year 2000.

The total food requirements are then projected on the assumption of per capita demands for food for each of the classes remaining at the 1964-65 level. Since all the three population distributions have been assumed to have shifted

in favour of the rich class from the lower poor, the aggregate per capita demand in the year 2000 will be biased in favour of other foods and against inferior foodgrains like jowar and bajra. Detailed requirement for each of the items considered have been then worked out. The foodgrain requirements vary between a low of 184 million tons to a high of 261 million tons. The requirements of other foods vary between 3 to 5.5 times their consumption in 1964-65.

In addition to projecting the demands, the author has assumed the middle class consumption in 1964-65 as the nutritional norm and projected the requirements on the basis of this norm being satisfied for the total population. These estimates are lower than the lowest estimates based upon the demand projections. This raises an important question regarding the assumptions behind the demand-based projections. Is the author justified in making such drastically optimistic assumptions, the most conservative of which will yield a per capita consumption in 2000 higher than that enjoyed by the top third of the population in 1964-65? This is where the linking of the various studies is called into question. According to the author, his assumptions could be considered

to have come true with a 4-6 per cent growth rate to be maintained over the next twentyseven years. These, as the study on the Economy has shown, will result in a per capita income increase of between 1.5 and 2.5 times the level in 1972-73. These increases by themselves are not very impressive. Coupled with the fact that these are average incidences, one begins to wonder whether the hoped-for shifts in distribution would also be achieved to the extent of justifying these optimistic projections.

In the remainder of the work, the author examines various projections made by different research workers and examines the prospects for the required production. He claims that projections regarding even the known technologies are hazardous, let alone unknown technologies. He, therefore, examines the projections of the others and their feasibilities, as well as looks into the implications of achieving the rates of growth posited by these authors. He concludes that on the basis of the experience so far, a shift in policies favouring foodgrain production will occur, which will give the hoped-for boost for their production. He feels that other foods may not be produced in adequate quantities mainly because of cash expenditure involved in their purchase and the inability of at least the bottom third of the

population to do so. His conclusion is that the production of such quality foods should be widely dispersed particularly among the poorer sections, who could, incidentally, have a subsidiary occupation. He feels that the technology is there, but other support measures to make such programmes successful are not necessarily present.

While the author brings into consideration judgement-based factors regarding the improvement in production possibilities, there are hardly any data to support these. The author also does not consider such specific interventions as changes in price policies or possibilities of land consolidation. Both of these will have very significant implications for the total output, particularly when the author says that the impetus for additional production will come from further spread of high-yielding varieties in irrigated tracts. Additional production from such areas will depend on the efficiency of utilisation of the irrigation infrastructure and will be quite sensitive to the changes in the marketplace, both organisational as well as parametric, i.e. prices. These have been considered to be beyond the scope of this work. There are also the factors that limit the utility of the effort, although in

other respects, it must be regarded as being of greater use than the companion pieces on industry and the economy.

The volume on water has been prepared by Chaturvedi. It stands more or less independently of the entire series, inasmuch as it makes practically no use of the other projections.

Chaturvedi's method of analysis is akin to forecasting the derived demand for industrial raw materials. He classifies the use of water into a variety of purposes, including agriculture, industry, power, navigation, and direct consumption for domestic and municipal purposes. Except for the last named, the demand for water in other uses depends upon the demand for other commodities for final use, such as foodgrains, industrial products, and so on.

The author starts with population projections. He uses the Registrar General's figures upto 1980-81 and, thereafter, the figures used by the National Commission on Agriculture. His projections of population at 864 million is considerably lower than those given by Ambannawar. At the same time, the author makes rather drastic assumptions regarding the growth of

urbanisation, which leads him to conclude that in the terminal year, the urban population will account for nearly half of the total, an assumption which deviates markedly from Ambannavar's projections of levels of urbanisation.

Using this population base and its distribution, he makes an estimate of foodgrain requirements, the area that could be under cultivation and the water that will be needed to produce this amount of foodgrain. This leads to an estimate of nearly doubling the proportion of irrigated area under cultivation, from 26 per cent to 51 per cent. The author says that the ultimate potential for irrigation from all known sources is 107 million hectares, of which 43 million hectares was being tapped in 1973-74. Thus, a projection of doubling the proportion of acreage under irrigation, along with an increase in the total cultivated area, will lead to an almost complete exhaustion of the potential by the year 2000. Chaturvedi is aware of this, in so far as he admits that "in several river basins, water resources could have been exhausted long before this date." Chaturvedi's is, therefore, a rather precarious and frightening scenario. The foodgrain projections are based upon population projections which are relatively lower than

those given by the other authors. If Chaturvedi's population projections should turn out to be underestimates, we might face a severe crisis with regard to the production of necessary foodgrains. This is where, it appears, that the communication among the various authors was not strongly established. Had the others taken into account Chaturvedi's pessimistic forecast, they could have seen the implications for other sectors, and made necessary corrections, if possible.

