WHY RESOURCE-RICH INDIA IS AN ECONOMIC LAGGARD

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1. India's Development Model Needs Urgent Revision

Pioneer India Becomes a Laggard

India innovated many useful policies and institutions in the early postwar years. Her postwar development model, international diplomacy (such as non-alignment) the planning and other institutions, and politico-economic leadership in general were enthusiastically adopted by most developing countries. India's development model started with a bang and made a great impact on other countries in the 1950s. A few developing countries, specially the East Asian countries, broke away from India's economic development approach and experimented with an alternative model. India's neighbors, almost all South-Asian countries, have, however, followed by and large the same economic policies. Since they also have common culture, the terms India's Development Model and the South Asian Development Model will be used interchangeably.

But today India is a laggard in both growth and poverty alleviation, as may be seen from Tables 1 through 5. Table 1 gives long-run rates of growth of dynamic East Asian countries against laggard South Asian countries. From being as poor as India only two generations ago, East Asian countries have leaped forward by as much as 3 to 12 times. Table 2 presents similar statistics by subperiods, showing how growth brings about desirable changes in population too. An eye-opening information is summarized in Table 3, which reports annual rates of reduction in poverty and infant mortality. For the main defense of India's sluggish growth is that it pays special attention to alleviating poverty and other

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desirable social changes. Both indices have come down at much steeper rates in East Asian countries than in South Asian countries, and are much lower in the former group. Table 4 presents a snapshot of where we were in 1950 and where we are today in relation to East Asian tigers. Finally, Table 5 presents a scenario which deserves to be pondered over, keeping our future generations in perspective.

Lagging behind other countries in the growth rates of per capita income today is bad for the present generation and worse for future generations. Even a single simple aspect of laggardness would underscore the disastrous consequences on the country. So far India has been suffering from a brain drain to North America and the OECD countries. It will soon start draining its brain to the East Asian countries too, if early action is not taken to correct the past 4 generations course drastically. Since Asian countries are closer and their borders are porous, the problem will become much more serious than it has been in relation to North America and Europe.

What is not generally realized, although it is an extremely simple arithmetic, is that lagging behind other countries even by one percentage of growth rate opens up a significant gap in due course. India, along with the rest of South Asia, has lagged behind East-Asian countries by large percentages of annual rates of growth. The scenario presented in Table 5 underscores the point. Even when India's growth rate was at its highest during the last 5 years, Korea's rate of growth of per capita income was 10.3% against India's 3.0%. Note how much gap East Asian countries, starting practically at the same per capita income levels as in India, have opened up against India within the span of about 3 decades and how much more gap is in the offing. Looked at from a different angle, even if India departs from what Late Raj Krishna has called its Hindu Rate of growth and sustains its

significantly higher rate of growth of per capita income of the last 5 years, it will take her 84 years to attain today's levels of income of Korea. Put still differently, if Korea continues growing at her recent (1985-88) rate of growth of per capita income of 10.3% p.a. and India at hers of 3%, in one generation (say 20 years), the average Korean will be over 50 times more prosperous than an average Indian.[1] As a final tickler, if India wants to catch up with Korea in 2 generations (40 years) while Korea continues growing at her present pace, India's per capita real income will have to grow at 16.5% p.a.[2] That is a very tall order. India just cannot catch up with Korea and several other Asian countries ever. That opportunity is lost.[3]

What India can and ought to do is not to let the gap widen. This means aiming at a two-digit rate of growth of per capita real income, say by the middle of the decade of the 1990s, or at least by the turn of the century.

The modifications to India's model made in the mid-1980s were marginal. Even so, the earlier rate of growth of per capita income doubled. The decline in poverty was never as steep as during the second half of the 1980s (see Table 3). The literacy rate rose from 41.42% in 1981 to 52.11% in 1991, which rate is higher than any previous decade. The infant mortality rate declined at more than the trend rate. Exports increased at an annual rate of 11%, never attained in India's history before. Unemployment declined during the 1980s (Minhas and Visaria, April 1991). The Indian capital market witnessed an unprecedented expansion. Yet the liberalization process stopped soon after 1986. So entrenched are stagnating sociopolitical forces in India!

The old development model is costing India so dearly that any delay in the indicated change is going to make it more and more difficult to catch up with even those countries which as of

now are only a few rungs of the ladder up above us, e.g., Thailand, Indonesia, perhaps potentially Pakistan.

In Section 2, we discuss the genesis and the content of India's development model. Section 3 identifies the missing critical factor of development in this model. Subsequent four sections are devoted to some of the serious problems caused, damaging vested interests nursed, and reactionary attitudes generated in the process of the working of this model, and possible remedies thereto. The theme of the higher desirable and urgently needed modification of the model runs throughout the essay.

2. India's Development Model

In the political arena, India was the first among half a century or so of colonies to overthrow the yoke of colonialism. That opened the gate for other colonies to win freedom. Imperialist dominoes fell one after another. Within two decades, almost all colonies became independent. India's nonalignment policy was adopted, by and large, by all the countries of Africa, Asia, and South Central America.

In the economic field, India was a pioneer in ushering in an era of development planning and consonant policies, which started in the wake of the newly constructed first-generation theory of economic development. With the objective of availing themselves of what, in their informed judgment, was the best offered by the East and the best offered by the West, India's Founding Fathers embraced twin institutions of democracy from the West and centralized development planning from the Eastern Bloc. Many countries tried to emulate India's democracy, not all succeeded. Practically all developing countries adopted her economic development model. The five-year plan became a symbol of

development effort and an instrument of economic policy across three continents. Such was India's pioneering leadership!

In their desire to catch up with rich countries' levels of living as speedily as possible, India's founding fathers, and the postwar Indian economists in conformity to the first-generation development theory, believed that the Soviet model of centralized planning, tempered with the newly developed British model of nationalization, was a short-cut to industrialization and economic development. Democracy in the political field and central planning, anchored on the state ownership of the "commanding heights" of the economy in the economic arena (what they defined as a "mixed economy" and the politico-economic structure as a "socialistic pattern of society") were the twin guiding principles enshrined in India's constitution.

Besides the Soviet experiment, theoretical underpinnings for that development model were provided by leading development economists of the day. Young and middle-aged economists of India of those days were mostly graduates of the Cambridge School, at a time when Keynesianism was reigning supreme. Both Kenyesianism and the post-Kenynesian Harrod-Domar models emphasized the demand side, in which the decisive role of prices in determining the supply and allocation of resources was absent. (As every economic student of today knows, that line of thought has suffered almost a reversal.) In Latin America, Raul Prebisch's theory of permanently worsening terms of trade against primary-producing countries led to the implication of a strategy of forced industrialization and import substitution. In Europe and North America, Nobel Laureate Arthur Lewis's theory of the dual economy and Ragnar Nurkse's theory of "balanced growth" implicated the policy of state intervention for industrialization and resource mobilization. The economic theories of self- sufficiency, if not autarky, of Bengali intellectuals, who dominated the South Asian economic scene among

the first generation development economists (and still do in the third generation) went even further. These included Mahalanobis's consumption-restraining 4-sector model of heavy industry being the anchor for exponential growth, Amartya Sen's theory of the choice of technique to make machines that make machines, and, on the heels of that, Sukhamoy Chakravarty's growth paths aimed at maximizing terminal capital, and similar models by others. With very few exceptions, almost every celebrated development economist of those days advocated the same approach: centralized planning, public ownership, state monopoly, import substitution, restrictions on multinationals, self-sufficiency, inward-looking trade policy, heavy industry, neglect of productivity, administered prices, various other constrains on the market, and so forth.

A gigantic episode of the 20th century has been the collapse of the Soviet politico-economic model, for which extreme sacrifices were made and in which high hopes of the poor were pinned. The modified economic development model of India, which to a large extent was inspired by the Soviet economic experiment, has also not performed well, at least not anywhere close to the competing models, for instance the East Asian economic model. Nor have the Soviet-type models fared creditably in other countries. In this respect, it may be noted that for empirical tests, economists work with market-generated data mainly because they cannot perform controlled experiments. Interestingly, in the area of economic development, half a dozen almost controlled experiments have taken place for a sufficiently long period of approximately 4 decades, from the early postwar years through 1989 and beyond. In these experiments, almost homogeneous people of the same background, culture, and genetic inheritance and their one economy were subdivided into two separate entities and subjected to two different development models, one free enterprise, the other command economy. The results, from the application of the

methodology of the survivor technique, namely the success of the former and the ultimate bust of the latter, need no substantiation. Compare the one-time homogeneous parts of:

South Korea against North Korea,
West Germany against East Germany
Taiwan China against Mainland China

and less homogeneous but in many respects similar:

East Asia against South Asia
West Europe against East Europe
Kenya against Tanzania (See Tables 1 through 5).

