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HUMAN RESOURCES IN MACRO-COMPARATIVE PRODUCTIVITY TRENDS IN ASIA

by

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ABSTRACT

Human resources have recently come to occupy the focal point in economic development in the work of international organizations. The paper divides resources into material (including technology) and human resources and asserts that past theories of economic growth paid little attention to human resources because technology was not as varied and complex as today. But with the electric/gas and electronic revolutions completely replacing the simple technologies of the first industrial revolution of steam-powered technologies, the number and complexity of mechanized and other technologies have multiplied so many times that the human resources required to operate, repair, maintain, reproduce, adapt and development then have made institutions and human resources operating through institutions the crucial factor in the growth of the modern economy.

This is illustrated by the rapid growth of Japan and the NICs, all of whom started the post-war decades with minimal amounts of natural and other material resources. (Capital with the embodied technology was destroyed in Japan, Taiwan and South Korea by the U. S. bombardment during the last war.) But the development of manpower before World War II in Japan, Taiwan and South Korea through homes, schooling, and experience in modern agriculture and industry and in Hong Kong and Singapore in the highly developed service industries, and in the postwar decades was so much greater than in other countries where the colonial regimes were concerned mainly with plantation agriculture.

The paper points out that schooling is only one source of human resource development and the importance of the home, working place, mass media and community organizations as sources of human resources must be taken into account, with their integration and coordination in planning for the development of human resources.

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1. Approach of the Paper

Although human resources are accorded important places in the growth of productivity in the modern economy, this was not always so in the distant past. In this section, we sketch out briefly the historical background for the growing attention paid to human resources before discussing what they are and their interrelations with other factors in the process of productivity growth, and then outline the role of human resources in development strategies as viewed by development theorists.

The earliest economists listed the factors of production to be land, labor and capital. With the emergence of modern economic growth, land began to stand for all nature-endowed resources such as minerals and fuels as the rise of modern industry made them increasingly valuable in the productive activities of the first industrial revolution (e.g., iron and coal). Since the new technologies of the early industrial revolution began to make feasible economies of scale and absorbed extensive external economies, capital rose to the fore as it was needed for large-scale production and the physical infrastructure to generate externalities throughout the 19th century in Europe, superseding land as countries outside of Europe became major sources of food and raw materials, cheaply transported by the steam-powered railroads and ships.

It was in the 20th century with the spread of the second industrial revolution that technology began to emerge as a factor to be reckoned with. The acceleration in the pace of technological progress rendered existing equipment obsolete, augmented the fertility of existing lands with new crops, modern varieties, and chemical inputs, besides being new sources of industrial materials. Above all, the new technologies based increasingly on science succeeded in mechanizing most operations in industry and many in agriculture and services. In so doing, they wiped out the need for most of the unskilled laboring classes which the first industrial revolution created to comprise the industrial proletariat of Marxian economics. It was the dwindling importance of the class of unskilled workers "with nothing to lose but, their chains" which nulified the predictions of Marx who died half a century before the emergence of the second industrial revolution. For example, in the bellwether of the first industrial revolution, textiles, about one-half of the workforce in the U.S. government industry in 1946 was semi-skilled but felled to 10% by the end of 1970s and projected to fall to 5% in the mid-1990s.

The new products from the emerging technologies opened up many new industries, and multiplied many times the number of enterprises as the decades of the 20th century wore on. The upshot was that by the middle of this century, the knowledge and skills, needed by workers who replaced the proletariat of the 19th century, were so extensive that the more comprehensive concept, human resources, began to replace the more quantitative concept, labor, as a factor of production. The early censuses' one digit classification of industries and occupations had to

be expanded to 3, then to 4 and even to 5 in some cases in order to classify the multitudinous trades. Instead of a few pages, the cross-classified industry/occupation tables required a volume to list all the different types of workers in the labor force. Skills and knowledge rather than muscle power emerged as the main contribution of human beings to the production process, and as machines replaced unskilled laborers, quality rather than quantity came to be critical, with major implications for the demand for education, children, and fertility, and for population growth. England, which gave birth to the first industrial revolution with its almost unlimited supply of surplus labor thrown out from the enclosed and consolidated capitalistic farms, lost its industrial leadership to the United States with its limited labor supply, working with more machinery and equipment than British workers by the early decades of the present century. 1/

Then, in the post-World War II decades, Japan began to make rapid headway and by the end of the 1970s began to catch-up with the technology of the West, and in the 1980s began to challenge the supremacy of the undisputed leaders of the industrial world in a number of industries. Japan's successes could hardly be attributed to material resources, having to import most of its oil, coal, iron, copper,

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1/ For details of the impact of restrictions on migration, wages and the substitution of electric-and gas-powered machinery on farm and factories in the 1920s, see my note in the Journal of Economic History, March 1984, entitled "The Growth of U.S. Factor Productivity: the Significance of New Technologies in the Early Decades of the Twentieth Century"; Philippine Review of Economics and Business, March 1983, "Problems of Heavy Industrialization in Asia"; and Population and Development Review, October 1983, "The Industrial and Demographic Transitions" for population dynamics.

paper pulp, lumber, foods, and other products from natural sources; nor to capital resources, substantial parts of which were wasted away in military campaigns abroad or destroyed by Allied bombs. Hence, it was to human resources one must turn for Japan's sources of rapid growth, and not so much to their quantitative as the dualist theories used to say, but qualitative aspects, as Western entrepreneurs and managers coming into head-on competition from Japanese firms are beginning to realize. 1/ Not only Japan, the importance of human resources is being shown by Asia's NICs (Hong Kong, Taiwan, South Korea and Singapore), countries with even less natural and capital resources than Japan. It cannot be their lower labor costs only; their ability to penetrate Western markets better than other countries in Asia and elsewhere with lower wages indicates that qualitative aspects of human resources may be like Japan the sources of their successes. (See below.) Thus, the emergence of human resources to the forefront in the growth of economies in the second half of the present century may be linked to the progress of technologies, increasingly toward skill- and knowledge-intensive directions, compelling manpower to become more highly qualified in many directions.

To simplify conceptually, we can think of land and capital as representing material resources, with capital, inclusive of its quality, particularly the technology

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1/ Japanese enterprises moving into the U.S. and European countries are beginning to demonstrate that their competitive strength comes not so much from lower wages they pay in Japan but to their ability to motivate employees in the Western countries. See Asian Wall Street Journal, April 3, 1985, and various issues of Euro-Asia Business Journal. I have touched on this issue in Economic Development and Cultural Change, October 1982, "Reinterpreting Japan's Postwar Economic Growth".

associated (embodied and disembodied) with it, as all man-made material resources, and land as all nature-endowed material resources, inclusive of climate, location, land fertility, and so on. Labor, then, represents all human resources, that is, the total population both as consumers and as producers, their size, sex, age, location, labor force status in all its manifestations —— industrial attachments, employment status, income classes, occupation, skills, and work culture. By the closing decades of the present century, the two industrial revolutions have created several hundreds of thousands of man-made material resources, especially with respect to machinery and equipment which manpower must learn to operate, work, and live with effectively, if the modern economy is to produce optimally.

Moreover, in the operation and organization of this vast array of technologies, man cannot work individually and alone but in groups of varying sizes and complexities as this is not a Robinson Crusoe economy. Hence, human resources in managing material resources must work in organized fashion under patterned or set ways of doing and thinking, in a word, institutions. As the number and complexity of institutions multiplied, they began to play major roles in the functioning of the economy, and could not be left out in the growth process as the early economists did. Manpower through the social sciences and humanities had to be trained to learn about institutions if they were to be operated properly.

In the inter-relations of human resources with material resources and institutions, human resources are strategic in the interactions as it is manpower which manipulates material resources through institutions. There is no deus ex machina

in the secular growth of the modern economy. And the niggardless of nature and the occasional misbehavior of heaven can be offset by the diligence and ingenuity of manpower, except in the extreme hostility to man of the Alaskan cold or the burning sun in parts of Africa and vast deserts of the Sahara.

To avoid confusion, we think of secular growth in the standard fashion found in the recent literature, as sustained growth of real GDP per capita, usually unidirectional and accompanied by structural changes, underlying which is the growth of productivity per worker.[1/] Trends as short as a decade are distorted by what occurred before (shortages and spillovers) and by long swings, short cycles, and by episodic events. This is particular the case with the turbulent decade of the 1970s, disturbed by two oil shocks and cycles, pushed above the trends by the large flow of foreign credit, and pulled below by excessive supplies from the overexpanded productive capacities in the industrialized countries. It will be misleading and hazardous to project trends based only in the 1970s into the 1980s and 1990s.[2/] This is true especially with human resource development which takes one

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1/ The literature referred to is the numerous volumes of the late Simon Kuznets, and of Moses Abramovitz on the U.S., R.C.O. Matthews and Associates on the U.K., E. Malinvaud and Associates on France, various volumes of John Kendrick written or edited on productivity trends. Edward Denison takes too short a period for his growth accounting exercise and gets into difficulties with his projections, as in the case of U.S. and Japan.

2/ Thus, the projections for the NICs and ASEAN made in the early 1980s heavily relying on 1970s data, such as the Wharton and IDE projections, had to be revised substantially downward in 1985. Their performance in the 1970s may turn out to be far above the normal secular trend, propelled as they were by abnormally large foreign borrowings for construction. See below for a discussion on this.

to two decades for schooling and one to two more decades for experience and learning by doing for manpower to grow to positions of decision-making and commanding heights in a world of complex technologies and institutions. One is reminded of a number of studies of rates of return to higher education made in the earlier decades which showed high returns, and on the basis of which governments expanded educational facilities in the tertiary levels. But these returns turn out to be misleading since in the 1950s and 1960s the newly independent countries of Asia were establishing the comprehensive infrastructure needed for a modern society including the bureaucracies and public utilities, and were planning for the rapid rise of modern industries. By the 1970s and 1980s, with the more or less completion of the basic core of public utilities and administration, and the slow growth of sophisticated modern industrialization in several countries, educated unemployment on higher levels is increasingly becoming a problem in the countries of Southeast and South Asia, already serious for the Philippines, Thailand, India and Sri Lanka, and emerging even for high-growth economies such as S. Korea, Malaysia and Taiwan, and low-growing ones such as Nepal and Bangladesh.