The use of water for agricultural purposes accounted for 94 per cent of the total water use in 1973-74. This proportion is expected to go down to 89 per cent by 2000. Nevertheless, agriculture will remain the predominant user of water. Other uses of water are, therefore, marginal and perhaps should not engage our attention much. The main concern can be how one ensures adequate foodgrain production in the absence of greater availabilities of ground and surface water. An increasing emphasis on conservation of soil and atmospheric moisture is called for. This could lead to technological innovation in dry-land agriculture. This, in our opinion, will be the major source of foodgrains for the Second India, rather than the constrained irrigated agriculture. Unfortunately, the author does not dwell long on this aspect.

Chaturvedi spends some space discussing the management of water resources. His main emphasis is on greater attention being paid to inter-disciplinary understanding of the use of water and its management. He feels that the "hardware of irrigation," presumably the province of the irrigation technologists, has been given overriding priority, to the neglect of agricultural consideration, which alone could transform the availability of water into additional production. He feels that unless integrated national water plans are drawn up in place of the current ad-hoc project-by-project approaches, improvements in the use of water will not take place. At the same time, he cautions that detailed operational plans need to be worked out at the village level.

Even if one were to disagree with the method of projections or the data used by Chaturvedi, his conclusion regarding water management should be unexceptional. His emphasis on both looking at the totality of the resources and a realistic operational plan at the most practical unit is something that is not obtaining at the moment. The utility of such concerns to both researchers and planners is obvious. Chaturvedi's study should, therefore, be considered an important contribution.

Such, however, is not the case of the services study by Ezekiel and Pavaskar. If one were to look at only this volume as representative of the Second India studies, one would form the impression that the Second India is likely to be a very muddled India. This study pertains to the tertiary sector and covers fields such as education, trade and storage, financial institutions, public administration, health care, housing, transport and communications. For some reason the authors have a penchant for what they call "super industrial service economies" of the type obtaining in the West. They seem to think that the conversion of a large but relatively ineffective tertiary sector in India into a modern polished service sector of the Western type represents a tremendous developmental step. There is no analysis to suggest why a service economy is a "cherished goal" (p.3). Is it because of the colour of the collar? Is it because of the quality of life? Or is it simply so because of the glamour of slick international airports and mammoth supermarkets? There is, for example, no mention of the fact that most of the services such as finance, administration, transport and communications, storage do not add anything materially to the well-being of a nation. These merely represent institutions created by the society to facilitate its productive

pursuits. It may well be argued that any society may be better off if it can reorganise its productive and consumptive activities in such a way that the need for such non-productive services is minimised. On the other hand, services such as education, health care and housing have a distinct bearing on the quality of life. They contribute to the physical, psychological and social well-being of man. The learned authors of this volume seem to be blissfully unaware of this important distinction between different types of services. They seem to be under the impression that a growth in the aggregate level of services, whatever be the composition of such services, constitutes development.

In terms of sources of data and methodology, most of the sub-studies in the services volume are woefully inadequate. In fact, the studies on education, trade and storage, public administration, and health care seem to lack in any methodology whatsoever. In the introduction to the volume, the authors argue that "it is a difficult task for economists (who are neither poets nor artists) to create a complete vision of the service sector in Second India" (p.8). Looking at most of the sub-studies in this volume, one gets the impression that the authors have relinquished their cloaks as economists and turned into rather poor grade poets and artists. They have tried to

create quantitative and qualitative scenarios which are neither data-based nor representative of any creative breakthrough in imagination. For example, in the chapter on trade and storage, there is no recourse to even available secondary data on the retail trade in the country, let alone an attempt to use such data creatively for analysing the nature and trends for the evaluation of the retail system in India.* For most of the sub-studies, there is heavy reliance on arbitrary ratios and indices, outdated reports of committees (reproduced, rather than critically evaluated), cliches and popular Sunday-afternoon variety futurological works such as Alvin Toffler's. There is, of course, some variability in the quality of the various sub-studies. For example, the study on financial institutions is an attempt to establish the credit needs of the Indian economy in the year 2000 by using simple yet reasonable elasticities and ratios. Similarly, the section on housing to meet the otherwise impossibly, large requirement for housing for the Second India. The other sub-studies, however, show neither the basic minimum methodological rigour nor an awareness of the new radical concepts of education, health care, and transport options in the Third World [Illich (1972), Friere (1972)]. The end result, therefore, is a hotch-potch of simplistic projections, borrowed, cliches, and insipid sermonising.

---

* Bhandari and Vora (1978) show how readily available data compiled by the Operations Research Group can be used to analyse retail trade.