East Asian countries started with their outward-looking development model a decade or more behind the inward-looking model of South Asian countries. They have already gained, or are on the road to gain, the status of what the World Bank has categorized as middle income developing countries. As compared to them some South Asian countries, remain mired in the poor dump of the Third World countries, while others have slipped down to the basket status of the Fourth World poor countries. Besides, in East Asian countries, on the whole the poverty incidence is lower than in South Asian countries. They are, or are getting, tough in international competitiveness. Several of them enjoy large trade and balance-of-payments surpluses. The gap between their productivity growth and ours is widening. Command economies by definition give less economic freedom to the constituent units of a federation than market economies. Over and above that their economic performance is inferior. While command and poor economic performance may not be the primary cause of fratricidal conflicts, there seems to be a strong negative correlation between them, inasmuch as communal and regional conflicts have all but died down in Malaysia and Singapore, whereas they have perhaps never been

worse in South Asia's history, and are seriously threatening to create chaos in India.

India policy-makers, whether or not they belong to that group of "politicians who," a la Keynes, "believe themselves to be quite exempt from any intellectual influence (but) are usually the slaves of some defunct economist", must be baffled. Indian society seems helpless and resigned to the bad things around. Indian economists have messed up the whole economic superstructure. Will they rise to correct the course of the economy?

As stated earlier, almost all South Asian countries have followed the inward-looking model of India. Almost all East Asian countries, with the exception of China, Vietnam, Cambodia, Laos and, to some extent, the Philippines, have followed an outward-looking approach. Comparisons of the relevant results of these two experiments which have gone on for periods of 1 to 4 decades, are summarized in Tables 1 through 4. It may be seen that growth is accompanied with the alleviation of poverty. On the other hand, over-preoccupation with poverty by compromizing growth actually amounts to sustaining poverty and missing both growth and poverty.

Having observed these clear-cut contrasts, even those who invariably used to take shelter behind the efficiency-equity trade-off to support the command model must be wary of it, inasmuch as East Germans, and with other East Europeans countries for that matter, have evidently put much lower value on socio-economic justice (assuming command economies had provided higher levels of it) relative to growth than has been implied heretofore.[3]

In hindsight, a possible explanation for India's right choice of democracy was that the West's democracy model had been successfully tested before. But the Soviet centralized economic planning and the first generation theory of economic development, on which India's economic model was based, were untested for sufficiently long periods.

The missing critical factor in India's Development Model

It must be stated to the credit of the early postwar leaders of the India, that they were groping for a shortcut to growth with economic justice. Their goals were lofty. Intentions were honest. Efforts were genuine. Impatience with poverty and the intense desire to catch up with industrial countries was admirable. The first-generation theorists and practitioners perceived that the market was not going to bring about economic development automatically. The need for social and economic infrastructure had a high priority, which only the state could meet. Private saving in developing countries was so low that public institutions to mobilize resources were considered critical at that time. The expectation was that public enterprises would generate surpluses for investment. Consistent with that day's theory, priority sectors were investment-good-producing industries, whereas profit maximizing private entrepreneurs were considered to prefer investment in low-priority consumer-good-producing industries and trade. The suspicion of the foreign firm was genuine, as the bitter historical experience of the East India Company was fresh in the minds of South Asian theorists and planner. Future generations will find it hard to believe that a single multinational, called East India Company, with 1700 British shareholders, first acquired trading rights and then conquered and ruled Greater India for over hundred years before the British Crown took it over after the unsuccessful Mutiny of 1857! India started with an anti-poverty, anti-trade, anti-colonial, anti-

foreign investment, anti-big local firm, anti-consumer, and anti-rich sentiment and policy 4 decades ago, which approach persists even today in all its facets.

In those times, capital formation per se was believed to be a panacea for development. As a result, a sizable industrial base has been built up, through its cost (in terms of what would have been achieved though alternative development models) is not known, but must be very high as will become apparent in this note. The country has thrown up large cadrer of competent entrepreneurs and managers. While local entrepreneurs may have grown complacent or even slothful under the shelter of high protection from foreign competition, their mettle is sufficiently evident from the fact that those who could get away from the over-regulation in India have done exceptionally well in free enterprise economics. For instance, the Patels have captured well over a quarter of America's motel business within the span of one generation. A remarkably high rate of saving of over a fifth of GDP has been attained, despite the failure of public enterprises and budgets to generate respectable surpluses. A well diversified training and R&D capacity has been built up, though its quality and output per unit of input are despairing. In short theorists clarified important factors of growth, the practitioners modeled them into operational framework, and policy-makers enacted and implemented the implicated policies with great earnestness. What was modeled seemed justified, at least for the early stages of developing countries. But what was missing from it was critical, namely productivity and international competitiveness.

New Development Economics

When the first-generation development theory was constructed, baby productivity was not born yet. The birth of the modern theory of productivity took place in 1957, when Robert M.

Solow [1957] startled the profession by a finding of his research that (co-jointly with his related writings of the 1950s) was to win him the Nobel Prize three decades later. The finding was that primary factors of production--land, labor, and capital--could explain no more than 1/8th to 1/3rd of growth in output in America and other industrial countries. The rest was due to what he called the "residual factor of productivity". Solow's "residual turned out to be one of the most productive seeds ever sown in economics. It gave rise to a bandwagon of research on productivity growth and its sources, and consequently a new theory of economic development.

Three years after Solow's discovery came the announcement by another Laureate, T.W.Schultz [1960], of another hallowed economics baby as the major source of productivity growth, that was to turn around the entire economic discipline, causing Paupperian intellectual revolution in economics, namely the modern human capital theory. Laureate Schultz reported a very high rate of return to investment in schooling over a long period, which in part explained Solow's "residual".

When this writer published his book, Fertilizer in Economic Development (New York, 1968) a reviewer (and a few Indian friends verbally) remarked that while the book contained an excellent analysis, the contents did not justify the title that it was anything but development. For I had concentrated on productivity growth and the sources of technological change as the key sources of development, rather than the accumulation of physical capital per se. The new theory of development was in the making.

The interest in productivity and its sources soared during the Development Decade of the 1960s. The theory of economic development gradually underwent revision. In the new theory of development economics, technology was recognized as the critical

factor of development, as is highlighted, among others, by the late 1960s work by Hayami and Ruttan (1977) and the more recent study by Chenery and Srinivasan (1988).

3. The Neglect of the Critical Factor in India's Development Model

By far the major determinant of growth, as Solow showed 33 years ago and other have done since, is productivity. The main source of productivity growth is technological change, where technology is now defined as a combination of four components namely technoware (hardware and software), humanware, infoware, and orgaware. The major input for technological innovations, both from domestic sources and from the adaptation of technology imported from abroad, is R&D by high-calibre scientists and technologists. The state of India's concern about industrial technology and productivity may be adjudged from three aspects: the input side, the results side, and the policy side.

The input side

From the input side, India has not done badly, as may be seen from Table 6, where comparisons are made with Thailand (with a lot of multinational presence) and Korea. The effort is, however, dwarfed by that in Korea. Surprisingly, a good 18 per cent of total R&D of India goes to industry. Yet results are very disappointing. Only about 1/5th of total patents in force in India protect domestic patent holders. "Not even 10 percent of Indian patents (or about 2 percent of total) have any significant technological value" (CMIE, 1990, Table 11.7). Perhaps the fact that 95% of R&D is used by the public sector ICS&T has to do with it, inasmuch as the productivity of public sector institutions is generally low.

India's impressive progress in high tech is well-documented. Its fruits in lowering costs and increasing productivity should start appearing as the technology is diffused. But productivity-increasing technologies and processes, which are reflected in international competitiveness, are not yet in evidence.