In the strategies derived from development theories, the conception of the role played by human resources are different from the above. The most influential theory was that of Ragnar Nurkse in his Problem of Capital Formation in Underdeveloped Countries, published in 1953. Low productivity was attributed to the weak inducement to invest due mainly to small market size. He seized on what

he thought was the existence of a large pool of surplus labor in agriculture which should be shifted to the production of public works, roads, factories, and machines. This strategy was bolstered by Arthur Lewis in 1958 who thought that shifting the unlimited supply of workers from agriculture to other sectors at constant wages could accelerate growth, and by a more elaborate and extended theory by Ranis and Fei in 1961. Thus the stage was set for the UN to come out for an industrialization decade for the 1960s, although several countries in Asia had earlier begun to move into industrialization. Like their ancestral Classical theories, these strategies dealt with unskilled workers in the rural areas whom they were going to use to accelerate development. 1/

There was another type of theories which were also influential on policies in the 1950s, and these came out in favor of heavy industries as the type of industries to develop first. The seminal theorist was G. A. Fel'dman of the Soviet Union whose theories influenced Mao in 1952 to get China on the heavy industry road, (and in the late 1950s by Nurkse's view of the large amount of rural surplus labor to start off the Great Leap). It was argued that in the early stages of development, growth is constrained by insufficient savings and foreign exchange earnings so that it is best to build first the heavy, capital-intensive industries upstream which can then produce the basic industrial raw materials (such as steel, lighter metals,

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1/ This section is a quick summary of a paper published in the Singapore Economic Review, October 1984, and a paper on heavy industry in the Philippine Review of Economics and Business, March 1983.

chemicals, petrochemicals, paper and pulp, cement, fertilizer, machineries, and so on), required to supply the down stream smaller and lighter industries, while agriculture growth of productivity is maximized in the long run once the entire system of heavy industries begin producing. Unlike the Lewis theory, this theory requires ample supply of a top echelon of a wide ranging array of scientists, engineers, and other technicians, besides large numbers of highly skilled workers. Thus, tackling head-on the sinews of modern industries such as the integrated complex of iron/steel making, of petrochemicals, and of heavy machineries, manpower of the highest quality becomes of focal importance in the successful establishment and operations of these complex industries, and later on even more advanced manpower for R and D efforts to keep the industries up to date with technological innovations. The use of low skilled workers is limited so that the problem of surplus labor is skirted.

A somewhat similar theory by Nehru's head planner, Mahalonobis, brought the heavy industry strategy to India in the mid-1950s. It was based on Nehru's observation that the manpower problem can be solved as India is blessed with the third largest number of scientists, next to the U.S. and U.S.S.R., and presumably with a better chance of success than China which adopted the heavy industry strategy half a decade earlier. A. Hirshman in the 1960s using different arguments came to the heavy industry strategy which was influential for the Latin American countries.

All these theories and their strategies were written before the insights from the experience of the NICs in the 1960s and the 1970s can be distilled. These

writers trying to be helpful to the newly independent nations in Asia could not wait until the 1970s. Lewis, a leading historian, was mainly looking at the early 19th century experience in Europe, Nurkse in the 1950s watched the surplus workers in Egypt, and Fel'dman was writing in the 1920s in the USSR. Hence, today on the basis of hindsight it is not difficult to see the limitations of the above theories and the associated strategies.

It may be that these theorists from the West, with limited experience living in Asia, failed to grasp the nature of the monsoon economy so different from the West. Briefly put, the economy that evolved over the past three millennia in Asia was an adjustment of human resource to the pronounced seasonality of the monsoon winds which deposited huge amounts of rain suitable for a type of agriculture quite different from Western wheat agriculture. The rice grown in the paddies of the river valleys of Asia required a vast workforce, as the traditional technologies (such as transplanting and double-cropping) required many times the labor for wheat growing. But this most labor-intensive of grain culture known to mankind was feasible in most parts of Asia mainly during one-half of the year when the rains came. In the other half when the rains went away, work was difficult to find in the densely populated lands of the "teeming millions" and, when found, was of low remuneration. Thus, the poverty of Asia as evolved over the centuries was due to the vast population needed for the rainy season, and its redundancy in the dry half of the year. And all the while, the mercantile, agricultural and industrial revolutions from the 15th century on lifted living standards far above the feudal levels of the previous

centuries in the West.[1]

Under the circumstances, Asia emerging from the grip of colonial powers in the early postwar years should have adopted a strategy to overcome further the obstacles imposed by the monsoons. Policies should have focussed on the development of agriculture —— to raise yields per hectare with modern varieties and inputs, to wipe out underemployment with irrigation and cropping during the dry months, after rice self-sufficiency attained to diversify into non-rice (fruits, pulses, vegetables, animal husbandry, fishery, and forestry) and with off-farm employment in agro-industry.[2] The aim in the beginning of the postwar decades should have been to achieve year-round, full employment in agriculture as soon as possible, raise annual farm incomes and purchasing power before shifting the focus on industrialization.

Ragnar Nurkse was looking at Egyptian rice agriculture which was not watered by the monsoons but by the waters of the Nile. The 19th century European wheat agriculture combined with animal husbandry during the winter months did not have to contend with a seasonally underemployed workforce. The reorganization of peasant agriculture into larger scale capitalistic farming in England could success-

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1/ This and the following sections are discussed in detail in my volume Comperetive Economic Growth of Monsoon Asia, forthcoming, June 1986, Tokyo University Press. A short version is found in The Transition to an Industrial Economy in East Asia, ADB, Paper No. 20, October 1983.

2/ In multiple-cropping, see special issue of Philippine Economic Journal Nos. 1 and 2, 1975; on off-farm employment, see forthcoming volume edited by R.T. Shand, Australian National University, and on labor-absorption, see special issue of Philippine Economic Journal, Nos. 1 and 2, 1976.

ful transfer unwanted workers to industrialization at constant wages in the early period of the industrial revolution, as in the Lewis strategy. But the workers in the monsoon paddies were needed for the busy seasons in the early postwar years in Asia and could not be transferred without slowing down farm production. And the high level manpower needed to achieve successfully heavy industrialization was not found in India or China. The large number of scientists that Nehru counted in the high schools and colleges of India did not have the experience for the complex specialized technical operations and R and D of postwar heavy industries.

But there was one writer who was aware of the impositions of the monsoons. This was Gunnar Myrdal whose views in his Asian Drama put human resource development in the center of his strategy. But his approach was too one-sidedly focussed on manpower and institutions without sufficient regard for their inter-relations with technology and material resources. He dismissed seasonality with arguments about more crop diversification and less festivals and ceremonial holidays in the dry months, contending that Western farmers in the wintry north found plenty to do during the snow-bound months, repairing tools and craftwork and concluding that it was the lack of diligence of Asian peasants which was at the root of the poverty of Asia. 1/

But crop-diversification requires vast expenditures for irrigation, drainage, and other infrastructures whose costs will be too much if heavy, capital-intensive industries with their limitless demand for physical infrastructure must be put

1/ Pages 1077-1079, Vol. 2 of his Asian Drama.

in place, even for giant nations such as India and China. And Asians cannot be faulted for using their idle time in festivals and holidays during the slack dry season when they have little to do but must work hard dawn to dusk when the rains come. With few tools to work with, the repair work can be finished in no time, while craftwork is the specialization of a few families which in the case of India, is monopolized by special castes.

Myrdal's views about monsoon agriculture leads him to conclude that what is needed in Asia is the conversion of the peasant farms into capitalistic farms which, as in Europe, can instill sufficient discipline to raise diligence to levels which can transform poverty into the wealth of Asia. Despairing of the political feasibility of comprehensive land reform as in East Asia or of consolidation into large-scale communes as in China, he espouses capitalistic farming as the solution to landlord/tenant peasant farming in South Asia.[1/] Nearly two decades have gone by since the Asian Drama, and nowhere in Asia, not even in Japan, Taiwan and South Korea where rice farming has developed to the highest levels, can one find large-scale capitalistic rice-growing. A few attempts in Indonesia and elsewhere have been dismal failures while the giants rice communes of China have been dismantled and turned over to the family for cultivation.[2/]

1/ See Chapter 26 of Asian Drama.

2/ I argue in my forthcoming volume, op.cit., that the strong ethics Asians known all over the world originate in the rigid and rigorous schedules imposed by the regular coming and going of the monsoon rains. The crop must be quickly put in and elaborately cared for, requiring the labor of women and children, unlike in the West where the rains leisurely come and go. Nor is discipline wanting in Asia where group work with close cooperation and responsible behavior is necessary for demands of paddy rice, unlike the individualism of wheat agriculture.

Asia's peasant agriculture apparently operates most efficiently on a peasant basis with small machines which are scale-neutral, although Japan and Taiwan may now be ready for larger-scale machines in larger estates, with the displaced workers finding jobs in the relatively large non-agricultural sector. Both countries, however, are converting to a larger-scale basis slowly, and on a group-farming basis, not capitalistically. China learned that to get high yields in their communes as in the U.S. and Australia, the cost of putting the modern, large-scale infrastructure for irrigation and drainage will be prohibitive, and the vast numbers displaced cannot possibly be absorbed in the relatively small non-agricultural sector.

Setting aside the industrialization and the one-sided human resource strategies, we favor an approach which will aim for full employment as soon as possible at the outset of development with emphasis on agricultural and labor-intensive industrial development. Under this strategy, annual productivity grows at first with fuller utilization of labor in the rural areas throughout the year, as jobs increase during the slack months with multiple-cropping, especially diversified agriculture, and off-farm work when the various products must be cleaned, graded, cooked, canned, packed, etc. in the agricultural processing industries. With increasing farm incomes and purchasing power, the nascent import-substituting industries such as textiles begin to expand, acquiring scale-economies and externalities from the construction of supporting urban infrastructure. This, accompanied by greater activities in the service industries, induced by a larger volume of commodity production to service particularly in commerce, bring about full employment in the

over-all economy. From this point on, productivity growth takes the form mainly of increasing substitution of equipment and mechanized technologies for unskilled labor as their wage rates rise in a tightening labor market with the disappearance of the labor surplus. 1/ Thereafter, generally speaking, the shift is from lower-stream, labor-intensive industries upward, and toward greater capital- and skill-intensities as the main source of labor productivity.

Progress is rapid and stable since the meager stock of capital and human resources available at the beginning of development have time to increase as the economy moves to the middle stage and then to the later stage of the agro-industrial transition. 2/ Time is the very essence of this process not only in the construction of long gestation dams, irrigation/drainage, roads, public utilities, schools, etc. but in the education of the younger generation, their graduation into the labor force, and the process of learning through experience in the workplace, all of which take at least two to three decades.

1/ In rice culture, at first power cultivators and threshers are introduced to speed up operations, and later mechanized transplanters and reapers to replace peak season labor. In industry, the main industries are food-processing, clothing, footwear, woodworking such as furniture, and metal works such as kitchen utensils and house hardware, all of them labor-intensive wage goods. Not only the core machinery such as powered spindles and looms are installed, but rising wages induce even small entrepreneurs to purchase small machines used in the auxiliary operations and electrically operated tools and equipment in place of slower hand-worked ones.

2/ Stylistically viewed, this transition starts with about 3/4 of the labor force in agriculture, which falls to about 1/2 around the mid-stage and then to about 1/4 at the completion, about which time the industrial labor force rises to exceed the agricultural labor force. In the second transition, the industrial society is transformed into a predominant service society such as in the main OECD countries including Japan. Though somewhat arbitrary, these transitions are convenient frames to track the movement of economies in modern economic growth.

To short-cut this process may be destablizing, requiring governments (themselves at the outset with meager and inexperienced human resources) to undertake functions far beyond the competence of bureaucracies such as nationalizing and operating large and complex industries, intervening in markets through heavy-handed regulations, licensing, rationing, and so on —— matters more efficiently carried out by other institutions.