Parikh makes projections for energy requirements and resources under two basic scenarios: 1. high economic growth - low population-contained urbanisation, 2. low economic growth - high population - high urbanisation. The first scenario is examined in more detail. In it, two sub-cases are looked at: (a) oil price falls to $ 5 per barrel and (b) oil price stays around $ 10 per barrel. Projections in most cases are based on trend extrapolation. Policy recommendations emerge regarding (a) investment patterns, (b) fuel choices, (c) technological choices for mining, processing, transporting/transmitting, and (d) technological/social choices for fuel consuming sectors. An especially important section examines the likely impact of new (potentially or possibly viable) technologies. The study is preceded by a useful survey of energy consumption pattern and energy resource endowments in India.

Parikh uses mostly Fuel Policy Committee data, augmented by those from the Energy Survey of India. Naturally, several assumptions have to be made, but the author makes reasonable attempts to systematise and justify all of them. The data are used for making projections based on trends, with substitution effects built into the model. Social choices are implicitly taken into account so as to make substitution effective.

For cases 1(a) and (b), sectoral energy use projection by type of fuel are made. These are translated into investment required for energy resources development. For case 2, only 'domestic' and 'transport' sectors are looked at because high population-high urbanisation will make these two the critical sectors. Broadly, the conclusions for the three cases are:

1(a). This is a 'manageable' future with normal substitution and development effort.

1(b). This requires accelerated substitution of oil and better use of coal and electricity.

2. This requires technological/social breakthroughs to meet rural energy needs. Also, restructuring of urban living and transportation is inevitable.

While the author prefers a multi-sector input-output model approach, it is not followed because of lack of data. Instead, sector-wise and product-wise estimates are made. Even with this model, the implication for substitution, technology choice, social policy are brought out quite well. Presentation, though, is restrained and sometimes clumsy.

On the whole, Parikh has done an admirable job of projecting the energy requirements by type of uses, investment required to develop the energy resources and the coupling of these two. The important contribution of this volume is in highlighting the hard social and technological choices which have to be made imminently in the case of the moderately optimistic as well as the pessimistic (realistic) scenarios. Although the author has not been able to use a complex inter-sectoral model for his projections, he has been cautious enough to point out the implications of his projections and recommendations for various other sectors such as transportation, industry and agriculture.

This volume shows the utility, although limited, of doing a comprehensive futurological exercise in a sector where technology is an important variable of social choice. Undoubtedly, this study would have been far more significant it is had been done in conjunction with similar consistent studies of other related sectors. For example, the projections of transport sector in the Ezekiel and Pavaskar volume in service do not take into account the imperatives specified by Parikh with respect to urbanisation and transportation.

Parikh shows that given broadly acceptable social objectives, it is possible to identify a range of technological choices which are consistent with those objectives. He has tried to demonstrate, to the extent possible, the feasibility and implementability of these technological options. In this sense, the study tries to bring out a realistic and realisable projection of the energy sector in India at the turn of the century.

It can, of course, be argued that the study does not go far enough in identifying the inter-sectoral effects as well as the technological options. For example, while the transport requirements for coal have been estimated, the impact of increased wagon requirements on the steel sector and its energy repercussions are missing. The author has admitted to this deficiency in his preface by pleading his inability to use a comprehensive inter-sectoral input-output model. Because of this, there is some uncertainty as to whether the projections are realisable or whether certain unforseen bottlenecks will crop up. In terms of technological choice also, the emphasis has been on exploring substitution possibilities for oil.

Broader substitution possibilities, such as the use of telecommunications instead of physical transport of people for communication have not been examined.

All this is not to suggest that futurological exercises should extend themselves in all possible directions. This is merely to indicate that consistency between sectors and a breadth of vision are essential pre-requisites for any meaningful futurological work of this kind. On all these criteria, the energy study stands out from the series.

III

The entire series makes rather mixed reading. Not only do the methodologies and the sources of data of the different authors vary, but so do their styles and methods of presentation. For example, the works of Mehta on the economy and TECS on the industry and the services read rather quickly and are obviously meant for someone whose familiarity with the subject does not extend beyond an occasional reading of the Economic Times. Therefore, the authors feel compelled to use popular terms without defining them, improper quotations and sledge-hammer arguments to drive home even the minutest insights. The other volumes follow a more technical style of presentation and are obviously meant for people who are sufficiently familiar with the technical literature. The volumes on population and water are understandable in full only by demographers and research workers in irrigation. The volumes on food and energy, too, require some amount of patience and familiarity with the subject, but are not meant exclusively for the specialists.

While the sponsors of the study had a laudable objective in allowing complete freedom to individual authors, in order

that the projections are consistent and useful to the policy makers, it would have been necessary for all the authors not only to follow a common format and methodology but also to use a common pool of data. Anybody familiar with Indian statistical situation would readily agree that there are serious problems of reconciling data obtained from one source to those from another. A case in point is the three different population projections used, all claimed to be derived independently, by Ambannawar, Mehta and Chaturvedi.