A more revealing picture emerges from the input in the promotion of productivity per se, as distinguished from the promotion of technology as the major source of productivity. Here India has done very very poorly. It may be seen from Table 7 that the rectification of the relative neglect of productivity in India's development model has at best been cosmetic. Following Solow's revelation of the critical role of productivity in growth in 1957, India was quick and perhaps the first developing country to establish a productivity council in 1958. The cosmetic nature of India's productivity effort may be adjudged by comparing its 33-year-old productivity council against Singapore's productivity board, which started 10 years behind India. With only 0.3 of one per cent of India's population, Singapore has 255 experts on its professional staff against India's paltry 200. The results are not difficult to see. Go as tourist to Singapore, a country that has little to show as tourist attractions: you come back pleased with the quality of service and hospitality at low cost. Go as tourist to India, full of sparkling, breath-taking tourist attractions: yet you get inconvenienced and waste time unduly at every phase from the airport to the hotel, to the tourist bus, to the bank, telecommunications, to the storekeeper, and you go back frustrated with the quality of services and the productivity of workers. The reputation spreads by the word of the traveller's mouth to far corners of the world. Publicity for tourism is free.

Little is being done to increasing productivity. Our mental horizon seems not to get away from our first-generation model of development. How many productivity-awareness sessions have, for instance, been organized in India compared to the productivity awareness weeks in Korea? Koreans have not been content with their technology miracle in industry. They have organized productivity weeks to create productivity consciousness by appropriate training, demonstration, and inducement through fairs, media, and seminars to not only factory, office, and shop workers, but also the housewife, the artesan, the farmer, the student, and all.

The results side

The change in total factor productivity (TFP) in India's manufacturing sector--where TFP is defined as the change in the ratio of output to all inputs appropriately weighted--is estimated to be negative till the mid-1980s (Ahluwalia, 1985 and Brahmananda, 1983, Salim, 1991). It was negative during the 1970's and 1980's in Bangladesh. TFP was positive 2 percent to 5 percent in several East Asian countries (WB, 1989). That means the unit costs of production in the latter developing countries fell at rates exceeding 2 percent to 5 percent per annum relative to those in India, deteriorating India's export competitiveness and import substitution. India tried to compensate for that by increasing fiscal and financial assistance to its industry. That caused increased smuggling and similar substitutes, besides huge costs to the overall economy, which exacerbated industrial sickness and lowered the potential rate of growth of the economy. Indian manufacturers are not eager to stamp "Made in India" on their exports, because they are downgraded in overseas markets due to inferior quality. India's manufacturing exports declined from 0.6% to 0.4% of world exports from 1976 to 1983 at a time when

developing countries exports of manufactures rose from 15.9% to 17.5% of world exports.

Another index of the neglect of productivity in India is evident from the fact that machines and equipment once installed have almost invariably been subject only to physical depreciation, but rarely obsolescence (rendered redundant and unproductive through the arrival of superior new machines). Take the example of India's steel plants.

India installed 3 best-practice steel plants by the early 1960s. They were due for renovation towards the close of the 1960s, but nothing was done. World technological change did not wait, and by the early 1970s, Korean steel was selling in world markets at half the production cost of Indian steel. The same is true of several large paper mills and industries in general. The incremental capital-output ratio in Indian industry has more than doubled since the 1950s, thereby offsetting the gain of more than doubling of the rate of saving. Sick industrial units increased by 3123 percent and their outstanding bank credit by 521 percent during the decade 1977-87. In the first half of 1990-91, the reported losses of sick units amounted to Rs. 1526 crores. India's high-cost economy and technology-gap have been topics of debate for a decade. Even some Keynesians brought up in the tradition of the Harrod-Domar models, have recognized the futility of undue overemphasis on the quantity, as distinguished from the quality, of capital formation. "The policy we have followed for capital formation.., from the point of view of maximizing productivity and the impact on growth, has been erroneous" (V.K.R.V.Rao, 1983). When will India's policy-makers realize?

The policy process

The legacy of the 1950s development model of India is so deeply rooted in the Indian economy, and the thought of accepting followership by the traditional leader of the developing world in economic development strategy is perhaps so demeaning that even a quarter century after the revision of the first-generation development theory and the well-documented experience of a much more rapid development under the productivity-oriented East Asian Development Model, the neglect of efficiency and productivity continues unabated.

A few typical cases of this behavior may be cited to underscore this state of affairs.

1. Perennial deficits, low productivity, and outmoded technology continue in many public enterprises. When the denationalization of 20 percent equity of public enterprises was announced in March, 1991 (a good step forward), loss-making low-productivity industries were not in the list, only profit-making units were marked out for divestment. Competition, a condition for efficiency, requires free entry and free exit. The prevention of the exit and the sustenance of depressed units is cancerous to the economy.

2. Scores of prices are administered, causing widespread distortions and, hence, inefficiencies which reduce productivity. A number of price- administering agencies (CACP, BICP, Public enterprises, and so forth) fix prices. India's bureaucracy has been entrusted with a vast network of micro economic management. The practice that supports inefficiency in India, apart from supplanting the resource allocation role of the market, is that administered prices have little relationship to relative scarcities or opportunity costs, such as the true resource cost of

production of power, shadow wage rate, and market rate of interest. Nor are administered product prices related at all to border prices. Agricultural support prices are fixed on cost-plus basis, where costs have no benchmark of opportunity costs. How is one to know whether the crop being subsidized has relative comparative advantages? View the case of rice in rain-scarce Punjab, for which an average of 22 irrigations are needed and whose cost is based on subsidized electricity at approximately 1/11th the cost price of power; subsidized prices of irrigation, water, which do not cover even the recurrent costs of irrigation works, not to speak of capital costs; subsidized seeds; subsidized fertilizer; as well as rice's share of interest subsidy and default subsidy [Gulati, 1991]. With these subsidies rice is crowding out wheat which needs only 3 irrigations.

The price of fertilizer, in turn, is determined on the basis of administered prices of natural gas and other inputs, and is a sort of an average of the "retension prices" of different plants, thus supporting inefficiency in the fertilizer industry. Fertilizer industry uses feedstocks and machinery from distorted markets. The machine-making industry consumes steel and other materials at similarly distorted prices. It is a web of administered prices which are subject to high standard errors, even if these were relevant.

The calculated prices with cumulated standard errors are supposed ultimately to allow the farmer to earn 5 per cent to 10 percent rates of return. What an undertaking for fine-tuning!

3. Practically the only valid economic reason for protection to an industry is the infant industry argument, namely that a new industry (having potential comparative-cost advantage) ought to be protected from foreign competition, in principle for 10 to 15 years, to enable it to lower its cost per unit of output through

reaping economies of scale and other benefits of specialization and gaining a foothold in markets. The industries of India have enjoyed protection for extended periods of 3 to 4 decades by now. Still they remain noncompetitive and survive on protection and subsidies. The remedy has, indeed, become a cause of the malady: protection has obviated the need and removed the pressure to become efficient, raise productivity, and renovate and adjust, on the one hand, and has increased sickness by making smuggling and clandestine imports highly profitable on the other hand. Yet the indicated protection and import substitution policy is continuing. The recent trend from reliance on quantity restrictions to tariffs is to the right direction, but India has one of the highest tariff walls in the world today (see Table 1).

4. Subsidies cause excess demand, price distortions, and inefficiencies. The social costs of subsidizes industries are usually very high. India has burdened itself with one of the heaviest subsidy programs in the world. Her major subsidies, as of 1988-89, include the following:

Subsidy to agricultural sector (Source: Gulati and Sharma, 1991)		Rs Crores
1.	Fertilizer subsidy	3,354
2.	Irrigation subsidy (maintenance and operation costs plus the annualized capital cost of irrigation works net net of revenues)	over 10,000
3.	Electricity subsidy (an underestimate, defined as the difference between average cost of electricity generation and distribution per unit sold minus average revenue per unit to agriculture) to agricultural sector, which consumed 26 per cent of national electricity in 1989-90	3,475
4a.	Interest subsidy as % of loans: 4.5%	NA

4b.	Annualized debt-service subsidy on estimated Rs 10,000 crores of agricultural debt written off	2,000
	<u>Non-agricultural sectors</u> (Source: Diverse)	
5.	Food subsidy	22,000
6.	All publicly provided economic services (supposed to be provided from the national budget hence not included in total) (Mundle and Rao, 1991)	25,000
7.	Annualized default subsidy on Rs 7,000 crores of outstanding credit of sick industrial units	1,400
8.	Tax expenditures, tax concessions, other similar fiscal incentives, etc., not estimated	NA
9.	Subsidy to loss-making public enterprises	1,733
	Total (excluding items 4a, 6, and 8)	43,962
		or 11.2% of GDP

That is a whopper: over 1/9th of GDP in straight subsidies! Imagine what infrastructure or industrial superstructure can be created by investing this sum annually, rather than putting the economy on crutches!