The approach is consonant with the improvements in the distribution of incomes as year-round employment and mechanization spread to the smaller farms while the use of more equipment and machines in factories by the unskilled laborers raise the incomes of the lowest income groups. The spread of mechanization compels parents of peasant and working class families to save and send their children to education beyond the primary and into secondary schools, as the demand for unskilled labor falls relative to skill work. I have argued elsewhere that these are the basic forces which lead to substantial fertility declines and the completion of the demographic transition. 1/ The upshot is the slowing down of population and labor force growth, which then induces entrepreneurs to accelerate the substitution of technologies for labor.

In the foregoing, the main elements of human resources in the development process are brought into the interplay of material and human resources, namely, labor force, population, employment, migration, education, skill formation, entrepreneur-

1/ See for details, my "Industrial and Demographic Tansition," Population and Development Review, December 1983; also "The Growth of U.S. Factor Productivity: the Significance of New Technologies in the Early Decades of the 20th Century," Journal of Economic History, March 1984.

ship, and the distribution of income.[1/] In the next section, we discuss how countries coming closer to the foregoing strategy tended to perform better than those which did not.

2. Record of Regional Differentiation in the Growth of Productivity and of Human Resource Development

The differential growth rates show in Table 1 have produced something unprecedented in the history of Asia. The postwar decades started with fairly even per capita incomes throughout the regions of Asia —— no more than a difference of about three times between East Asia and South Asia. In three decades, the differences have multiplied to 20 or more between the two regions while Japan's per capita income climbed 70 times higher than that of Nepal by 1980. Since the gaps were slight at the beginning of the postwar era, the large gap at the end was the result of the differentials in the growth rate of GDP per capita. Nor can statistical limitations account for such large gaps, even though the national accounting statistics of South Asia are much less reliable than those of Southeast Asia, and the latter much less reliable than those of East Asia. Even if we doubled the levels of South Asia in 1980, the gap is still wide.

The widening is related to the differential growth rates of GDP, not to popu-

1/ Health comes in implicitly with improved nutrition due to rice self-sufficiency and diversified cropping, improved distribution of income, and falling family size. Besides improved nutrition, life expectancy rises with more income for health care services and less strenuous work with machinery. Not to be ignored as we shall see are ethnicity and international migration of human resources.

lation growth. Table 1 shows that population growth rates were higher in East Asia than in South Asia (where mortality is high). Neither do the other components of human resources (Table 2) show differentials as large as per capita product in 1980. Adult literacy levels, life expectancy and calorie consumption were less than double in East over South Asia, in 1980, with average years of schooling completed by the labor force about four times. Though this type of comparative analysis is useful it can be misleading as it is static. In dealing with rapid growth, we deal with a highly dynamic process.

Rates of return to education have been computed by a number of scholars, and brought together by George Psacharopoulos.[1/] He recomputes these studies into earnings of labor as percent of the direct cost of education. Strangely, the social returns turn out to be lowest in Asia for all levels of education (primary, secondary, and higher), compared to other less developed areas, Latin America, Africa and middle developed countries. But the rate of return analysis is also static, and as T. Schultz notes, "growth is beset with disequilibria." The process of growth is a movement from one disequilibrium level to the next, with time too short for equilibrating forces to work themselves out, as Abramovitz observes.[2/]

1/ "The Contributions of Education to Economic Growth," in John Kendrick, ed. International Comparisons of Productivity and Cuases of the Slowdown, Cambridge Mass : 1984; also World Development Report 1980, Chapter 5, IBRD, Washington, D.C. 1980.

2/ ibid., p. 359. M. Abramovitz in American Economic Review, March 198[illegible] entitled "Welfare Quandry and Productivity Concerns."

As noted earlier, the returns to higher education were high at the time of independence when higher levels of manpower was needed to staff the newly established bureaucracy, public utilities, etc. for infrastructures necessary to begin modern economic growth, later becoming surplus. The changing needs of the economy at the different stages of the transition relative to the supply of educated manpower are crucial in returns to particular types of education.

Most important, since the training received in a lifetime is far more than years of schooling, the differences even within Asia in child rearing practices in the home, in the quality of schooling, patterns of on- and off-job training in the workplace, in the variety of mass media, and other forms of nonformal and informal learning are enormous as between a Confucian society, and a Catholic/Spanish society, or a Muslim society, or a Hindu caste community or a Theravada Buddhist or Marxist society. Elsewhere I have argued that the secret of the formidable productive power of the Japanese economy resides in a highly motivated manpower propelled by incentives which are not the same as in Western communities. 1/

For example, in the Japanese home a pre-school child is exhorted to excel in work and learning, to be alert at all times, demonstrate ingenuity in problem-solving, and to keep busy at all times with useful activities. He is kept in schools longer hours throughout the year than other children, and loaded with home work for the evening. Learning is continued into the workplace after graduation where training on

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1/ "Reinterpreting Postwar Japanese Growth," Economic Development and Cultural Change, October 1982.

and off the job is more extensive than for other workers. When he goes home in the evening the television beams a long menu of educational programs, not seen in other countries. The ideal goal is a lifetime of learning, seeking life's fulfullment in excelling at work and not so much in leisure and pleasure. In such a community, the social milieu is one of hustle and bustle, giving rise to a working environment of vigor and vitality. Such a macro atmosphere is itself a major contributor to productivity, and a worker on the shop floor toiling in such surroundings cannot help but be more productive than in other situations. 1/

Much of the foregoing influences on human resource development are not easily quantifiable and even if for some proxies can be obtained, they may not be fully satisfactory. 2/ Nevertheless, rates of return and output elasticities with respect to schooling from regression results do give us a notion of the importance of schooling in economic growth, even though they do not tell us how important it is when account is taken of the non-quantifiable sources. And there may be no way in which we can ever know how important it may be. Taken as "ball park" estimates there is no harm. But it is unsatisfactory to leave the matter at this point. Perhaps a com-

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1/ It is interesting to note the concern for continued vitality of manpower in the long-range plans toward the Year 2000 in Japan as it moves toward a mature and aged society. See Japan in the Year 2000, Economic Planning Agency, Tokyo: 1981. For notes on the sources of differentials in manpower quality, see my "Manpower Quality in the Differential Growth of East and Southeast Asia," Philippine Economic Journal, Nos. 3 and 4, 1980.

2/ See J.R. Behrman and N. Birdsall, The Quality of Schooling: Quantity Alone is Misleading," World Bank Reprint Series, No. 311 reprinted from the American Economic Review, Dec. 1983. Even the authors' measurement of quality using public resource allocated to schooling may not be enough if the appropriateness of the curriculum, the quality of the teachers, the motivations of students and their quality, and so on are not taken into account.

parative historical analysis within a framework of economic growth as outlined in the previous section may give us insights which despite their approximate nature (as rough as rates of returns) may be helpful for policy perspectives. Moreover, these quantifiable and non-quantifiable sources vary in their role in the different stages of different strategies of development. In the next section, we turn to a brief comparative, historical investigation.

3. The Role of Human Resources in Postwar Asian Growth

It may be noted in Tables 1 and 2 that the growth rates of employment in East Asia is 3.5% compared to 2.3% per year in South Asia, 1950 to 1980, higher than East Asia's growth rate of labor force of about 2.5%. This suggests that full employment was attained in East Asia. Moreover, female employment rate is also substantially higher in East Asia than South Asia, with income inequalities significantly lower. Accordingly, the countries which were able to reach full employment succeeded in putting to use as large a proportion of the work force as early as possible, and thereby achieved high rates of GDP per capita. This gave them an earlier start in the adoption of modern technologies, especially mechanized, opening up opportunities for developing higher skills through the use of more sophisticated technologies. Rising wages, instead of constant wages in the countries with much surplus labor, motivated workers to put forward their best efforts; similarly for entrepreneurs who found their returns rising. 1/

1/ See for data on wages, my note on dualistic theories in the Malayan Economic Review, October 1981.

And the high growth of GDP per capita enabled governments and households to receive incomes to spend more on food, education, housing, and helath services. (See Table 3 below.)

East Asian Experience

The generalization above is largely derived from the experience of East Asian countries, Japan and the NICs, whose economies by the 1970s were fully employed, Japan and Hong Kong by the end of the 1950s, Taiwan and Singapore by the end of the 1960s, and South Korea in the latter 1970s. The key to the achievement was agricultural development in the earlier decades for Japan, Taiwan and South Korea assisted by labor-intensive industrial exports. For the city-states, it was the influx of a sizeable number of experienced textile entrepreneurs and their skilled technicians from Shanghai to Hong Kong in the late 1940s, and in Singapore of foreign multinationals in the latter 1960s, helped by a modern and efficient financial, commercial, and public sectors inherited from the pre-war British days. Without their help in financing and marketing, the Hong Kong enterprises would not have succeeded so well. The efficiencies of the service sector in the city-states are demonstrated by their ability to become shopping centers in East and Southeast Asia, its entrepreneurs able to buy cheaply the manufactured products throughout the world and sell to millions of tourists who come to shop every year. But as the experience of city-states is not very relevant for Southeast and South Asia, we dwell on the experience of the other East Asian countries, although it should be kept in mind that the role of the tertiary sector is always important for all countries as it generates externalities

in the form of efficient financing, marketing, warehousing, technical, professional and various public services. The last should be singled out because red-tape, corruption and inefficiencies, poor roads, transport, health, communication, sanitary, water, power, and educational services, monopolistic nationalized industries, onerous market interventions and regulations can be major obstacles to competition and entrepreneurships, and raise the cost of household activities, cost of living for workers as they have in the Philippines and other countries. Besides this historical legacy, superb harbors and location strategic to foreign commerce and travel, these city-states were inhabited by a supply of skilled labor with a strong culture of work with extensive education at the beginning of the postwar era. 1/

Japan in the late 1940s and the 1950s pursued a policy of agricultural development which through extensive institutional changes such as land reform and participation enhanced the work motivation of peasants, agricultural and home service extension agents, experiment station staffs, and rural school teachers, and so on to improve productivity. These institutional changes enabled wide-spread participation in decision-making and implementation in various rural organizations such as cooperatives, reducing substantially the power of the large landowners. Fortunately, with almost complete literacy and educational attainment averaging 7 years of schooling in 1950, (by far the highest in Asia and as high as in the West), combined with the decades of experience with the major rudiments of scientific agriculture in the

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1/ In Hong Kong 70% and Singapore 50% were literate in 1960 compared to 28% for India. UNESCO Statistical Yearbook 1976.

prewar period enabled the peasantry to progress rapidly when the institutional reforms opened up new opportunities. Yields per hectare in rice rose sharply with falling labor input fell during the 1950s; then there was a quick shift to diversified crops, fruits, vegetables, animal husbandry, aquaculture, forestry, which in turn generated off-farm employment during the drier months. Multiple-cropping reached its peak in the latter 1950s, and rice self-sufficiency was reached in the early 1960s. Farm family incomes rose substantially with plenty of work for all members and for all months. With the expansion of the rural domestic market and exports, urban industries began to attract young rural workers with higher wages and migration accelerated. From the latter 1950s, farm mechanization began to spread, replacing the migrants to the cities. For the first time in monsoon padi agriculture, there was the clear beginning of the long-term, absolute decline of the labor force in the agricultural sector, which was undergoing the first modern agricultural revolution in monsoon farming. 1/ It is important to note that the rapidity of changes in the Japanese countryside during the late 1940s and 1950s, sustained into the subsequent decades, would not have been possible without the transformation of institutions which raised the quality of rural manpower on all levels and made possible the quick dissemination of new technologies most of which may have originated in the prewar decades.