Similarly, assumptions are not made in a consistent fashion. For example, Rao assumes that bottom one-third of the population will move from starvation to malnutrition level, while Mehta feels that the per capita income can at most be trebled by the year 2000. Does it then mean that during the same time, such drastic redistribution of income will take place that even with this limited increase in the total national income, the transformation in class structure will be so substantial as implied by Rao? Mehta, however, assumes that a status quo will prevail in the socio-political structure. Is it possible that such drastic redistribution will occur in the face of such an assumption? In the absence of a coordinated

effort among the authors, many seminars and conferences notwithstanding, the answers to such questions are not to be found.

One would have hoped that the overview volume, prepared two years after the rest by Ezekiel, would have tried to reconcile at least some of these differences. Right at the outset, however, Ezekiel enters strong disclaimers to any such intentions: "[The overview volume] is not intended to be a summary of [the other Second India] studies. Also it is not intended necessarily to reconcile the quantitative results obtained by different studies on the basis of different assumptions" (p.3). Just prior to these remarks, he recognises the major limitation of the series: "[The] authors [of the Second India Studies] worked independently of each other. They adopted different approaches, made different assumptions and used different methodologies. They also used different sources of data and used different base years. It is not surprising that their detailed results differ in many respects. What is more important is that they draw a number of important conclusions and raise a number of critical questions" (p.3). We are afraid that this statement, which is more an apology than an explanation, is simply not acceptable, because it negates the very basis on which a <u>series</u> of studies can be justified. As to the "important conclusions" and "critical

questions," one would expect these to be the concerns of any serious research effort, whether in the form of a series of related volumes or a single volume. We have raised questions regarding these conclusions of individual volumes in the previous section. Unfortunately, Ezekiel's overview makes the reader further uncomfortable, rather than answer these questions.

Ezekiel declares that "all the studies are imbued with a high sense of social justice" (p.3). A whole chapter (out of a total of 15) is devoted to social justice, social synergy and economic development. In addition, the magic phrase appears liberally sprinkled throughout the volume, with or without quotation marks. A cursory glance is bound to warm the cockels of even the bleedingest-heart liberal.

Yet what is the good doctor's prescription? "As a country's per capita national income increases, the share of the primary sector in income and employment falls and that of the secondary sector increases. As per capita [income] raises above certain extremely high levels, the relative share of industry also tends to fall and that of the tertiary sector takes over the first place in the economy. That such changes should take place in the prescribed manner is sometimes considered so important that it is taken as an objective of national economic policy" (p.18).

After reiterating selectively and at length from other studies those findings that support his predilections, Ezekiel proceeds to posit a vicious circle which will lead to a "dark prospect for 2001" (chapter 13). To overcome this he prescribes a "virtuous circle": "low population - high income - high domestic savings and large foreign saving inflows - rapid industrialisation - fast urbanisation - low unemployment - little poverty - high social justice," which will lead to "a prosperous India in 2000" (p.212). The avenue to this prosperity is, of course, through full and unfettered private enterprise, both domestic and international, since on 0.17, he avers that private enterprise has acted largely in conformity with national objectives and where it has not, "in many ... cases it is the policy objectives that are unsatisfactory."* To say the least, this is a highly debatable proposition, which can be settled neither in a paragraph as Ezekiel has done, nor in an essay such as the present one. Before recommending such a policy, however, one would have liked to see much greater and unimpeachable evidence than has been provided by the author.

The only place where Ezekiel will accept some limitation on private ownership is in the poor, benighted agricultural sector,

---

* The sole example of the conformal behaviour of the private sector that he cites is of import substitution. In a situation of absolute and rigid controls over imports, the extolling of the private enterprise adherence to these policies is making a virtue out of necessity. Yet there are clear indications that the private enterprise romance of things foreign continues unabated, as shown through the craze for foreign collaboration.

although within limits. He is predictably entirely averse to cooperativisation or collectivisation.*

He prefers diversification out of agriculture, since he believes that the land-man ratio is already adverse in India and as a result of further population growth, it will further worsen. Ezekiel is convinced that explicit interventions for redistribution of income will not work, because "they may produce some marginal changes in income distribution but for the most part do so at the expense of the pace of economic development since they do nothing to change its character" (p. 164). Instead, he believes that a shift in the strategy of "development" to favour consumer goods and improvement in capacity utilisation "automatically ensures greater social justice" (p. 162).** He makes so bold as to project that under such circumstances population will rise only ti 800-850 million, the growth rate will be 12 per cent per annum, the per capita income will be US $ 1500 (1971 prices) and that an egalitarian distribution will prevail, so that "India would ... not ... [consist of] en elite sitting on top of a powder keg, but ... [of] a prosperous people surging powerfully forward and interested in conditions of world peace and progress" (p. 213), all by the year 2000.