That is not all. The social costs of distortions caused by these subsidies are additional to the above numbers. For instance, the waiver of debt to farmers has put banks out of gear, caused inequities between the influential, largely middle class borrower farmers and the largely poor non-borrower farmers, increased the budget deficit, dampened saving, and has caused malallocation of resources from other groups to the erstwhile debtor farmers. Fertilizer subsidy is given to provide fertilizer at cheap price to farmers. Even its nominal price has not been raised for the past 6 years. Once given, subsidy becomes a

politically sacred cow. Recently India's next-door neighbor, Bangladesh, has privatized fertilizer distribution (among scores of traders) and has eliminated subsidy. The result? The real price of fertilizer has come down despite elimination of subsidy. So much was the waste and inefficiency of the centralized public distribution system. Can India take a lesson?

Many more types of policies can be cited, but the point has been made. The long and short of the discussion is that practically none of the policies under the Indian development model are productivity-promoting. Protection, controls, subsidies, too much regulation, too many licenses, administered prices, nationalization--all nurse inefficiencies and cause low productivity. To reform these policies, the fundamental development model needs to be revised.

Next we turn to some of the special areas where present policies are causing grievous harm to the economy and where reform is urgently needed.

4. Corruption--Inherent or Policy Caused?

Correct remedies of economic ills call for correct diagnosis. A fundamental trait in which the economist differs from other social scientists/scholars is his way of thinking to identifying cause-and-effect relationships. The economist's comparative advantage over other social scientists/scholars lies in discovering hidden costs and hidden benefits, and hidden causes and hidden consequences of occurrences, something not directly visible here and now, but which depends upon the changes in people's behavior when they react to policies and imposed solutions to problems. In this section I will discuss a serious malaise of the Indian economy which critically impacts efficiency

and productivity but whose root cause and, therefore, effective remedy allude us for lack of correct diagnosis.

The reference is to corruption, particularly illegal corruption in smuggling, bribery, tax evasion, and black-marketing, and legal corruption in the form of rent-seeking.

Almost every Indian friend I have talked to on corruption asserts that we are the most corrupt people in the world. Interestingly, I have heard similar statements from the people of a number of other countries, about their respective country having the highest corruption in the world: Nigeria, Panama, Brazil, Bangladesh, Nepal, Indonesia. This kind of impression is held particularly by those individuals who have not been outside their own country, to be able to rank their personal experiences and observations. Space does not permit description of corruption in different countries. An instance of a single case should put the level of corruption in India in perspective.

The present writer was in a foreign country in 1981, at a time when the country's civilian government was a few months old, after the military had gone back to barracks. Newspapers carried a story daily about a missing sum of 2.3 billion US dollars out of a total petroleum export value of US Dollars 10 billion of the previous year. There was little clue to where it had evaporated. After several months inquiry, it was discovered that the money was found in the Swiss account of a senior general. Within about 2 months the final verdict came: the money (to repeat 2.3 billion dollars) was alleged to have been deposited in that account through a "clerical error". The money was recovered and the case was closed. Nothing happened to that general, who continued serving without any demerit. Compare it with the Bofors case in India in which mere suspicion of half a billion dollars in illegal commission dislodged an entrenched popular party from power and destabilized the country.

Novelists are unique in perceiving the life, culture, and things of a people correctly, inclusively, and expeditiously. Khushwant Singh is a great novelist and political interpreter of India today. He has also travelled abroad. Therefore, what he writes may be taken to represent the general view of Indian life and behavior. But he is not an economist. As discussed earlier, an economist is one who has analytical training to discover hidden consequences and hidden causes. At the risk of appearing immodest, my own experience and the application of economic propositions to corruption prompt me to agree with Khushwant Singh on the level but disagree with him on the causes of corruption as given in his We Indians (4th reprint 1990). According to him, "the scarlet thread of bribery and corruption runs through the fabric of our society," and "the most important single cause for corruption is economic insecurity, and that the most potent cause of corruption in the administration is the meager wages drawn by government servants...," though he is right when he qualifies the latter statement by "[relative) to the power they wield." It is undeniable, however, that "we have established a black record of corruption". (pp. 85-96)

Theories of corruption

Corruption is an unproductive activity and reduces productivity and growth. To understand its root causes is extremely important. Let me summarize the economic theories of the root causes of the major forms of corruption. Corruption will in general be higher the higher the anticipated return and the lower the cost and the risk of getting caught, or the higher the chance of bribing out the law-enforcement agent if caught. In India, the profit from those activities which are generated by licenses, controls, and similar restrictions are high while the risk of getting caught and not being able to grease the palm of the law-enforcement personnel is very low. The important point to

be noted is that the indicated high profits and low costs of corruption are not inherent in the Indian society but are created by government policies, which are immiserising even on standard economic grounds. The root cause of smuggling and the related forms of corruption is high protection of domestic products from foreign imports, such as high tariffs, import quotas, foreign exchange controls, and bans and quantity restrictions of various sorts. High profits of smugglers enable them to carry on their activities by bribing the customsman, the policeman, the bureaucrat, the politician, and even the judicial man. The root cause of black marketing is price and quantity controls, high marginal tax rates, and the like. The root cause of rent-seeking (The UDP of Bhagwati and Srinivasan, 1982). is licenses, sanctions, franchises, permits, and similar instrumentalities of controls. Since most of these instrumentalities and regulations are administered by bureaucrats, they are aware of the high gains and naturally get tempted to share in the easy and abnormal returns from these activities. Nepotism mushrooms when accountability is low. Naturally, nepotism tends to be high in public enterprises. Politicians chip in. For after all they think they are the bosses of bureaucrats.

To conclude, (1) yes, Khushwant Singh, corruption is rampant in India. But no, Khushwant Singh, in all probability corruption is not inherent among Indians any more than it is in other societies of comparable economic status and similar policies. (2) Corruption is largely caused by India's policies. India has those policies galore which cause corruption: high protection that causes smuggling; maze of price (including urban rent), quantity, and other controls and regulations, which cause black marketing; high marginal tax rates on income and wealth, which send money underground; plethora of licenses, which promote rent-seeking; a very large number of massive public enterprises, with fax accountability, which facilitates nepotism and cause inefficiency;

and so forth. Despite the alleged widespread political corruption from the political worker through the MP and the Minister in India's democratic system, I would venture to adjudge that it is nowhere as bad as in non-democratic systems. In India, at least you can get questions asked in the Parliament and take your case to the court and expect justice. In non-democracies, you generally cannot even do that. You raise a finger at a rent-seeker, either the taxman or the policeman or someone else may be knocking at your door the next morning. Of course vigilance is the price of freedom, one must not stop one's criticism simply because other countries have worse corruption.

Corruption cannot be mitigated without cutting its roots

The theory of corruption outlines in the preceding 2 paragraphs creates serious doubts about the efficacy of the kind of solutions usually suggested, such as that by Khushwant Sings, namely that to eliminate smuggling, "both the smuggler and his client must be severely punished," as long as the root cause (high protection and exchange control) is not eliminated. Has not the mightiest of the mighty superpowers, the US, tried its hardest by severe punishments to stop smuggling of drugs into America? It has put a huge coast guard out which combs the oceans around the US coasts and flies its planes all around its borders. It has sent its military to Colombia, Venezuela, and its intelligence to other countries, and has helped local governments with technology and money to stem other smuggling at source. It has subjugated Panama and arrested that country's military dictator and alleged smuggling lord. Has it stopped drug smuggling? May be a little, but one can buy as much of drugs in the streets of New York and other US cities, as one wants, even when drugs are considered bad for health and social behavior. Smugglers still bribe the American coast guard. Profits are high, so is corruption in this area. Why is Singapore relatively less prone to smuggling and

black-marketing? It has none of those controls and tariffs we have talked about.