1/ For data cited above, see my Significance of Off-Farm Employment and Incomes in Post-war East Asian Growth, Asian Development Bank, Paper No. 21. Slight tendencies for the farm labor force to decline in the prewar 1930s (from 14.5 million in 1930 to 14.2 million in 1940) may be attributable to the growth of the war economy which absorbed men from agriculture to the armed forces and military industrie

This improvement in the quality of human resources able to organize and operate modern mechanical, biological and chemical technologies meant that a smaller quantity of human resources was needed on the Japanese farms, and birth rates fell very sharply.

With full employment attained, growth in the 1960s accelerated with rapid substitution of mechanized and other technologies for labor, in industries, and then to services in the latter 1970s. These were the decades when the capital-and knowledge-intensive industries, particularly the heavy industries, were expanded and modernized with the latest technologies from the West. Since these technologies could be easily imported from the West, it was again the human factor that was strategic to the progress of the capital-and knowledge-intensive industries —— in the selection, adaptation, dissemination, and efficient operation of the new industrial technologies. For this, entrepreneurship and management had to be improved, and the workers motivated to produce diligently. Despite high levels of protection for the capital-intensive industries, domestic competition was sharp, enabling them to grow out of infancy into international competition in the 1970s. A form of industrial democracy was introduced which called for wide-spread participation in decision-making, for long-term and permanent hiring practices, seniority wage-payments and profit-sharing bonuses, extensive in-service training, and so on. Although private enterprises were not permitted to act as freely as in the West, the bureaucracy consulted frequently with them, and decisions were made with participation and mutual consent so that cumbersome regulations were avoided. In all this, the small and medium enterprises were not left out.

As in agriculture, the efficiency of Japanese industry was partly due to the high levels of schooling of its manpower, averaging about 10 years in the early 1950s, and the industrial experience from several pre-wer decades.[1] But perhaps more important in the ability of Japanese industry to grow so quickly and into highly sophisticated industrial sectors without encountering severe skilled-labor shortages was what ILO terms its "continuous" in-service training programs, and the day-to-day, intimate working of upper and lower echelons of the workforce on the factory floor. The practice of wearing the same uniforms, eating in the same cafeteria, and other egalitarian ways facilitated communications, contacts, transmissions of know-how and skills, and quick problem-solving which cannot be done well only by the front office. Though time-consuming, these day to day routines turned out to be good ways of improving manpower at all levels, besides serving to motivate manpower and making the work day less boring. In these and other ways, not least the democratization of other institutions, a vibrant social milieu and a vigorous economic environment were maintained.

In short, considering the direction in which modern industrial technology is moving, from simple and few to complex and diversified machines and equipment interconnected in serialized groupings, the lessons of Japan's experience may be that manpower cannot be adequately trained by schooling alone.[2] A decade or so

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1/ For the quality and extensiveness of pre-war education in Japan, see Toshio Toyoda, "Role of Education in Japan's Industrialization," Look Japan, May 10, 1983. He points out that already in the mid-19th century Japanese educational levels were comparable to those of the advanced countries in the West.

2/ The technologies of the micro electronic revolution are making obsolete old skills and accelerating the demand for more of conventional and new skills, with implications for re-training programs.

of schooling can facilitate the absorption of in-service training and on-the-job, day-to-day learning which must be the main source of rapidly changing skills in the workplace during the four long decades of work-life after schooling. And the transmission of the accumulated skills and know-how in the workplace may be most effective in an egalitarian surrounding than in the caste divisions of occupations in Hinduism or in the detailed work specifications of modern labor union contracts.

Taiwan's experience resembled that of Japan, even more so than that of South Korea. Full employment was reached about a decade later than in Japan with policies to develop agriculture in the 1950s and 1960s and labor-intensive, import-substitution industrialization in the 1950s and their export-promotion in the 1960s, with Korea trailing Taiwan by about half a decade, in part retarded by the Korean War in the early 1950s. Taiwan's agricultural development was like that of Japan, with the multiple-cropping rate reaching nearly two by the latter 1960s, and diversification into fruits and vegetables, substantial parts of which were exported, and whose processing provided off-farm employment to the rural population. Farm family incomes rose faster than the labor force and with full employment mechanization began to accelerate in the 1970s. In both Korea and Taiwan, there was acceleration of GDP per capita after full employment, as mechanization substituted for labor.

The ability of both countries to take off quickly into postwar growth was aided by the experience in the colonial period. Japan, unlike other colonial powers, had to develop rice production in these countries in order to feed its population for its militarization and industrialization drive. For this, the rudiments of modern agri-

culture had to be introduced into the colonies, especially to raise rice yields, and Taiwan and Korea started the postwar decades with yields substantially higher than in Southeast Asia. Thousands of extension agents were brought in together with modern varieties requiring fertilizer, roads, irrigation, and so on.

For the Japonification of society and the modernization of the economy, the colonial governments sought to educate a good portion of the population. By the mid-1940s more than one-half of the children of primary-school ages were attending public schools, greater than in the colonies of the Dutch, British, and French. 1/ These schools were of good quality, better than the Buddhist temple education in the pre-colonial period, or in the Theravada temples of Sri Lanka, Burma, Thailand and Cambodia. Taiwan and Korea started the postwar era with literacy levels higher than any other country in Asia (with the exception of Japan) with three-fourths able to read and write. The emphasis in the Japanese schools on Confucian morals and work education was important in contributing to a strong work ethic and an bureaucracy dedicated to national development.

These were two advantages in human resource development that Taiwan and Korea began the postwar decades. Already in the prewar decades, their economy was growing at rates as high as in Japan. 2/ Once freed from Japanese domination, both countries were able to develop freely their economies, beginning with

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1/ See Samuel Ho, Economic Development of Taiwan, 1860-1970, pp. 99-102, Yale: 1978; N.F. Mc Ginn and Associates, Education and Development in Korea, pp. 80-85, Harvard: 1980.

2/ See recent estimates of national product statistics for prewar decades by T. Mizoguchi, The Economic Growth of Taiwan and Korea, Tokyo: 1975.

agriculture which attained the highest growth rates found in Asia in the 1950s, 5.5% for Korea and 4.8% for Taiwan, and more than 4% in the 1960s, second to Thailand and Malaysia with more than 5.5%. (Korea's high rates in the 1950s was partly due to the low levels reached in early 1950s due to the Korean War.) Not without a background of experience in the colonial period, their entrepreneurs borrowed technologies and institutions freely from abroad, and were helped by large financial assistance from the United States mainly to defray the costs of maintaining large forces against Communist armies. And when import-substitution industrialization became saturated and slowed down by the late 1950s, both countries turned to export-promotion in the 1960s, opening their economies to foreign enterprises, learning from them through joint-ventures, technical tie-ups, and from mass distributors like Sears who taught them to produce for large orders. From these two decades, these economies emerged with a highly productive peasantry and a large shelf of efficient labor-intensive industries largely managed by their own entrepreneurs, ready to move into more capital-and knowledge-intensive industries from the latter 1970s.

As in the case of Japan, with rapidly rising levels of education of the labor force and high levels of school enrollment for the young, Taiwan and Korean families began to substitute quality for quantity in child rearing, completing the demographic transition in the 1970s with low levels of total fertility. And as in Japan, land reform, agricultural development, and labor-intensive industrialization kept income disparities low in the 1960s, though rising in the latter 1970s for Korea. 1/

1/ Data and other details are found in my forthcoming paper in Economic Development and Cultural Change, op.cit.

Southeast Asian Experience

Southeast Asia has done better in the postwar decades than South Asia partly because of its fuller utilization of its labor force, with lower rates of open unemployment, underemployment, higher female participation rates and educational attainments. As in East Asia, this is related to the greater efforts to develop agriculture in Southeast Asia whose growth rates of agriculture for the entire three decades is about double that of South Asia and of per worker product about triple. Of the countries which have accomplished most in Southeast Asia, it is Malaysia and Thailand with the highest agricultural growth rates which appear to have the greater utilization of labor. West Malaysia in the first half of the 1980s has approached full employment. The high level of efficiency reached by its plantations (which were not harassed by the government and left to their own devices), and the development of irrigation and multiple cropping in Muda and elsewhere in Malaysia have been major forces in the full utilization of its labor force and the high levels of per capita income (and life expectancies) which in 1982 were nearly as high as those of South Korea. Industrialization was labor-intensive, much of it related in one way or another with foreign enterprises, and left free to develop.

The greatest disappointment is the Philippines which started out strong in the early 1950s with levels of literacy, schooling, and per capita incomes, almost as high as in Taiwan and South Korea. But unlike the latter, the Philippines chose to put their available resources not in agriculture but in capital-intensive industrialization, and ended the postwar period with low growth rates, large amounts of un-

employed labor, unequal income distribution, and in the early 1980s, growth came to a stop when the authoritarian regime squandered vast amounts of foreign borrowings.[1] Protection has rendered inefficient large groups of entrepreneurs despite their sophisticated training. High levels of human resource development are no assurance to successes in development. Perhaps the failures of the Philippines may be traceable to the unappropriate institutions accumulated over the long periods of foreign occupation, particularly in the centuries of Spanish occupation which bred ways of thinking quite the opposite of Confucianism among the oligarchic elites. When economies are badly lead and managed, high levels of human resources may go to waste. The Philippines faces a bleak future, saddled not only with huge foreign debts but more crucially with institutions which have degenerated from years of avaricious authoritarianism, sapping the vitality of a once lively society.

In contrast with the Philippines, Thailand started out in the early 1950s with the smallest amount of modernized manpower among the ASEAN Four, partly because it was never occupied by Western countries, even though the British exerted considerable influence in Bangkok. Its high literacy rate in 1960, like that of Burma and Sri Lanka, was the product of traditional education conducted by the Theravada Buddhist priests in the village temples, but this was confined to the reading of Buddhist scripts. Bangkok in the early 1950s was an ancient Asian city lined with

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1/ See for details An Analysis of the Philippine Economic Crisis, a report of a group of faculty members of the School of Economics, University of the Philippines, edited by E. De Dios, University of the Philippines Press, Diliman, Quezon City: 1985.

klongs (canals) and few modern, concrete roads and buildings. Despite the backwardness, its peasantry was much freer and independent than the Filipino peasantry, and in the postwar decades was able to expand its production rapidly, with much of the rice and diversified produce exported for foreign exchange to modernize the country.[1/] On the strength largely of peasant production, Thailand achieved the most rapid growth among the ASEAN four, and starting with nearly one-half the per capita income of the Philippines, it was able to surpass the latter in the early 1980s. In no sense a democratic government free of mismanagement and corruption, the Thai leadership did not lose sight of national development goals unlike the authoritarians in the Philippines.