---

* Curiously enough, Mehta's study finds laudatory references in Ezekiel's overview. Yet Ezekiel seems to ignore Mehta's infatuation with China, where land collectivisation has been an accepted and implemented instrument of policy.

**Shares of Adam Smith!

If it were one's ideological convictions that stood in the way of sharing Ezekiel's visions of Valhalla, one would gladly abandon them to become an acolyte of this glory. We are afraid, however, that this requires the sacrifice of logic as well as available evidence.

The so-called accepted shift in the sectoral mix of income and employment is something that prevailed before much of the Third World embarked upon a development path. When largely agrarian and continental economies such as India and China started developing, the premise that the role of primary sector has to be diminished to signify development became questionable. The Indian evidence indicates that while the share of agriculture in the GNP declined from about 60 per cent to around 42 per cent in the last 20 years, the proportion of population dependent on agriculture remained steady at around 70 per cent. In a relative sense, therefore, the income distribution worsened for this 70 per cent, as a result of this "desirable" shift in the income mix. Obviously, changes in the income mix were not matched by changes in the employment mix.

Ezekiel can point out that his strategy requires not only a change in the income mix but also in the employment mix. Under

the present conditions of annual additions to labour force of around 7 million and given the investment requirement of about Rs.7,000 per job in 1960-61 prices (Anon. 1969), the total investment needed for merely additional employment will be of the order of Rs 5,000 crores per year in 1960-61 prices. Is this feasible and realistic in the face of other demands?

The conclusion is, therefore, inescapable that additional employment opportunities through increase in agricultural productivity, both per acre and per capita, is the only realistic way out. We need not consider the dreaded "land hunger" as a serious deterrent, because in the countries that some of the authors of the Second India series admire greatly, namely, China, Japan, South Korea and so on, the per hectare employment potential of land is between three and six times that of India (Ishikawa, 1978). What this approach implies, however, is that substantial additional investments in agriculture and related sectors such as fertilisers, electricity, implements and so on will be needed. This is a far cry from a consumer-good orientation to the economy or the marginal investments in agriculture such as cleaning and deepening of wells favoured by Ezekiel (p. 202).

The definition of economic development used by Ezekiel is not very clear. From the quotes from pp. 162 and 164 given above, however, one is led to believe that distribution of incomes as an

explicit objective is not to be a part of the design of economic development. Not only is this contrary to egalitarian ideals but also to much of economic wisdom currently accepted by economists of all stripes. The picture of a strife-free, harmonious and prosperous society based upon private enterprise does not prevail in any of the show-pieces of Western capitalism, let alone in the imitative satellites. The "export-oriented open economy" which is considered desirable by Ezekiel (p.206) is something that has been tried out in smaller countries of Western and Central Europe as well as East Asia. Scholars have had serious doubts regarding this form of development which has reduced these countries to a peripheral role (Amin, 1974). Does Ezekiel want India to become a similar satellite? And more importantly, do the Western economies want the burden of a billion-strong satellite?

The use of the additional overview volume to advocate a limited and biased point of view seriously compromises the research value of Second India Studies. Instead of reviewing the component studies, tying loose ends together, reconciling conflicting data and findings and presenting a balanced overview, Ezekiel has chosen to use the evidence selectively (and to introduce new evidence where none was forthcoming from the component studies) to reiterate and amplify recommendations he and Mehta came up with in their respective

studies. The sponsors have lost, assuming they wanted one, the opportunity for a balanced and detached overview of the Second India Studies.

One would have preferred not to be so harsh with some of the studies, had they been relatively harmless. The studies have been brought out in a popular fashion, obviously meant for widespread consumption. The authors collectively command a great deal of prestige, and so do the sponsors. The lay reader, unable to question the veracity of assumptions and implications of the value judgements, is likely to be misled by the varied and fecund projections of at least some studies as we have indicated above. This could lead to a dangerous situation of mis-educating the relatively influential opinion leaders. It is for this reason that we have tried to be critical of the studies.

IV

A number of authors in the series have raised questions relating to the legacy that the Second India will have from the First India. Depending upon the individual predispositions, they have interpreted this legacy in different ways. Nevertheless, this is an important question, perhaps the most important one affecting both the nature and the quality of the projections. Additionally, it raises questions regarding the bottlenecks that might make the entire exercise of projections seem meaningless. It is, therefore, useful to ponder a little on this subject.

In our opinion, it may well be necessary to go back to the time of independence to understand what legacy the First India had from the colonial India, so that the exercise of assessing the development of First India can be tackled.