The notion that Indians are inherently corrupt serves actually as a red herring that distracts attention from discovering its true causes. It tends to develop self-pity, helplessness and a complacent attitude that nothing can be done, except punishment of offenders. In one breath, for instance, industrialists will castigate the administration for not doing enough to stop smuggling. In the same breath they will ask for more protection and stricter quantity controls on imports of the products they produce.

Only if it is understood that corruption is caused primarily by certain policies and is not inborn may social pressures build up to reform those policies. The following measures, which cannot be substantiated here but are evident enough, given the preceding discussion, and may be provocative to some, will drastically reduce smuggling, black-marketing, and other corruption, reduce inefficiencies in the economy, and lead to higher productivity and growth:

1. Legalize smuggling. That is, let there be free trade (including that in foreign exchange and gold). Impose a uniform tariff of, say, 15% on all imports, to collect revenue.

2. Legalize black marketing. That is, let people buy and sell all commodities openly and freely. Market equilibrium price (where supply equals demand) will prevail. Controls on all prices, including rent control and foreign exchange control, will have to go. In the long run, losers due to decontrol and derationing will also gain.

3. Eliminate most licenses and sanctions. Auction (rather than assign) those licenses that must be retained. Rent-seeking will evaporate. People will spend less time on unproductive activities and negative-sum games, and more on productive activities and positive-sum games.

4. Divest/denationalize those public enterprises, which produce private (as distinguished from public) goods. Bust all public and private monopolies (except where international competition makes them innocuous and internationally more competitive). Let competition prevail. Nepotism and corruption of the bureaucrat and the politician will dwindle to insignificance. Productivity will go up.

5. Reduce marginal income tax rates to no more than 40%. Abolish wealth tax or lower its rate drastically. Much of black income and black wealth will become white. Revenue is unlikely to suffer.

6. Eliminate subsidies. Government's house will be put in order. Inefficient firms/industries will shut down. Health will come to the economy.

7. Let loss ventures go bankrupt and let sick firms die. Cheating and taking undue advantage of concessions and reliefs will go. Some corruption will still remain, but a lot less.

5. Will Privatization Per Se Remedy the Situation?

Productivity and efficiency are notoriously low in the public sectors of any country (with the possible exception of Singapore where public enterprises are fully exposed to competition from abroad). A large number of public enterprises of India is depressed. At the same time, a lot of industrial sickness prevails in India's private sector, too. Almost three-quarters of India's small sector (private and supposedly competitive) are estimated to be sick. Prima facie, therefore, privatization is not a panacea for industrialization. But that judgment is probably premature, because India's private firms have not been allowed to function in a free-market environment. There are well-recognized pre-conditions that must be established for the private sector to function.

Twin theorems of efficiency

Markets for private goods work best in competitive environment. The touchstone is economic efficiency. Defining efficiency in production as an organization in which no change in technology or technique of production or recombination of resources can produce more output value, the two well-known theorems of efficiency may be stated as:

1) Any competitive market equilibrium is efficient

2) Every efficient allocation is a market equilibrium

Corresponding to these efficiency theorems there are two welfare theorems:

a) Every efficient allocation is a welfare maximum

b) Every welfare maximum is an efficient allocation

Finally, recall the "Zero-profit theorem", according to which, in the absence of a stream of technological changes or new superior resources, competition reduces economic profits to zero. Each factor of production tends to receive its marginal product. That is efficiency and, according to a theory of justice, also equity.

Why most of India's private firms are not internationally or even nationally competitive is because, among other reasons, they have been removed from the competitive domain. The prices of a large number of private enterprises are administered by government. They cannot invest freely. They are restricted from expanding capacity to what they may adjudge optimal levels; from broadbanding products; from exiting from one product and entering another; from locating where they prefer; and from importing machinery and their inputs at world prices. They are prohibited from producing any of the 863 products reserved for the small

sector and several more reserved for the public sector. The small firms, in turn, enjoy various tax concessions and other assistance if they stay small, and lose them if they grow. That is not a competitive free-enterprise environment in which alone private sector can flourish. Private firms operate in a byzantine maze of regulations. Until a lot of deregulation and freedom of enterprise takes place, India's private sector cannot become a benchmark of efficiency. Therefore, no significant improvement in either productivity or growth may be expected.

An experiment in privatization in South Asia

The success cases of (partial or full) privatization of cement in India and fertilizer distribution in Bangladesh have already been discussed. There are unsuccessful cases also. A substantive experiment with private and public firms in the same industry has taken place in a country that has followed the South Asian Development Model. In Bangladesh, about half of the 70 to 80 plants of each of the jute textile and cotton textile industries were denationalized during 1982-83, the first year of the reign of former President Irshad. Till 1990, private plants were found to have done no better than public enterprises (Sahota, 1991). Many lessons are to be learnt from that experiment. Apart from the restrictions discussed in the preceding paragraph, in Bangladesh's denationalization process, two critical preconditions were ignored.

1. The change was brought about without adequate analysis. The deficits of public enterprises of the early 1980s appear to have goaded the government on to get rid of some public enterprises at any cost. Several experts believe that the problems that are plaguing the denationalized firms could perhaps have been avoided had its first phase--namely analysis, policy design, and information--been duly carried out. The problems

being faced in 1990, six years after the denationalization, include:

The continuing dispute between the new private owners of denationalized industries and the public sector about the assumption of liabilities incurred by these industries since nationalization in 1972; default on installment payments by the buyers of public enterprises; difficulties that banks face due to low rates of recovery from new owners and having to waive some of their accumulated interest; and problems that private owners face concerning foreign loans due to exchange rate changes. The 1915 contract laws according to which these transactions were made need to be modernized. Similar problems relate to the 1960s law concerning the banking business, and similar legal and procedural matters. Some experts believe that the second-generation private entrepreneurs were not yet experienced enough to manage large enterprises. They themselves had not cultivated the industrial culture of dealing with DFI credit, labor, public officials, and the like. Their debt default probably did a great damage to industrialization. Even during 1985-86 and 1986-87, when proper penalties and legal process was established for dealing with defaulters and when donors had set conditions for further loans, the recovery rate did not improve: it was 8% for BSB and 13% for BSRS (Rehman Sobhan and Binayak Sen (1989). The overwhelming evidence of the inefficiency of Bangladesh's public enterprises and the swelling international environment favoring the change could not obviate the need for the requisite analysis and the data needed for such major policy shifts.

This is not an isolated case. The neglect of analysis seems rather general in South Asian countries. Sometimes it appears as if policy makers and bureaucrats either doubt the practical role of analysis or tend to downgrade research in general. One wonders how much economic analysis can have preceded the decisions taken

in India regarding the waiver of agricultural loans in presence of staggering budget deficit; the quota fixation for Scheduled Tribes, without regard to the already low efficiency levels of government services; the raising of already high tariffs in the late 1980s at disparate rates; guaranteed employment to every one who seeks it, as if that is possible and as if self-help, self-employment is a taboo; the proposal by the Chairman of the Standing Advisory Council to establish parity between the incomes of jawans and kisans; and various promises made by politicians during elections!

2. As discussed before, private markets operate most efficiently under competitive conditions. Little attention was paid to competition when denationalization was carried out, whether within private firms, within public firms, or between two sectors. In the latter area, private entrepreneurs feel that whatever competition there is is unfair, inasmuch as public enterprises enjoy certain facilities not available to private enterprises and the former also set wages for the latter, though indirectly. There is no trust-busting in Bangladesh. It is well-known that while there is an economic role for a public monopoly, there is hardly an economic case for a private monopoly, much less for a highly protected private monopoly.

The result of both of these drawbacks has been low efficiency and poor performance of the private sector.

Denationalization is really not in question today. It is how you do it, analyze it, phase it, sequence it, monitor it, and what accompanying changes are in order.

Lack of Competition is the main but not the only reason for the inefficiency of public enterprises

There are 3 main reasons for the inefficiency of private-good-producing public enterprises relative to private firms:

(1) Lack of competition.--The key factor is competition. Public enterprises have been insulated from competition not only in being largely monopolies but also through no requirement of accountability and profitability. Many economists think that exposing public enterprises to competitive environment, by allowing them independence and discretion, by imposing accountability, and by withdrawing all support (except to defray the estimated costs of the imposed social service part, if any) will enable them to function efficiently and to compete with private firms. While exposure to competition, especially when entry and exit are also free, will go a long way to enhance efficiency, policy-makers and economic advisors may be disappointed, if public enterprises are not privatized, due to the following two additional reasons:

(2) Bureaucratic red-tapism and sloth.--Any public entity has, in one form or another, to function under bureaucratic rules. Even divested public enterprises will remain under bureaucratic influence in India if the governments retains 51 present shares. Bureaucracy is inconsistent with entrepreneurship. Bureaucracy works best when it functions by the rules. Discretion and arbitrariness in government matters opens up windows for corruption. Red tapism, slow movement of files, risk aversion, and sloth in general are typical bureaucratic characteristics.