Indonesia started late. Its good performance in the 1970s was the contribution of exports of natural resources, mainly oil, gas, timber, which financed a fairly successful agricultural development program. As a legacy of Dutch negligence, Indonesia started out the postwar decades with four-fifth of its population illiterate as in in India, so that despite valiant efforts, its labor force in 1980 attained educational levels of only 3.7 schooling years. Dutch efforts to preserve traditional ways of living, despite good intentions, have left the Indonesian entrepreneur with old ways of thinking which look down upon competitive enterprising as a sign of greediness. (An example of old ways is the prevalence of mysticism in Java.) But without rivalry, the skills of entrepreneurship are slow to evolve, and without vigorous entre-

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1/ Illustrative is the overtaking of Thai sugar production of the Philippines which started the postwar decades with the largest sugar industry in Asia. The sugar entrepreneurs of the Philippines were spoiled by the easy access to the U.S. market through assured quotas. They lost the vitality which their ancestors possessed in the latter 19th century and early 20th century.

preneuring, the labor force is also slow to developed. And like other military authoritarianism, the closed nature of its governance does not permit a full view of its doings, some of which turn out to be distressing, as in the case of the Philippines.

South Asia and Chinese Experience

Sri Lanka was exceptional among Asian countries (indeed among any other LDC) in that it put more faith in human investment than in material investment —— in free education all the way to the university, free health services, subsidized food housing and transport, and other welfare, for all its people, achieving the highest literacy rates, (which was the highest to begin with in 1950), longest life expectancy rates, lowest income inequality, and total fertility rates in South and Southeast Asia excepting Singapore. But its growth rates of GDP per capita were lower than even the Philippines and its per capita income levels in 1980 less than one-half, with larger amounts of unemployed labor force, particularly among the educated. Sri Lanka was spending on welfare as though it was a developed country with large amounts of material capital, hoping to grow up through human resource development under socialistic slogans. Its experience points to the need for balance in the allocation of resources for human and material development, a balance which must change with the stages of development. For, much of the investment in developing human resources may go to waste if the appropriate material resources do not exist for human beings to work on and with. In the early stages, human resources must be put to work to earn the scarce food, housing and transport, and not handed-out.

Another welfare/socialist-oriented nation (with a stronger emphasis on socialism than Sri Lanka) is China. Besides free education and subsidized food, pensions and so on, China's experience unique even for Asia is its extreme egalitarian manpower policy symbolized in the "iron bowl", signifying nearly equal pay for different levels of manpower and permanent employment. Its recent abolition in China attests to the inability of the "iron bowl" to motivate manpower to hard and diligent work. The experience of welfarist Sri Lanka and Socialist China shows that the culture of work cannot be developed to high levels of vitality if it is spoiled with too much handouts, entitlements, and guarantees. The lesson to be learned is that human resources, unlike other resources, need some degree of self-reliance, independence, rivalry and risk-taking to meet the needs of rising productivity, whether in the homes, schools, community, workplaces, and in the market.

The giants of Asia however, began with vast investments in material resources, even though in 1950 education levels of the labor force was low. In the 1951 Indian census, 83% was found to be without education (compared with Sri Lanka's 40%). There is no comparable information for China but in 1950 the number of students enrolled in primary and secondary schools as percent of total population was as low as in India. Since the size of the educational system depends on the existing stock of educated manpower, this may be taken to be indicative of the low level of educational attainment in China.

India and China gambled with concentrating their resources in a wide-range of heavy industries in the 1950s, following Soviet growth strategy. Since the heavy industries required an extensive variety of top level manpower and with experience for R and D work, this strategy bogged down with insufficient top manpower to operate efficiently complexes (i.e., groups of industries) such as iron and steel, other metal complexes, petrochemicals, heavy machinery, and so on, and to keep up with the R and D of industrialized countries. These industries soon became obsolete despite heavy spending for rehabilitation. The slow growth of the overall economy due to the "cascading" effect of poor quality and high cost equipment and industrial materials from the heavy industries to downstream light industries, and due to insufficient resources left over for agriculture after paying for the costs of establishing and maintaining the heavy industries. The mass markets for the heavy industries were slow to emerge, and were spread thinly over their vast countries, which in turn called for massive development of transport and other infrastructure nation-wide to service the heavy industries, reducing investments in irrigation and rural roads for the modernization of agriculture.

The need for higher level heavy industrial manpower may be related to India's concentration of funds for education on the upper levels. In 1981, 8% of the population, 20-24 years old, were enrolled in higher education, compared to 3% for Sri Lanka, Indonesia, Pakistan, and 1% for China, leaving a large pool of educated unemployed, and with too little education in the lower levels of manpower needed to modernize the rural areas and improve the lot for the vast millions living in dire poverty and object ignorance.

Caste is a special factor in Indian human resource development (and also in Nepal and Sri Lanka). The partitioning of the workforce into a large number of occupational groupings reduces substantially the easy flow of communication, contacts, information and transmission of skills in the workplace and society. This makes for difficulties in management not only in modern enterprises but also on the farms and in craft shops where the extension agents may find obstacles to communicate and instruct, retarding the day-to-day, on-the-job training and learning process, particularly for the "untouchables." And, in general, the caste differentiations, which multiply cultural and social differences by a larger factor than in non caste societies, make for additional sources of suspicions, misunderstandings, and conflicts, instead of promoting the cooperative, participatory, and egalitarian institutions needed for the operation of modern technology with its inter-connected and integrative tendencies within each factory or plant. This may be the reason for the proliferation of managements schools in India (but of limited demand in Japan despite the sophisticated levels of organization).

Thus, the capital-intensive strategy has left India with not only the slow growth of material resources but also of human resources. There will be much to do in the future, all of which could have been done in the earlier decades —— to raise educational attainments, food consumption beyond the meager 2,000 caloric intake, life expectancy levels and female participation rate while at the same time reduce unemployment and underemployment, total fertility and population growth. China's growth performance was no better but its successes in improving human resources

were greater. (See Table 2.) Hence, once the constraints of socialist institutions such as rigid planning, the "iron bowl" and so on were lessened, it was able to speed up growth quickly.

Nepal and Bangladesh have problems similar to those of India, but compounded by the more severe scarcity of natural resources. Bangladesh's density as measured by the agricultural population per agricultural land is nearly three times that of India. It is not as bad in Nepal but its hilly lands are much less fertile. (Table 1.) Their problems like those of India are the large pool of unemployed and underemployed labor, especially in the dry months, the low elvel of educational attainment of the workforce, and poor health. The share of arable land under irrigation and off-farm incomes are the lowest in Asia, with rice fertility lowest, but with total fertility (birth) rates highest. Under these circumstances food becomes the next urgent problem. Household income and expenditure surveys for India, Nepal and Bangladesh show that the shares of food expenditures in personal family incomes (Engel coefficient) begin to fall only from the middle deciles unlike other Asian countries where they fall from the lowest decile. The rising portion of the Engel curve may be interpreted to mean that families in the lower deciles are not eating enough so that when their incomes rise, more incomes must be spent for food, not less. 1/

1/ Data underlying the paragraph are from the FAO Production Yearbook, and income surveys of various countries.

The low levels of literacy and educational attainments of the labor force in India, Nepal and Bangladesh may be traced to Hinduism in India and Nepal, and Islam in Bangladesh. Unlike Buddhism in Sri Lanka, Burma, Thailand, and in East Asia, only the highest caste, mainly Brahmans, were educated in Hinduism while Islam taught the young to memorize rather than to read the Koran.[1/] To make up for these unfaborable historical legacies a major effort to raise primary and secondary enrollment was made in the postwar decades but the accumulation of educational stock is a slow, generational process.

The total fertility rates in Nepal and Bangladesh of over 6, highest in Asia, may be linked to the low levels of educational attainment of the labor force, averaging only one year of schooling in both countries in the late 1970s, and low levels of school enrollment in the past. With the quality of the population increasing slowly, farm families must continue to keep the quantity of children large as the only means to raise family incomes under conditions of declining quantity of agricultural land per family.[2/] In Nepal, total fertility rates in the 1970s do not appear to be falling. In either case, hand labor must be substituted for insufficient or inadequate land, more hands for the short work-life span of the labor force (with life expectancies lowest

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1/ See T. Toyoda, Difficulties in Educational Development in Asia, a draft paper, Institute of Developing Economies, Tokyo: 1984.

2/ See mimeographed studies of the Central Bureau of Statistics' Population Division from the 1971 and 1981 Population Censuses. Fertility is said to be rising, although part of the increase is attributed to improve data reporting in 1981 over 1971.

in Asia), and food consumption insufficient for vigorous, prolonged work. These two countries with the lowest per capita incomes appear to be caught in a cruel dilemma: manpower must be increased to make up or substitute for extremely scarce material resources but the greater the manpower the lower the per capita resources, and hence per capita income; with low incomes it is difficult to invest sufficiently to improve the quality of human and material resources.

Natural resources are by no means as scarce in Burma as in South Asian countries. Indeed it is blessed with land as plentiful as Malaysia and the monsoons bring more water. The Theravada priests left a valuable legacy of education which enabled Burma to start the postwar era with literacy rates higher than in Malaysia. Geographically it belongs to Southeast Asia but its postwar progress is more like South Asia. Unlike Southeast Asia, it isolated itself from the world, closed its society, and moved into a socialized economy with a military autocracy unable to work out ways of developing the economy. In the meantime, the Thai peasantry replaced Burma as the major rice basket of Asia, despite poorer soils and insufficient rain.

To conclude, this quick review of postwar experience shows that there is a variety of interactions between material and human welfare, varying from stage to stage under different patterns of strategies. Human resources are necessary but by no means sufficient conditions for the development of productivity as the experience of Sri Lanka and the Philippines shows. The strategy selected at the beginning of growth is crucial in the optimal and balanced utilizing of both resources. The

strategy most appropriate to resource endowments appears to have been selected among the NICs, Thailand and Malaysia. The question arises: how was it that some countries did better than others in the selection of strategies? This is not easy question and not enough historical work has been done to get definitive answers. Off-hand, it looks as though the colonial policies of the past had much to do in contributing to the strategy perceptions of the indigenous elites and the peasantry right after independence. The harsh treatment of the elites and peasantry in South Asia by the colonial powers contributed to socialist tendencies. The elites avenged the former rulers and their cronies by nationalization of their properties, and distributing the rice lands to the peasantry. The harsher the treatment the more complete the nationalization and distribution, as seen in Burma and Ceylon, and Vietnam, though the Filipino peasantry was rebuffed several times. Treated better in Thailand, Malaysia, Indonesia, Korea, and Taiwan, both the elites and the peasantry responded in ways more conducive to the development of productivity. 1/ Of course, the long traditions prior to colonial occupation also influenced the direction that post-independence policies took, e.g., caste in India, Islam in Bangladesh, Theravada Buddhism in Sri Lanka and Burma, and Confucianism in East Asia.

The review also tends to cast doubts on the accuracy of estimates of rates of returns to education in growth accounting and output elasticities with respect to education in regressions. These returns and outputs are far more than the function

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1/ For details of these generalizations, see my forthcoming volume.

of the quantified variables found in the accounting and regression models. Patterns of child rearing in the home, of curricula, skills and diligence of teachers, and motivation of students in the schools, kinds of training and experience in the workshop, mass media programs, and the sum total of the social milieu and economic environment. No techniques we know of can capture the influence of these in productivity growth, compelling us to resort to historical narration. With the insights from narration and the clues from measurable returns and output, we now move to our final objective, namely, the assessment of the future and the identification of emerging problems whose solutions or amelioration must be provided for, if productivity is to propel the growth of per capita incomes to heights of better living in the years to con And the speculative nature of the insights and clues calls for further research in the years ahead, so that some of the research issues should be specified.