Even though we feel that Mehta's exercise in arithmetic is rather simple, nevertheless, it focuses attention on one critical feature. The level of per capita income in India has been so low that even very high rates of growth are unlikely to take this anywhere remotely near the per capita income of some of the more developed among the developing countries, let alone the

developed countries. This wisdom is applicable to India of all times. For example, in the period 1947-50, when the philosophy of planned development of India was being debated and discussed, it should have been apparent to anyone with some facility for the compound interest formula that even very high rates of growth, say for example, around 10 per cent per year, could have led to an increase of per capita income from about US $ 80 to US $ 775 in 30 years time if the population had grown only at 2 per cent per year in this period. This would have been less than a third of the American per capita income of 1947. In other words, even impossibly high growth rates sustained over long periods would not have taken India anywhere near the US in terms of per capita income. In fact, on the basis of per capita incomes, India would have continued to be called underdeveloped even in the year 1977. The ideas of closing the gap or catching up with the developed world or collapsing the entire experience of development into a few decades, which were all prevalent at the beginning of Indian planning, could have been shown to be mere pies in the sky.

This sobering thought should force our attention to what was actually possible. The only way that some reasonably tolerable standards of life could have been assured for the bulk

of the population would have been through redistribution of income and income-generating capacities. In other words, given the low level of Indian per capita incomes, overall rates of growth by themselves could never have meant very much in terms of attaining a desirable status of economic development.

A redistributive concern at the beginning of the era of planning could have possibly resulted in a lower rate of growth than could have been possible in the absence of such concerns, but given the actual performance of our planning, it is unlikely that this rate would have been lower than the approximately 4 per cent per annum that India has achieved in the last three decades. At the same time, if the concerns had been for redistribution, the quality of Indian development in these three decades would have been substantially different, insofar as the composition of industrial product, the composition of the final demand, and the attendant tendencies to consume and mobilise resources are concerned.

All of this, of course, is idle speculation given the course of events of the last five plans. No major redistributive concerns were expressed and therefore, to even attempt rudimentary alternative scenarios is a waste of time and space.

Nevertheless, it is useful to reflect upon why such concerns were absent. Most of what follows is a panoramic analysis of the history of Indian development and not an in-depth investigation.

Firstly, there may well have been an air of unreality and an unquestioned faith in the miracle that planning could work. The sincerity of those who believe in catching up need not be questioned even as their concessions to reality can certainly be.

Secondly and more importantly, perhaps, the existing biases even at the time of independence were so strong that they did not permit this sort of fresh thinking. The vested interest structure could have been so pervasive that it would not tolerate a dilution of its power or a reduction in what it claimed as its rightful due. These vested interests are popularly identified as the monopolist-capitalist class and the large land-owning class.* Our contention is that it was not these classes which determined the priorities for planning, but essentially the middle class consisting of the techno-bureaucratic elite. Of course, once these priorities were decided, the other two classes certainly did everything in their power to take advantage of such priorities.

---

* See, for example, Gough and Sharma (1973), particularly the essay by Paresh Chattopadhyay (pp. 103-129) for essentially a class analysis of Indian development. While one may find their arguments largely acceptable, they need to be extended to cover the role of the middle class as well.

The middle class in India was a creation of the British colonial and imperial rule. It did not spring from a dialectic internal to the society, as did the middle class in Western countries. It had, therefore, even less modernising potential and concerns than were claimed for its counterpart in the West. Its interests were primarily oriented towards its own survival and its continued ascendency in material and other conditions of life.

The main pre-occupation of the plans with growth rates and required investments stemmed from the purposes of this class. The new industrial structures created had to be manned by sufficiently qualified and experienced persons who could come from no other class. The fruits in terms of additional lucrative employment created, power over decision-making, and the possibility of obtaining a desirable consumption-mix were all geared for the needs of this class.* When the poverty persisted in spite of high investments, as was likely to happen given the absence of any structural change in the economy, a few programmes which had more sloganeering potential than any real ability to change the distributive structure were introduced mainly the last two plans. These could be considered mere sops so that the "core sector"

---

* Ezekiel's prescription in the Overview would, therefore, imply a strengthening of past biases, rather than breaking out of them, as he claims.

investments could continue to be protected and proliferated. The experience of the Fifth plan, where the minimum needs programme was the first to be axed in the face of resource constraints, bears testimony to this process.

It is these structural biases that the First India inherited from the British India and nurtured to considerable proportions. The biases which were relatively strong even at the time of independence became further strengthened through the course of twenty-seven years of planning. These are the legacies that the Second India is going to inherit. Not only is the arithmetic as much against the Second India as it was against the predecessor, but the structural factors are even more strongly pitted against any radical or even reformist changes.

Comparisons with China are often made, including the one by Mehta, author of the key volume on economy. It is claimed that China which was in a comparable position to India in the late forties, could attain structural changes whereas India could not. The facile explanation given is that China had a revolutionary change, whereas India chose a reformist route. Our contention is that India could not have had a revolutionary change in the late forties. Once again, the very experience of India under colonialism and imperialism is responsible for this particular aspect.