Quite the contrary are the traits of entrepreneurs: discretion, gut feeling, animal spirit, risk-taking, and speed. The twin shall never meet.

(3) Political interference.--Politicians have no masters. They are the bosses of bureaucrats. Public enterprises provide them a means to distribute rewards to their supporters through nepotism, and interference in fixing prices and influencing marketing transactions. For instance, in a South Asian Country, while an ex-general was its President, several ministers were retired generals, many chairmen of corporations were retired brigadiers, and numerous license holders were colonels. In many public enterprises of that country employment increased by almost 50% while their output remained unchanged since they were nationalized in 1972. As another example, if the Indian Government were small in size and public enterprises were divested (currently the government accounts for 71% of the organized-sector jobs), the caste-based job quotas will lose their significance and may become a non-issue.

In short, to gain maximum efficiency and productivity, which is essential for international competitiveness, while accountability and autonomy in public enterprises will certainly do some good, there does not really seem any half way house between nationalization and privatization. The country has to go the whole hog to privatization. The process must be accompanied by both trade and domestic liberalization.

6. Let Non-Viable Sick Firms Shut Down

As stated above, industrial sickness and the deterioration of productivity are not the monopoly of state enterprises alone. Private firms also get depressed. More dynamic firms grow. Less efficient ones become sick and die. The process, indeed, represents the health of an economy and is productivity-increasing, unless depressed units are sustained by government. In India, sick units have increased from 20,000 in

1980, to 158,000 in 1987, to 217,000 in 1988, causing problems for banks and playing havoc with national productivity.

The loss from sustaining high-cost industries cumulates to much higher values in a few years than the one-shot cost of scrapping them. After all, machines get old and obsolescent. Sick firms should be let to die to keep the economy healthy.

There are costs of scrapping firms. Bankruptcy is costly and has major ramifications in terms of labor and financial markets, especially when a depressed unit is very large. Who should bear the ultimate burden of adjustment: workers? shareholders/owners? creditors? customers? taxpayers? How have other countries had their depressed industries eliminated? How have they tackled their problem of sick industries? Four patterns can be identified:

The Western solution for depressed industries.--In America, depressed firms are usually bailed out by guaranteed and concessional credit and similar relief. The cost is generally borne by the taxpayer. Depressed giant firms are saved from going bankrupt, provided they can renovate. American automobile and steel industries of the past two decades are instances. But recovery is not always successful.

Protection and quotas are also selectively used. For instance, the high-cost ready-to-wear garment industry of the United States is sustained by, more or less, successfully imposed quotas. Under this policy, the American consumer meets the cost. Such measures rarely enable the industry to become healthy and compete against imports.

The Indian remedy for depressed industries.--India follows, more or less, the American procedure by giving various financial and other concessions and reliefs, mostly by banks, but also by government, labor, and promoters. Pursuant to the Sick Industrial Companies Act, 1985, the BIFR started functioning in 1987 as advisory body to suggest measures for the rehabilitation of sick units. The BIFR rehabilitates sick units by essentially freeing them of their bad debts,entailing loss to banks, FIS, and center and state governments. In America, financial concessions are given to a big firm, e.g., Christler. or whole industry, such as steel, specifically to enable it to renovate and modernize. Yet the American solution has really not succeeded. In India firms can get relief even without any action to modernize. As a matter of fact, Indian relief and concessions are believed to encourage loss-making units to call themselves sick. Indians are thus less likely to succeed than Americans. In contrast, the Japanese have done extremely well in getting rid of their depressed industries within short time periods.

The Japanese solution for depressed industries.--Japan follows a somewhat different approach. Instead of sustaining depressed firms, she assists them to close down or become competitive technologically and otherwise. Faced with large scale excess capacity in several of its major industries in the late 1970s, Japan enacted the 1978 Law: `Temporary Measures for Stabilization of Specific Depressed Industries´. It was a temporary measure for 5 years. Due to the 1979 second energy crisis, however, it was extended to 10 years. With rather small cost to the taxpayer, Japanese government coordinated the phased closure of firms. Supply was reduced, prices went up. A good part of the cost was, thus, passed on to the consumer through temporarily permitted "recession cartels." Government subsidy was paid to firms for the retraining, retirement, and relocation of workers and honoring bank loans. The Japanese´ success in

scrapping excess capacity may be seen from Table 8: approximately 90 percent of targeted excess capacity was eliminated in 5 years.

India is currently expanding its shipping capacity. It needs take note of the fact that technological superiority of shipbuilding in certain countries, e.g., Korea, that depressed the Japanese entrenched shipping industry can also depress India's unless it instals the best practice technology and pays serious attention to productivity and quality.

For small industries, Japan passed the Smaller Enterprise Switchover Act, 1976, in which some incentives were provided sick units to switch over to other, technologically more modern activities than the one which was depressed, rather than assistance to close down. Recovery from sickness requires continual technological upgradation.

Naturally, market forces would have eliminated the excess capacity more thoroughly and expeditiously. The burden would then have fallen on owners, workers, and financiers, and none on taxpayers. That would jolt up three groups to be continuously vigilant and to take action to improve the productivity of their units. As Milton Friedman stated once, the market eliminates over 95 percent of failure cases efficiently and most expeditiously, while the state shelters an equally large percentage sustaining inefficiency. Stagnation becomes deeper, the longer the inefficient firms are prevented from shutting down. The wider ramifications which we have just mentioned, however, call for phased action, coordinated by government, as in Japan.

Who is likely to bear the burden of technological upgradation under the indicated solutions and what the chances of potential revival of the industry concerned are expected to be are roughly given in Table 9.

The point to be noted is that Japan got rid of its depressed industries by closing them down. As a result, she remains highly competitive internationally. America tried to get its depressed industries (steel, automobile, garment, etc.) revived and renovated through financial and fiscal concessions. While she has recorded significant improvement, she has really not succeeded in becoming internationally competitive.

Socialization of nationalised firms.--For the placement of displaced workers, two methods, among others, are candidates: (1) The Japanese method of retraining, relocating, and retiring workers, even if it involves a golden handshake. (2) A method suggested by this author in his book on Poverty 1990, particularly for nationalized sick industries. The employees of public enterprises are usually privileged workers who are subsidized via their enterprises, deficits being underwritten by the nation through the public exchequer.

The procedure is to socialize the nationalized industry. By this I mean to auction it, i.e., to sell it at the market bid price, to the firm's workers with upto 100 per cent loans, if they resist its sale to private owners. Strict loan recovery is required. A part of assets will have to be written off. The nation may suffer a one-shot loss. But it will not be required to write off its annual losses after that. If workers are unwilling to buy (even at 100 percent loan), they will lose moral basis for opposing someone else buying the plant for scrap value or rationalization. The message of this proposal is to find some way to get rid of the sick units of depressed industries.

Because of the long technological lag and her high-cost industry, the most appropriate solution for India seems to be the Japanese method. Workers' control is a possible way out to meet resistence by workers. How to overcome political opposition and

bureaucratic resistence having created their vested interests over the past 4 decades is beyond the specialization of this writer. An intensification of national debate on the issue among economists should, in the long run, bear results.

7. Poverty Alleviation: Creating Earning Capacity Versus Job Quotas for Poverty Groups

Long-run poverty can be alleviated only by growth and productivity and by enhancing the earning capacity of the poor. The most effective and well tested method of increasing the earning capacity of the poor is their education and skill formation. The demand for labor, in the ultimate analysis, is a function of economic expansion and the employability of workers. Transfer of jobs from the more qualified to the less qualified workers under job quotas is a negative-sum game. It will hurt the poor in the long run, even if it is the poor (as distinguished from the middle-class lads of the backward tribes) who can land the quota jobs.