4. Prospects, Problems and Policy Perspectives in the Years Ahead

A broad consensus is forming that the postwar era has come to an end and a new one has begun —— one whose global projects are not likely to be as favorable as in the past. The high growth decades of the past have been part of the upswing of a long wave in the industrialized countries, fueled by the pent-up demand from the depressed 1930s and militarized 1940s when consumer demand for durables and housing, business, and public demand for capital goods were exceptionally low. The pent-up demand had not only been met in the recent decades but productivity capacities appear to have over-shot the aggregate purchasing power endogenous to

the normal secular growth and productive levels.[1] The present downswing in the OECD countries has been conjoined by a changeover in basic technologies to electronic-guided technologies, prolonging the downswing with large pools of unemployment. And it is difficult to see at this stage how soon the adjustments will be completed and the industrialized countries resume once again high and stable growth. If so, we need to begin discussing the implications of the global slowdown to Asian countries.[2]

I have contended elsewhere that the high growth of East and Southeast Asia was in large part the direct and indirect product of the high growth of the industrialized countries in the 1950s and 1960s, and that with the Western slowdown in the 1970s, the Asian growth should have come down to levels more consonant with the slower pace of the global economy, perhaps to one-half as in the OECD countries. That the growth of the NICs and ASEAN did not fall, was mainly due to the substantial flow of foreign borrowing from petrol dollars which were invested in an enormous construction boom in the 1970s and through 1982. (Contributing to Japan's slowdown in the 1970s was the slowdown in construction expenditures.) In 1983 and 1984, the cyclical

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1/ Details are in my "Perspectives on the Prospects for Southeast Asia Growth in the 1980s," Journal of Philippine Development, Second Semester, 1980, NEDA; this paper summarizes the arguments of M. Abramovitz in his lectures on the industrialized countries at the School of Economics in 1977.

2/ The projections to the year 2000 made for Japan's long range plans assume the growth of GDP to be 4% for Japan and 2% for other OECD countries, far less than the 9% and 5% for the decade of the 1960s. See Japan in the Year 2000, op.cit.

expansion of the U.S. economy sustained the high growth of NIC/ASEAN exports. But when the export boom subsided in 1985, the large foreign debt servicing burdened the budgets of most of the NICs/ASEAN countries, rendering impossible the resumption of the construction booms or other forms of pump-priming to sustain high growth levels. Since foreign debts will take some years to liquidate, and the OECD countries do not appear to be returning to high levels of growth and importation, the end has come to high growth in the NIC/ASEAN region. 1/

With these presumptions on the exogenous forces shaping the growth of GDP in Asia in the coming years, it is difficult to be up-beat about the role of manpower in future productive power. We shall see in the next section that this is not only because of the tight budgeting situation left by the excessive foreign borrowing. The approach will be topical, starting with population trends, going on to more qualitative dimensions of human resources, and concluding with the larger, over-all policy concerns.

Population trends projected into the coming decades are firmer than other dimensions. In Table 4 are the most widely used projections, based on the work of the UN Population Division. With the completion of the demographic transition, rapid population growth is of little concern for East Asia, except possible China.

1/ Details are found in my notes "On Long Swings and Their Implications for Asia in the Latter 1980s," a paper written for the memorial volume for Simon Kuznets, Academia Sinica, Taipei: October 1985, and an extension of the analysis in an unpublished paper "The End of High Growth in NICs/ASEAN," October 1985.

In fact, one detects in the public statements the emergence of pro-natal views in the fully employed countries as they are worried about labor shortages with slow labor force growth. 1/ But this tendency may change in the light of the appearance of unemployment in 1985, even in Singapore and Malaysia, and the realization that the decades of high growth have come to an end. If the NICs were to slowdown to GDP growth rates of about 4%, instead of 8%, the spread of electronic technologies will require a smaller but better trained manpower than a larger, less trained one. Already countries with too much surplus labor are hesitating to introduce computerized machinery because of the adverse impact on employment.

As for Southeast and South Asia, 2% population growth and fertility levels for the rest of the century are too high. (Table 2) With labor force projected to grow at 2.4% per year, full employment may be difficult to reach if GDP growth is to be only 4%. This rate implies a growth of GDP per capita less than the growth of the labor force, or 1.5%.

For South Asia there are more compelling reasons to bring down quickly the high fertility. Average per capita available supply of calories of 2000 or so is too low for health or for vigorous work as it signifies per capita supply of 10% or less for most peasants and laborers in the lower income groups and an actual intake figure of another 10% or so less. In the Philippines the intake figure from consump-

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1/ See Japan in the Year 2000, op.cit., where the hope is expressed that birth rates pick up in the 1990s. The Prime Minister of Singapore is concerned with the low birth rates of the educated women, and the Prime Minister of Malaysia has come out flatly for a pro-natal program.

tion surveys is 30% lower than the available supply estimated from production data and food balance sheets. The slow rise in the index of food production per capita in India and a fall in Nepal and Bangladesh are indicative of the inability to produce food in excess of production of human beings, entailing the use of valuable foreign exchange earnings for food imports which a predominantly agricultural economies should be exporting.

There is an urgent need for present policies to focus on the reduction of mortality, the increase in health and educational facilities and raise life expectancies and work-life span. Otherwise the prerequisites of bringing down substantially fertility among the peasants and workers are not established. These classes need the extra hands from high birth rates in order to cope with early deaths. Policies to forcibly reduce births are not the answer. Besides more spending on human resource development, more should be spent on agricultural development, especially to assist the small peasants to improve thei food consumption, and more work during the slack months for both the small peasants and landless workers. This calls for diversifying agricultural production and agro industrialization, but this means tha more must be spent on irrigation, rural roads, rural electrification, and schools. After three decades, if the public enterprises are not self-sustaining and self-reliant, they may never be and they should be speedily sold to private enterprises and reduce the drain on the national budget.

It has been observed that the decline in fertility has slowed down in several countries and saturation in the use of contraception approached. It may be that the easy period of initial declines is over, and to keep up the pace of decline lower groups among the peasant and working classes must be reached. But this will be more difficult, as modernization has not affected these groups in most of South Asia and parts of Southeast Asia. 1/

Female participation rates are exceptionally low in South Asia except Nepal. Part of the reason is traditional and cultural, particularly in Bangladesh where Moslem women are not encouraged to be seen working in the fields. But they do spend much time threshing the paddies in the homes and away from the fields. More research may be needed. The low participation may also be due to the backward technology of rice and other types of farming where with the use of modern, labor-intensive methods such as in East Asia during the early 1950s may yield output greater than the added labor absorbed. But greater labor-intensity will mean costly fertilizer and water inputs. Also South Asia uses more children in the field in place of wives as the young are not sent to schools as in East and Southeast Asia. Women are needed for old ways of time-consuming work in the house, especially in cloth and garment making. The slow production on hand loom and spindles has been replaced in East and Southeast Asia with machines in the factories.

1/ I have pursued this thesis in Population and Development Review, op.cit. The Philippine Population Institute has reported that the crude birth rate was unchanged in 1983, and the use of contraceptive devices has dropped.

But factory production will require rural electrification and roads which cannot be constructed if the big industries require annually rehabilitation, and more and more power, roads, and railways.

Employment creation and labor absorption also are no longer an issue in East Asian countries, except in China. The large pile-up of population from the north in South Korea and from China in Taiwan immediately after the war was put to work as the economy grew faster than the labor force in the latter 1950s and throughout the 1960s and into the 1970s. This is not the case elsewhere, except in West Malaysia which became fully employed in the first half of the 1980s. The unemployment figures of most countries are difficult to make out. They do not at first glance appear alarming, although this is not the view of the labor economists in these countries. The fact of the matter is that full unemployment (in the sense of idleness throughout the year) is difficult to measure because of the pronounced seasonality of the monsoons, the nature of paddy technology and associated activities, infrequencies of labor force surveys, difficulties of defining the labor force and the fuzzy nature of unemployment in the rural areas where subsistence farming prevails.[1/] Under subsistence production, there is at one time or another something one can do around the farm or nearby in the commu.al lands to scratch out

1/ For a discussion of these issues, see Labor Absorption in East and Southeast Asia, special issue of Philippine Economic Journal, Nos. 1 and 2, 1976, which also contains the data and information for Southeast Asian countries on underemployment. Also Special Issue on internal migration, ibid., Nos. 1 and 2, 1977, edited by E. Pernia, and Special Issue on education, ibid., No. 3, 1979, edited by E. Tan. All three issues are papers from the Council for Asian Manpower Studies' conferences.

bits here and there for one's own consumption, unlike in specialized, commercialized agriculture.

When underemployment at different times of the year is put together in monsoon Asia, not only in the dry months but also between the peak periods after the crops are planted and before the harvesting, estimates of idleness range from 20 to 30% in South Asia and 10 to 20% in Southeast Asia. All this is consistent with per capita, per day caloric intake below levels of 2000. When East Asian countries attained full employment, these levels rose beyond 2,200. It is also in the countries with much idleness that the exodus of their skilled workers to foreign countries is large —— the Philippines, Sri Lanka, India, Bangladesh and Nepal. The question arises whether the drain of skilled workers abroad will slow down productivity growth more than the contribution of the foreign exchange earned. This will depend on the use made of the foreign earnings which often appears to cover imports of luxuries. The high level of idleness is basically structural, the product of seasonality and the uneven pattern of labor demand in monsoon paddy culture, and certain to continue into the future, unless infrastructure and institutions are put in place to overcome the basis of idleness. Full employment in the rural sector was achieved in Japan in the 1950s and Taiwan in the 1960s only after sufficient irrigation, roads and other infrastructure were built. With rice self-sufficiency, there was a shift to diversified agriculture in the drier months which in turn increased off-farm employment in the agro-industries to process the harvested crops. 1/

1/ For data and details, besides ibid., see my "Seasonality and Underemployment in Monsoon Asia," Philippine Economic Journal, 1st Semester 1971, and "Food Consumption and Economic Development," Economic Development and Cultural Change, Oct. 1967. Also "Multiple-Cropping in Asian Development," special issue of the Philippine Economic Journal, Nos. 1 and 2, 1975.

In sum, macro productivity can be increased substantially in South Asian countries (and to a lesser but significant extent in Southeast Asia) with fuller utilization of the existing work force —— through more work for the adults, higher female participation, greater vigor in work, and longer work-life span. The extensive use of chold labor in countries like India should be discouraged, and their substitution by adult labor should release children for schooling, thereby lowering fertility by raising the opportunity cost of female time, and the cost of raising childfen, and improving the quality of future workforce. A major season for the slow growth of South Asian economies in the past decades may be the absence of policies to use human resources sufficiently.[1/] In the next section, we turn from the quantitative to the qualitative aspects of human resources.