Pre-1948 China, to be sure, has been called a semi-colony Yet the penetration of foreign powers into China was confined to its port cities and the capital. Where it came in contact with the colonial powers, its humiliation and exploitation was no less severe than that of a colony such as India. These points of contact and domination, however, were very small compared to size of the country. The bulk of its agrarian structure remained untouched by foreign influences and penetrations. Such exploitation as existed in the countryside was through native landlords, who displayed classic feudalistic tendencies. The administrative structure, and by and large, the class structure of the country were both results of its own inherent dynamic of social and economic forces. Given this situation, the emergence of an effective revolutionary movement was facilitated by the availability of ample human and other resources to be mobilised against the established elite and foreign intrusion.

In India, under Pax Britannica, even the smallest peasant was not untouched by the British revenue collection system. The rural landlord/money-lender classes were largely creations of the empire. Their greed and exploitation were considerably different from their counterparts in China. As the pressure on land mounted, it became profitable to be a petty rentier than to be a cultivator. Thus, people who were part of the exploirative structure were both

numerous and more voracious in India. The middle class was the creation of the empire and looked to the values of their colonial masters. The entrepreneurs and industrialists too were more imitative of their European predecessors than innovative.

Thus, there were a large number of people, who partook of the "good life" under the British and their commitment to this good life was strengthened. This had two implications. Firstly, this large class of people became entirely against any change in the existing power relations, and therefore, a bottleneck in achieving redistribution of any kind. Secondly, their ways of life became a corrupting influence on the body politic and economic of the society. Even the have-nots, such as the urban workers, aspired to a status enjoyed by the middle classes. The "good life" offered by the colonial rule became something to look up to. This had the effect of co-opting those who would otherwise have been in the vanguard of demanding changes in the distributive structure. It would, therefore, have been well-nigh impossible to reduce the power of the techno-bureaucratic elite even in post-independent India, let alone replace it through a revolutionary change. Comparisons with China, therefore, are both unwarranted and entirely imaginary.

The positions of this middle class has, if anything, been strengthened in the period of planned development. Very clearly

today, India accommodates two nations. One, largely urban and largely middle class, has amenities of life and aspires to standards comparable to those of most developed countries. This would probably account for between 10 to 20 per cent of the population. The other lives in conditions which have hardly changed in the last three centuries and even less likely to change in the next three decades. The poor peasantry and the landless workers in rural areas find that they are completely shackled by their economic circumstances so that such mobility as exists is only downward. The rural rich, however, hope for, and quite often succeed, in achieving a reasonable urban life standard even in rural areas and try to send at least the younger sons to the cities. The urban working-class dreams of achieving the middle class standards that it sees around itself. A few of its numbers do. The rest labout on after this mirage. The middle class prospers. The rich perhaps remain where they were or would have been under any but the most drastic changes contemplated.

This dynamic of aspirations forces the urban underclass to be an unwitting ally of the middle-class in rooting for the continuation of the status quo. The rural poor are unorganised and politically powerless, save to be rounded up on the election day to vote for this or that candidate. The rural rich are of course a part of the power elite. It would have been erroneous to expect that the

colonial rule had any developmental priorities in the country. It is perhaps equally erroneous to expect that the power elite of independent India had any distributive objectives in planning.*

It is these class walls which will become the major bottlenecks for the development of the Second India. One begins to wonder whether aggregative projections of the kind we have seen in this series of studies have much significance given the existence of such major stumbling blocks. The explicit assumptions of at least one author and implicit assumptions of several others lead us to the conclusion that the authors do not expect any change in the status quo. This being so, any considerations regarding growth rate or a change in the mix of industrial output or in the mix of demand for food are not really going to be meaningful, insofar as the powers of economic decision-making will continue to be concentrated in the hands of people who have no desire to bring about any such changes. The exercises, therefore, may at most serve the intellectual curiosity of solving complex puzzles on the basis of simple assumptions in a rather neat fashion. As we have seen, some of the studies in the series do not even reach this expectation.

---

* In this context, Kalecki's thesis of intermediate regimes (1972) provides a useful analytical backdrop.

V

In spite of the weaknesses, the Second India studies are a good example of large-scale, complex and comprehensive exercise in futurological prediction undertaken in a developing country. Undoubtedly, they are a pace-setter for, and proto-typical of, similar studies which can be (and perhaps are being) undertaken in other Third World countries. Our review has shown the Second India studies are not a harbinger of hope for a country such as India. Also, the policy fallout is very limited and often of dubious quality.

What, then, is the future of futurology in the Third World? If the choice is between Malthusian multiplying and Gandhian utopia-painting, the future of futurology in the poor countries is very bleak indeed. One leads to quantitative despair and the other to qualitative kite-flying.