Education has been used in other countries as a multi-purpose strategy: to alleviate poverty, break racial discrimination, prepare trained labor, develop social cohesion, increase growth and productivity, and enhance the earning capacity or productivity of workers across all income levels. As a program to break the cycle of permanent poverty and promote long-term growth, preschool education shows high promise in general for any country. Citing from the findings of a study of poverty in Panama, poverty, underemployment, low-productivity occupations, high fertility and child mortality, high child and spouse-dependency rates, and one-income families are strongly associated with low schooling levels. Over 31 percent of children in Panama are in critical poverty compared with 20 percent of persons in critical poverty. The percentage of children not attending school is much higher in poor families than in nonpoor

families. It is found that the high dropout rate, relatively low grades, high rate of repetition of school grades, and low motivation for school among the children of poor families are largely due to poor preparedness for school, especially for primary school. Over half among the over 400,000 homeless people of England are children. One of the most effective measures for school preparedness for poor children is preschool education.

These results are consistent with the findings of experiments on preschool education with control and noncontrol groups of children in other countries. For instance, in the United States, the Head Start (preschool) Program for the children of poor families was started as a part of the Democratic Administration's War on Poverty in the late 1960s. With a view to ensuring a high quality of preschool education and evaluating the effectiveness of the War on Poverty, eleven models were developed at various universities in America to carry out separate controlled experiments and generate panel data for analysis. In 1975 the developers of these eleven models formed a Consortium for Longitudinal Studies. The results of their experiments and analysis started coming out in the mid-1980s. They provide strong evidence that preschool education of children from poor families significantly reduces the high-school dropout rate and increases the probability of completing high school with significantly improved grades and scores. Preschool education has been found to lessen teenage pregnancy (another cause of school dropout), to diminish crime, and to increase the will and capacity of these persons to seek and hold nonpoor jobs. The groups that attended preschool were more independent and used less public assistance and welfare.

The results above are now considered more or less conclusive and are well documented. What is not yet widely known is the finding of research that school quality benefits the less able and

poor children more than the more able pupils and that preschool education has considerably higher productivity for poor and less gifted children than for more able and nonpoor children. Students who need the most help in preparing for school are the ones who gain the most from high quality intervention at the preschool level.

Elementary and high school education will also require some additional assistance to children from poor families whether from backward classes or high castes. Job quotas lower efficiency levels and reduce long-run growth. Preschool education for poor children enhances their earning capacity and raises the sum total of national efficiency. Job quotas are not likely to make any impact on poverty. Preschool education of poor children is a poverty-alleviating program par excellence and will serve backward tribes far better than reservation of jobs. It will increase the efficiency of the economy and the productivity of labor and other resources.

The conclusion of this paper is that India's development model has become outmoded and needs to be modified urgently. The longer we delay to change it, the wider will grow the gap between us and those developing countries which have adopted the internationally competitive, "zero-defect," productivity-oriented model--from Korea, Hong Kong, Taiwan, to Thailand, Malaysia, Singapore, through Indonesia. The adoption of the new model requires, among other changes, trade and domestic liberalization; higher resource allocation to R & D, including the import and adaptation of best-practice technology; denationalization of private-good producing public enterprises; abolition of most subsidies; and decontrol, delicensing, and deregulation of the private economy. Productivity of everyone needs to be improved. In the open economy of today, a 2 percent per annum rate of growth of TFP is just enough to keep pace with others. A golden rule in

internationally competitive dynamic firms, which Indian firms ought also to emulate if they want to compete internationally is: "Make your firm's technology obsolescent at a rate of at least 2 percent per annum, otherwise someone else will".

Table 1.—Postwar mean annual rates of growth of per capita income, 1950-1988 (unless otherwise stated)

Country	Annual Rate of Growth of Per Cap Inc Using Domestic GEP Deflator	Using Market Exchange Rate and the US GDP Deflator		
		Per Capita Inc in US$ in 1988 Prices		Rate of Growth 1950-1988
		1950	1988	
	(%)	(US$)	(US$)	(%)
South Asia				
Maldives	7.34		467(1985)	..
Pakistan	2.50	212(1960)	353	1.82
India	2.52	186	353	1.69
Bangladesh	0.30	..	179	..
Myanmar	1.90	227	278	0.53
Sri Lanka	1.74	638	421	-1.09
Nepal	0.54	221	162	-1.10
Mean:With India	1.80	..	358	0.54
Without India	1.50	..	284	0.06
East Asia				
Japan	8.93	2223	23160	9.28
Korea	6.56	249	4170	7.44
Singapore	6.20	1846(1960)	10129	6.42
Hong Kong	5.73	1349	6496	4.25
Thailand	3.59	262	1161	3.92
Malaysia	3.22	776	2239	2.79
Indonesia	..	210	471	3.51
Mean:With Japan	8.54	..	11578	8.88
Without Japan	4.59	..	1458	4.82
Selected Other				
USA	1.98	9287	19703	1.98
China	5.34	293	344	0.57
Kenya	1.40	266	360	0.80
Tanzania	1.62	144	131	-0.25

Sources: Calculated from World Bank, World Tables, 1983; IMF, Yearbook, 1990; and diverse sources.

Table 2.—Nominal tariff, rates of growth of population and GDP by epochs, selected countries of South Asia and East Asia

Variable	Period	India (1)	Indonesia (2)	Bangladesh (3)	Malaysia (4)	Singapore (5)	Thailand (6)	Korea (7)	Pakistan ( )
1. Mean nominal tariff:[a]									
Capital goods	1985	107.3	5-40	80.00	0-55	0-5	24.8	5-30	73.8
Consumer goods	1985	140.9		116.00			48.5		127.3
2. Population rate of growth:	50-60	1.9	2.1	..	2.7	4.8	2.7	2.1	2.3
	60-70	2.3	2.1	..	2.9	2.4	3.0	2.6	2.8
	70-81	2.1	2.3	2.45	2.5	1.5	2.5	1.7	3.0
	81-85	2.1	2.1	2.17	2.5	1.2	2.4	1.3	3.0
	85-88	2.7	2.7	1.90	2.5	1.2	2.4	1.0	3.0
	88-89	..	..	1.90	..	1.1	1.7		3.7
3. Per capita income rate of growth	50-60	1.0	1.9	..	0.9	..	3.0	3.0	0.3
	60-70	1.3	1.8	..	3.6	6.4	5.4	6.0	4.4
	70-81	1.5	5.5	..	5.3	7.1	4.7	7.3	2.0
	81-85	3.4	3.5	0.88	2.1	5.6	6.5	7.2	2.8
	85-88	2.9	3.0	1.88	2.5	5.0	5.3	10.3	3.2
	88-89			..		7.8		9.3	0.2

Sources: See the footnote to Table 1.

[a]For Indonesia, Malaysia, Singapore, and Korea, only ranges of nominal tariffs could be worked out.

Table 3.—Changes in poverty in South Asian and East Asian countries

Country	Infant Mortality Rate			Rank in Human Development Index (HDI)[h]	Poverty	
	1977	1987	Rate of Reduction (-) Or Increase (+) % Per Yr		% Population below Poverty Line	Rate of Reduction % Per Yr during Stated Periods
	(1)	(2)	(3)	(4)	(5)	(6)
South Asia						
Maldives	118.8	77.0	-4.34	93	..	..
Sri Lanka	42.4	29.0	-3.80	75	14	..
India[a]	130.0	93.0	-3.35	123	46	1.0(73-83)
Nepal	150.8	136.0[b]	-1.03	145	80	..
Bangladesh	113.7	120.0	+0.54	130	64	..
Pakistan	100.2	120.0	+1.80	120	43	1.4(62-84)
Bhutan	117.0[c]	135.0	+2.86	144	80	..
Myanmar	47.9	102.0	+7.56	106	65	..
Mean	116.8	92.2	-2.18	122	47	1.05
East Asia						
Malaysia	34.0	14.6[b]	-8.45	52	12	1.7(73-87)
Thailand	16.2	9.5[b]	-5.93	66	32	1.4(62-86)
Japan	8.9	5.0	-5.77	1	..	..
Hong Kong	13.5	7.7	-5.62	25	..	..
Indonesia	128.9[d]	75.0	-5.41	..	59	2.3(70-87)
Singapore	12.4	7.4	-5.16	37[f]	..	..
Korea	35.0	25.0	-3.36	35[f]	8	..
Mean[g]	48.1	29.4	-4.93	42	25	1.9
Selected Other						
China	39.0	33.0	-1.67	82	..	..
Philippines	56.8	56.0[b]	-0.14	..	..	..
Vietnam	53.0[e]	69.0[b]	8.79	..	..	..