Education has not been neglected in East Asia where Confucian teachings have extolled it not only as a source of skills but also of enlightenment. East Asian countries, and Malaysia and Thailand (where the competitive pressures from the East Asian population are strong) have consistently spent about one-fifth of their budgets for education in the 1970s but elsewhere the levels are closer to one-tenth.[2/] As a

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1/ In the Economic Development and Cultural Change paper on food consumption, the contention is made that in a fully employed economy, there is a significant economy in the use of food supplies. If per car a consumption of food is of a level associated with per capita calorie consumption of 2,000, about 1,000 is consumed for the basic metabolic requirements, (i.e., the amount needed for biologic functioning when the body is at complete rest); but roughly the same amount is needed even when the workforce is fully employed and the calorie intake rises to 2,300. Now, 1,300 calories go into the energy for work.

2/ UNESCO Statistical Yearbook 1984.

result of past enrollment, years of schooling attained by the labor force may be too low for Indonesia and South Asia to move speedily into higher levels of industrialization and into modernization of agriculture. The farmers in Taiwan, South Korea, and Thailand in 1970 averaged 4 years of schooling compared to Indonesian farmers with less than 3 years in 1980. (See Table 4) Even though science-based machines used in modern agriculture are far less than in industry, some familarity with biology, botany, chemistry, etc., is necessary to absorb the proper use of science-based high yielding varieties and the chemical fertilizers and insecticides required together with the proper use of water. Reading ability beyond levels taught in primary schooling is valuable in decision-making in management and marketing.[1/] For production workers in industry, attainments are lower for Indonesia than for other countries in Southeast Asia. For countries in South Asia, except Sri Lanka, the data are not available but must be even lower than for Indonesia, considering the lower average attainments in Table 2.

The exception is the Philippines with high levels of enrollment and attainment but low levels of government support for education. This means that the quality of education suffers. Pre-college education is 10 years compared to the usual 12 years, and teachers are poorly paid, and motivated, and teaching materials and equipment obsolete and insufficient. It may be that fewer years of schooling but

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1/ See M. Lockheed, D.T. Jamison, and L.J. Lau, "Farm Education and Farm Efficiency," Economic Development and Cultural Change, October 1980. For India, census figures for agriculture in 1971 show average years of schooling to be 1.3 for cultivators and only 0.5 for agricultural laborers.

higher quality may be just as good while enabling parents to keep teenagers at work-place longer before they marry off and establish new households. But after decades of rapid expansion, more attention on the quality of education may be needed in other countries as well, even though quality has not been deteriorating as rapidly as in the Philippines. 1/

Insufficient spending for schooling by the State contributes not only to poor quality but also to the mal-distribution of educational opportunities which in turn will have adverse impact on income distribution. It is the children of the lowest income groups who will be mainly deprived. If only about one-half or less of the age groups from 6 to 12 can be enrolled as was the case in South Asia (except Sri Lanka) in 1960, the earning power of those without education in the later years will be less than the others, re-enforcing the mal-distribution of finance going to large and small farms and firms in the capital-intensive strategies pursued in several of the South and to a lesser extent in the Southeast Asian countries. The dual mal-distribution accompanied by the slow growth of GDP in turn translate into excess capacities in capital-intensive enterprises and the unemployment of educated manpower to comprise costly social waste. Since human and material capital formation is invested for long perios, the situation is likely to carry over into the rest of this decades, although a comprehensive restructuring and new strategies may shorten the period of over-capacities.

1/ J.S. Furnival shows that the Philippines was far ahead of other countries in Southeast and South Asia in the prewar decades, with the budget allocating 20% to education in 1938; Educational Progress in Southeast Asia, p. 112, NY: 1943. American committment to education was just as strong as the Japanese in Taiwan and Korea, although the quality may not have been as good.

The process of accumulating educational stock is a slow one, on the average one year or less per decade for each occupation or industry. Plans for changes in the future must start early since the demand patterns for types of education needed by the labor force vary for different stages in the transition from an agricultural to an industrial economy. Tables 4 and 5 tend to show that in the early stages, the big demand is for education for white collar workers, particularly for professional and administrative staff needed for the public services, with the exception of Thailand which probably met the needs in the 1950s and 1960s. Then towards the latter stage of the transition, the demand for education for blue collar workers increasingly come to the fore relative to white collar education, as industry and agriculture become modernized with more sophisticated technologies, and this probably continues into the industrial stage. After that the predominantly service economy may once again push white collar education to the fore. The nature of the skills between and within white and blue collar occupations will vary because the industrial structure will be different.

ASEAN countries which aspire to complete the transition to an industrial economy will have to shift their emphasis from education for white to blu collar occupations while the South Asian countries cannot neglect blue collar education for agriculture.

I have elsewhere raised the issue whether public schools in South and Southeast Asia have been influenced unduly by Western systems —— in the emphasis on higher education, in the short duration children are kept in school during

the year, and above all in the curriculum.[1] The situation in the West is quite different with a large middle class clamoring for higher education, short hours to accommodate manifold activities outside the schools, the teaching of morals and work education left out for the churches to undertake, and the lesser need for vocational and technical education under conditions of slower growth, large number of private commercial and technical schools, and large pools from the long past of high level experienced and skilled workmen on the plant floor. Japan from the early decades of this century with the acceleration of modern industrialization found the need to expand rapidly technical-vocational education to meet the demand for the new and diverse skills to operate the new technologies. From the beginning Japanese education has been strong on technical education.[2]

Thus, newly independent countries trying speedily to modernize are compelled in education, as will as in other endeavors, to accomplish more than in the Western countries. Besides skill formation, education has to lay the ground work to modernize social values, develop national unity, consensus and familiarity with new institutions and new ways of living and working, with students who come from traditional homes. Schools must have longer time in the year than in the West, and teachers must be paid adequately to do the job. Part of the job must be shared with

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1/ The U.S. system in the Philippines, the Dutch in Indonesia, the French in Indo-China, and the British elsewhere.

2/ See T. Toyoda in a series of articles in Look Japan on "The Role of Education in Japan's Development," May 10, 1983.

the mass media, especially radio and in the workplace, as noted below.

Learning and training in the workplace can be the major source of skill formation and work education for the young workers getting into the workforce, as the experience of Japan shows. This requires a system of industrial and labor-management relations different from the West, whose practices originated in the simpler technologies of the 19th century when skill requirements were fewer and simpler. The apprentice system of traditional societies is too slow to suit the requirements of rapid skill formation for modern productivity growth. The workplace can be the best source if a system can be devised which can motivate the more skilled workers to transmit their experience to the less skilled. But this requires management to aim to maximize long-run profits, rather than quick profits, and incorporate industrial relations which motivate workers to learn and share, and involve them in problem-solving on the plant floor. Top-down, autocratic methods from the West are less conducive than more participatory ones in establishing the proper atmosphere for optimal learning experience. Management must also be prepared to invest in on- and off- the job training to develop new skills and for retraining. The practices must not ignore strongly held cultural values if theu are to succeed. And just as the West today is experimenting with new methods, so Asian countries need to try out new approaches suited to their own endowments and historical legacies. Needless to say, these complex institutions cannot be devised by management alone in the front offices or by academics in their ivory tower but must emerge from the workplace with inputs from all relevant parties. Since the systems cannot be the same

for large and small firms, attention must be paid for practices suitable for the latter who are responsible for the bulk of the output in most Asian countries.

The contribution of mass media can be substantial, if they are not viewed solely as sources of entertainment and leisure. Particularly after schooling, mass media can be the major sources of life-long learning, promoting skill formation, extending and enriching the knowledge acquired in schools in the social and physical sciences, history, humanities and about the larger world, and contributing to social and political consensus. For the media to attract audiences to its educational programs, the schools, and the homes must prepare the young to cherish the pursuit of life-long education not only for skill development to improve "the life of business" but even more for "the business of life" through enlightenment. If the educational function of mass media can be integrated with schooling, skill formation can be shared with the schools, and modifications of social values can be promoted in the homes, then the burdens of schooling can be lightened through a carefully coordinated integration of the major sources of human resource development. Although few countries in Asia are thinking abour or working toward such ambitious goals, the exigencies of the future may call for such steps to be taken.

For the distribution of family incomes in nearly all countries of Asia for which we have information has shown no improvement in the late 1970s, and in some

countries there has been deterioration.[1] If so, the increases in unemployment and consumer prices in the first half of the 1980s, may worsen the position of the lower income groups even more, and the slowdown in GDP growth in the rest of the 1980s may hold no prospects for improvements. Even if the shares of the lower income groups in the totality of family incomes remain constant, the slow over-all growth of incomes will mean slower absolute growth of lower incomes than experienced in the 1960s and 1970s. The size of families may fall more slowly than the size of absolute family incomes will rise, so that the size of poverty groups may not diminish.

East Asia has made good progress toward the elimination of poverty, particularly after full employment when more earners in the lower income families found good jobs. Southeast Asia has made slower progress, except in the Philippines in the 1980s, where idleness has reached alarming levels and steep price rises have forced many families to subsit on 1 or 2 meals daily, —— and all this following the late 1970s which saw no increase in the average calorie/protein intake per capita as reported in the national nutrition surveys, 1978 and 1982. It is difficult to see how poverty can be alleviated in South Asia with so much idleness and a fast growing population. Even for the welfare state of Sri Lanka disparities have been rising.

1/ Recent data, available in the 1970s for the Philippines, S. Korea, Thailand, Malaysia and Sri Lanka, show lower shares for the lowest deciles, and higher shares for the highest groups. Data are based on a volume on postwar trends in Asian income distribution, presently under preparation. The generality of this outcome abou the late 1970s in Asia is difficult to make out, and it may be linked to the peculiar nature of the pattern of development noted previously. But it remains to be studied in the future with the availability of detailed data.

The problem of developing entrepreneurs has been the concern of Malaysia and Indonesia in Southeast Asia and perhaps in other places where the supply of entrepreneurs is extremely scarce. Policies to develop them in schools may not be too successful. I know of no schools for entrepreneurs in the U.S. although there are many for management. But this is a slightly different bird, and rather costly. And public crutches such as subsidies, guaranteed loans and markets, protection from both foreign and domestic competition, and the like generally do more harm than good as postwar examples amply attests and the recent Philippines disaster with crony entrepreneurs. . . . But the subject is a complex one and there are only a few studies in Asia to go by. The difficulty is with the methodology to study the multi-dimensional trait, many of the factors involved not easily specified . . . quantifiable. Perhaps educational methods are not sufficient to produce entrepreneurs; techniques of management may be helpful but to learn how and when to take risks, to attract capital, to use it efficiently, manage the workers, to innovate, and toil long, foregoing the leisure normal to others —— and all of this combined in one person at varying mix require much learning from exposure and trial and error. The unique subjective, psychological, innovative, venturing attributes required of good entrepreneurs are difficult to teach in classrooms. And the supply side interacts with the demand for entrepreneurs under intangible, macro conditions.

One noteworthy study of Korean entrepreneurship concluded with the identification of Confucian virtues as the major ingredient in successful entrepreneurship. 1/

1/ L.P. Jones and Il. Sakong, Government, Business, and Entrepreneurship in Economic Development: the Korean Case, Harvard: 1980.