Futurological studies can be broadly classified into two categories: normative and positive. Normative futurology attempts to describe alternate paths to a specified desired future and then select one of these paths. Positive futurology tries to project the past and the present without pre-specifying the future.

From the viewpoint of policy, especially in the Third World, normative futurology could be of great value. It would certainly be nice to specify a future with minimal decent living standards for all and then work towards it. In a sense, planning is an exercise in normative futurology.

Positive futurology is apparently more value-free and, therefore, presumably has a greater claim to scientificity. It is for this reason, perhaps, that the Second India studies by and large use positivist models. There could be strong reasons for rejecting normative futurology--the political and administrative conditions for converting a specified future into reality do not exist. But such rejection of normative approach also implies a rejection of possibility of change in the relevant political-administrative conditions. Put another way, the positivist approach implicitly gives heavy weightage to status quo. This is quite evident in the projections which emerge from the Second India studies--the future looks like an enlarged and retouched version of the present. The "enlargement" is simply the result of the application of the magical compound interest formula and the "retouching" reflects the amount of humanist values each author could muster up to sprinkle on his concoction.

We believe that scholars interested in futurological studies of the Third World can play an activist role in stimulating real developmental and change processes. The efficacy of such a role would be determined by the degree to which the scholar can escape the domineering influence of elite values which tend to shape the premises and assumptions of futurological studies.

Third World countries face several basic infrastructural choices. Such choices are technologically and socially complex, require massive amounts of resources and long estation periods. With a modicum of objectivity, it is possible to lay bare the economic and social ramifications of such infrastructural choices. While the decisions would rest with the political-bureaucratic elite, futurological studies can generate options and clarify the consequences.

It is obvious that such studies are easier to handle when the choices have a strong technological bias. In such cases, the scholar can state the various issues and avoid explicit (though not implicit) conflict with elite values. In the Second India series, Parikh's study on energy is a good example of such futurological work. It analyses the consequences of technological options in energy generation and use, hints at preferred options, and leaves the rest to policy makers.

To those willing to make a break with the manufactured consciousness of Third World elites, futurology can become a powerful instrument of analysis and change. The background analysis for any futurological work will reveal that most constraints to growth and development (in the wider sense) in the Third World stem from the actions of the elite middle class which wants to create and recreate itself in the image of the developed West. Futurological studies, if they manage to break free of the hold of the pervasive elite consciousness, can show how the developmental processes are perverted and subverted in the interest of the few. Such studies can identify constraints, analyse opportunities and attempt creative solutions to the persistent problems of poverty, destitution and social atrophy.

References

1 Amin, Samir 1974 — Accumulation on a World Scale; A Critique of the Theory of Underdevelopment. Translated by Brian Pearce. New York etc.

2 Anon 1969 — "Notes: Growth of Employment - 1950-51 to 1968-69." Reserve Bank of India Bulletin 23. pp. 1909-1914

3 Bhandari, Labdhi, and Vora, M.N. 1978 — "Indian Distribution System: Role of Private Trade," in Public Distribution Systems: Evolution, Evaluation and Prospects. Edited by Nikhilesh Dholakia and Rakesh Khurana (New Delhi: Forthcoming)

4 Chattopadhyay, Paresh 1973 — "Some Trends in India's Economic Development," in Imperialism and Revolution in South Asia. Edited by Kathleen Gough and Hari P. Sharma, New York. pp. 103-129

5 Chenery, H.B. 1971 — Growth and Structural Change, Washington.

6 Denison, E.F. 1967 — Why Growth Rates Differ; Postwar Experiences in Nine Western Countries. Washington.

7 Felix, Fremont 1972 — World Markets of Tomorrow; Economic Growth, Population Trends, Electricity and Energy, Quality of Life. London etc.

8 Friere, Paulo 1972 — Pedagogy of the Oppressed, London.

9 Gough, Kathleen, and Sharma, Hari P. (editors) 1973 — Imperialism and Revolution in South Asia. New York.

10	Illich, Ivan D 1972	Deschooling Society. London.
11	Ishikawa, Shigeru 1978	Labour Absorption in Asian Agriculture. Bangkok.
12	Kalecki, Michal 1972	"Intermediate Regimes," in his The Last Phase in the Transformation of Capitalism. New York. pp. 115-124
13	Manne, A.S. and Bergsman, J. 1965	"An Almost Consistent Inter-temporal Model for India's Fourth and Fifth Plans," in The Theory and Design of Economic Development. Edited by Irma Adelman and Eric Thorbecke, Baltimore.
14	Sandee, J. 1960	A Demonstration Planning Model for India. Calcutta.
15	Swaminathan, M.S. 1973	Sardar Patel Memorial Lectures. New Delhi.