[a]The poverty index for India came down from 46 in 1975 to 37 in 1985 and 26 in 1990. The literacy rate went up from 24 in 1960 to 36 in 1980 and 52 in 1990.

[b]For Year 1986. [c]For Year 1982. [d]For Year 1978.

[e]For Year 1983. [f]For North Korea, HDI=74. [g]Excl. Japan.

[h]Includes: life expectancy; access to health, safe water, and sanitation; daily intake of calories; adult literacy; and combined primary and secondary enrollment ratio.

Sources: Infant mortality rates from UN, ESCAP (1990). Poverty data from Sahota (1990), Table 6.13) and The Economist (1991). HDI from UNDP (1991).

Table 4.—Per capita real income of selected countries relative to that of India, 1950, 1960, 1988

Country	Per Capita Real Income Normalized by India's Per Capita Real Income		
	1950	1960	1988
South Asia			
India	1	1	1
Pakistan	1.00	1.23	1.00
Indonesia	..	1.27	1.34
Korea	0.89	..	11.84
Malaysia	2.56	3.80	5.83
Singapore	..	5.86	26.31
Thailand	0.86	1.28	3.02

Sources: Table 1.

Table 5.—Years to catch up with American incomes

Country	Years to Catch Up[a]	Private American University	Annual Salary of Highest Paid US Professor, 1990 (US$)
India	139	Boston University	231420
Pakistan	126	CALTECH	187170
		Carnegie Mellon University	160589
Indonesia	126	Case Western Reserve Univ	124161
Malaysia	91	Columbia University	1110353
Thailand	55	Cornell University	1425461
Korea	15	Duke University	164300
Singapore	15	Harvard University	178500
		Howard University	419268
		Johns Hopkins University	481135
		MIT	226000
		Northwestern University	193126
		Princeton University	151890
		Rockefeller University	138600
		Stanford University	460221
		University of Chicago	420000
		University of Miami	292138
		University of Pennsylvania	770000
		University of Rochester	263030
		University of South Calif	223758
		Vanderbilt University	437157
		Washington University	480000
		Yale University	333890

[a]The number of years the stated countries will take to attain today's American levels of per capita income, so probably the US private university compensations (the top 23 of which are also given in the last column, as reported in the Chronicle of Higher Education, Feb 20, 1991), if these countries grow at their respective current rates of growth of per capita incomes.

Table 6
Some basic statistics about the national capacity and environment of technology in India and neighboring countries

	Variable	India	Thailand	Korea
	Relevant macro variables			
1.	Population (Millions)	732	50	40
2.	GDP (US$ billion)	180	35	80
3.	% GDP from agric.	31	17	13
4.	Gross savings as % of GDP	22.8	20.7	
5.	% labor force in agric.	70	71	36
	R&D, S&T variables			
7.	R&D in US$ millions	1424	119	1433
8.	R&D as % of GDP	0.79	0.29	1.53
9.	S&T personnel per 1000 pop.	2.36	9.50	57.0
10.	S&T personnel with doctorates or post graduate degrees/diploma	22.9	48	
11.	Indust. R&D as % of total	17.8	8.3	
12.	Personnel in R&D (000's)	2329	479	2345
13.	Per capita R&D (US$)	1.94	2.3	35.2
14.	R&D per R&D personnel (US$)	611	249	618
15.	Objective factor index of national tech. climate	0.44	0.46	0.54
16.	Subjective factor index of national tech. climate	0.17	0.19	0.78

Source: Un, ESCAP, [1989]. The statistics pertain to 1985 or period close to that year.

Lines 15 and 16 computed by factor analysis.

Table 7.--A Glimpse of Productivity Effort in South Asia

Variable	Singapore	India	Bangladesh
Year Productivity Council/ Board/Organization instituted	1967	1958	1986
Professional Staff	255	200	32
Budget of Council/Board/ Organization (US$ Millions)	6	2.5	.08
Population (Millions)	2.6	798	150
Per capita income (US$)	7940	260	150

Source: First three lines of the first two columns from M. Henriques, ILO, Bangkok. Paper presented at the forum on Productivity in Bangladesh, October 24, 1989. The statistics pertain to 1987 or a period close to that year.

Table 8.--Actual and planned capacity reduction, Japan, 1978-1983.

Industry	Equipment	No. of Firms	(1) Capacity before disposal (1,000 tons)	(2) Goal as % of initial capacity	(3) Reported disposal as % of goal	(4) Net reduction as % of goal	(5) Net reduction as % of initial capacity
Concentrated industries							
Aluminum smelting	Electric melting furnace	7	1,642	57	97	97	54
Nylon filament	Spinning machine	6	367	20	98	83	17
Polyester staple	Spinning machine	8	398	20	90	76	15
Polyacrylonitrile staple	Spinning machine	6	431	20	113	92	18
Urea	Synthesizing, separation, granulation facilities	12	3,985	45	93	93	42
Polyester filament	Spinning machine	8	350	13	82	35	5
Unconcentrated industries							
Ammonia	Gasification, refining, or synthesizing facilities	18	4,559	26	100	100	26
Ferrosilicon	Electric furnace	16	487	20	100	164	34
Shipbuilding	Building berth or dock	61	9,770	35	105	105	37
Linerboard	Paper machine	88	7,549	15	94	93	14
Phosphoric acid	Reaction filtration facilities	21	934	20	92	91	19
Wool	Spinning frame	142	182	12	96	236	23
Cotton spinning	Spinning frame	288	1,204	6	78	136	8
Electric-furnace steel	Open hearth or electric	69	20,790	14	95	—	—

Source:- Merton J. Peck, Richard C. Levin, and Akira Goto (1988).

Table 9.—Effects of different remedies for depressed industries

Group Involved	Group Likely to Bear the Remedial Cost of:				
	Concessional and Guaranteed Credit, Subsidies (USA, India)	Protection, Quotas, Bans (USA, India)	Phased Close Down (Retrain, Relocate Workers) (Japan)	Socialization (Workers Control) (Yugoslavia)	Market Solution (USA)
	Cost Borne by				
Workers				Yes	Yes
Owners			Yes	Yes	Yes
Creditors				Yes	Yes
Consumers		Yes	Yes		
Taxpayers	Yes		Yes		
Nation as a whole	Yes	Yes			
	Potential Revival				
	Doubtful	No	Yes		Yes

FOOTNOTES

1 Using the relative per capita income levels of 1989 and the growth rates of 1985-88, namely, the Korea/India per capita income relative of 11.84:1, the India growth factor $1e^{0.03n}$ and the Korean growth factor $11.84e^{0.103n}$, we get the following forecast: For n = 20, i.e., within one generation, India's index of per capita income will rise to 1.82 and that of korea to 92.9, widening the per capita income gap by 51:1. The latter relative gives about the same gap as the United States had over India when the major postwar brain drain from India to America took place in the 1960s.

2 The following equation has to be solved for a, given that n = 40:

India		Korea
$1e^{an}$	=	$11.84e^{.103n}$
an	=	ln(11.84) + .103n
a	=	.0618 + .103 or
	=	16.48%

3. High rates of development and exports imply high productivity growth and high rates of decline in unit costs of production--the main source of the competitive edge. Thus, in 1975, out of 27 industrial product groups, Korea had the lowest international price in 19 of them, Japan 7 of them, and the UK in one (Gupta, 1989). The Korean competitive advantage lies in the prices of such products as garments, footwear, household textiles, machinery, radios, sports goods, jewellery, watches, cigarettes, and household durables. Japan had the comparative advantage in transport equipment, intermediate goods for transport, and TV sets; the UK in agricultural machinery; while India in none.

4 It must be recognized that no system of the world has succeeded in eradicating poverty altogether. Over 13 per cent of the US population is still below the officially defined poverty line. Similarly defined, there are 100 million poor in the western world and an equal number in the Soviet Union and the erstwhile Eastern Bloc [UNDP, 1991]. There were over 400,000 recorded homeless in England in 1989 [UNDP, 1991]. But in general, poverty has been reduced at a significantly faster rate in fast-growing economies relative to stagnant and slow-growth economies.

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