Schooling was not unimportant especially in learning the basic techniques of managing business, but the most important common denominator showing up in the dozen or so of interviews of successful entrepreneurs in smaller enterprises was the learning experience obtained from working in the family business or working in other firms. This may be a basic necessary condition but the sufficient ones are difficult to pinpoint —— the venturing spirit, the ability to take a calculated risk, the determination to succeed, and so on. None of these suffices if the operations have not be learned in formal training or in actual practice. This learning is different from that of a person aiming to be a good employee. Instead of excelling in one portion of the entire operation, the would-be entrepreneur must master all the skills of the entire operation if he is to venture out on his own.

There may be something to the Confucian hypothesis. After independence, Taiwan and Korea had no trouble generating plenty of entrepreneurs who eventually succeeded in exporting. They had no entrepreneurial experience in the colonial period nor training in schools but they learned quickly while working for others whether foreign or local, or as partners in joint ventures, from licensing and technical tie-ups, and most important from the hundreds of buyers from abroad. The big department and other stores of the U.S. (Sears, Penney, Ward, etc.) and Europe sent their buyers with designers and engineers to teach the Japanese and Hong Kong entrepreneurs to produce radios, T.V., shoes and garments, toys, housewares, etc.; which they purchased in large quantities for sale in their stores. When in the 1950s full employment raised wages in Japan and Hong Kong, Hong began to teach entrepreneurs in

Taiwan and S. Korea in the 1960s. (They skipped nearby Philippines deterred by the many barriers to free trade.)[1/]

It takes determined diligence to learn from others, dedication to long hours of labor and few hours of leisure, unmindful of arduous manual work, and willingness to face competition and risks —— all in furthering the fortunes of the family and ancestors. Confucian traditions are much more in line with these attributes than Islamic, Hindu, Catholic and other teachings.

Important, too, was the demand side. The comprehensive land reform and rural development raised incomes. Domestic purchasing power for labor-intensive wage goods accelerated making it easier for new entrepreneurs to sell profitably, accumulate capital, expand production scale and then sell abroad, with more scale-economies. The forces on both supply and demand side interacted and interpenetrated to generate a work environment of exuberance and vigor. But the whole subject of entrepreneurship needs more researching in Asian countries, starting with case studies of successful entrepreneurs, which one finds plentiful only in Japan. The revival of the importance of small enterprises with the emergence of electronic technologies makes the topic a worthwhile area of serious study.

1/ On the role of department stores, mail order houses, and supermarkets of United States and Europe in establishing the foundations of the consumer electronics industry in East Asia in the 1950s and 1960s, see Gene Gregory, "Asia's Electronic Revolution," Euro-Asia Business Review, No. 1, 1982.

In concluding by way of a summary, we explore what broad policy changes that the end of the high growth decades and the beginning of worsening income distributions may portend for the future.

For countries in Asia which have yet to exploit fully the quantitative sources of productivity growth, top priority should be given to achieve full employment. It is difficult to imagine anything more wasteful than large pools of idle manpower. East Asia has shown one way for approaching full utilization —— via a strategy of agricultural development including rising rice yields, multiple-diversified cropping, off-farm employment, supplemented with labor-intensive industrialization. This is appropriate for the meager pool of modernized manpower in the beginning of growth since the demand of labor-intensive agriculturalization and light industrialization for educated manpower is minimal. Moreover, with the retardation of export growth the time is ripe for more domestically-led strategy with faster development of manpower quality and rural infrastructure. This is urgent for South Asia, especially India with the world's largest poverty groups in the rural sector, but Indonesia and the Philippines can benefit from more rural development.

For countries operating at full employment levels, more technology-intensive and capital-intensive strategy with plans to reduce their agricultural sector are desirable. It is imperative that they do so and open their economies for the importation of labor-intensive diversified food products and light industrial products from countries striving to generate more jobs.

Once full employment is approached, the qualitative aspects of human resources can be more readily exploited for productivity growth. Real wages should rise consonant with productivity increases, compelling entrepreneurs to adopt technologies to substitute for labor, and motivating workers to improve their efficiency. Wage rises greater than productivity are not sustainable since the entrepreneur will not be able to invest in new technologies, while constant wages will fail to motivate workers.

Full employment, rising wages and profits, increasing food consumption and more health services and better distribution of incomes should contribute to a more energetic work force better motivated to learn and improve skills. Throughout, we have emphasized the strategic role played by the macro atmosphere in productive growth which for want of a better term was variously called the social milieu, or the surrounding environment. This topic needs to be researched to know more clearly what it is and how it is that a lethargic, lackadaisical milieu is transformed into one of vigor and vitality, and how it influences sectoral productivity. Pending such studies, we may assume that the milieu is the sum total of the bits of influences emanating from some of the sources of manpower development discussed above: the home, the schools, the workshops, and the mass media, under varying levels of employment utilization. In turn, this sum total is an entity which reacts on the sector sources to influence their productivity. But there may be more than sector sources that go to make up the macro environment.

The competitive spirit of the market and the vigor of the market forces and institutions in the market are critical ingredients. Let the market degenerate with heavy-handed intervention, overprotected market forces and monopolistic and monopsonistic organizations and vitality will be endangered. After being nurtured for decades in the postwar era the market and the market forces must be permitted to play a bigger role everywhere.

Political authoritarianism for long periods can blunt the initiative of the populace, especially if it is based on intensive military rule at the various levels of government. An increasingly educated labor force needs to participate much more not only in the market place but in the governance fo the nation. This labor force is no longer the illiterate, tradition-bound citizenry of the early postwar years. It cannot be pushed around and ordered to do this or that as with the older generation. It will demand more participation in decision-making in economic and political affairs in the decade to come. If not, it will sap the exuberance of the young and drive others to rebel.

Community organizations can help to improve the vitality of the environment. This is particular the case with religious institutions which pervade countries in South and Southeast Asia. The doctrines of certain religions rooted in ancient conditions may have to be modified and the archaic elements replaced. Excessive concerns for the life hereafter breeding fatalism and asceticism, debilitating the drive to improve the well-being of mankind in the present and the striving for a better future of descendants. Over the decades, Buddhism in the East Asia, has achieved

a better balance between weltanschauung of life here and hereafter with Confucian ethics intervening as guideposts in the relation of man to man.

As we turn our eyes to the future, the vision of a Pacific Century looms in the distant horizon, as the vitality and vigor of northwestern Europe weakens and as the progress of Eastern Europe is obstructed with obsolete Communist institutions. But not all nations of Asia may make it to the Pacific Century. The message of this paper is that only those who can sustain a high level of vitality and vigor of their manpower, and the dynamism of institutions staffed with good human resources can hope to move into the Pacific Century.

Table 1 Average Growth Rates, 1950 to 1980: Population, Employment, GDP in Asia in Percent, and Levels

	Population	Employment	GDP	GDP per Capita	GDP per Worker	Levels of per capita Dollar GNP 1980	Agri. Pop. per hectare of agri. land 1979
EAST ASIA	2.4%	3.5%	8.4%	6.1%	4.8%	4446	5.1
Japan	1.1	1.6	8.0	6.9	6.3	9890	2.7
S. Korea	2.1	3.5	7.7	5.7	4.2	1520	6.7
Taiwan	2.7	4.0	8.7	5.7	4.7	2150	5.8
Hong Kong	3.2	4.9	9.5	6.0	4.7	4240	-
Singapore	2.9	3.6	8.1	6.2	4.0	4430	-
SOUTHEAST ASIA	2.6	3.4	6.1	3.5	2.9	853	2.7
Malaysia	2.6.	3.0	6.0	3.2	3.0	1620	1.7
Thailand	2.8	3.6	7.1	4.2	3.5	670	2.0
Indonesia	2.1	3.1	5.2	3.3	3.0	430	4.6
Philippines	2.8	3.9	6.0	3.1	2.0	690	2.3
SOUTH ASIA	2.2	2.3	3.7	1.5	1.8	190	3.8
India	2.1	2.7	3.6	1.8	0.9	240	2.6
Bangladesh	2.5	-	3.8	0.7	-	130	7.9
Burma	2.2	-	4.5	2.2	-	170	1.8
Sri Lanka	2.2	1.8	4.2	2.0	2.6	270	3.6
Nepal	1.8	-	2.5	0.7	-	140	3.2

Note: Regional averages are simple, unweighted averages.

Sources: Employment data are computed from various issues of ILO Yearbook of Labour Statistics. Unless otherwise indicated, product and population data for the 1950s and 1960s were taken from IBRD World Tables 1980 and those for the 1970s from IBRD World Development Report 1982. Taiwan's data for the 1970s computed from various issues of National Income of ROC and Statistical Yearbook of ROC.

Table 2 Indicators of Human Resource Development
(Circa 1980)

	Adult literacy rate	Life expectancy at birth (years)	Total fertility rate	Daily per capita calorie	TDI of quintiles	% of male agri. labor force in total labor force	Female working rate	Average Years of school completed
East Asia	87	71	2.4	2,879	.49	14	36	8.5
Japan	99	76	1.8	2,912	.41	6	39	11.5
China	59	64	2.9	2,539	.50	41	35	-
Taiwan	90	72	2.5	2,812	.40	13	35	8.5
Hong Kong	90	74	2.2	2,898	.57	2	35	8.0
Singapore	83	72	1.8	3,158	.52	2	34	6.0
S. Korea	93	65	3.0	2,957	.55	19	37	8.5
Southeast Asia	71	61	4.3	2,381	.67	34	39	5.8
Malaysia	60	64	4.2	2,625	.73	24	36	6.6
Thailand	86	63	4.0	2,308	.62	36	47	5.8
Philippines	75	64	4.6	2,275	.68	37	37	7.1
Indonesia	62	53	4.5	2,315	.66	38	36	3.7
South Asia	46	52	5.2	2,046	.60	56	22	2.1
India	36	52	4.9	1,880	.60	55	17	0.7
Sri Lanka	85	66	3.6	2,238	.50	39	28	4.6
Burma	66	54	5.3	2,174	-	-	-	-
Nepal	19	44	6.1	1,977	.78	57	35	1.0
Bangladesh	26	46	6.0	1,960	.51	71	6	2.0

Notes: TDI derived as the sum of differences between shares of income and household of each quintile with signs ignored. To give an idea of relationship between TDI and Gini coefficient, the latter is generally about three-fourth of the former. Female workers as percent to total labor force.

Sources: IBRD World Development Report, 1982, 1983, and 1984 editions except column 6 which is computed from ILO Yearbook of Labour Statistics 1982, for early years see previous report. Years of school completed of labor force computed from the 1980 Censuses. 1971 Census of Population for India and Sri Lanka.

Table 3

Projected Growth Rate of Population and Labor Force, 1980-2000

Country	Population	Total Fertility 1983	Total Fertility 2000	Labor Force	Life Expectancy at birth (1995-2000)
		Births			
East Asia	1.1%/year	2.0	2.0	1.4%/year	74.2 years
Japan	0.5	1.7	1.9	0.7	77.6
China	1.2	2.3	2.0	1.8	71.0
Hong Kong	1.3	1.8	2.0	1.3	76.0
Singapore	1.0	1.7	1.9	1.1	74.4
S. Korea	1.4	2.7	2.1	1.9	71.9
Southeast Asia	1.9	3.9	2.5	2.4	66.8
Malaysia	2.0	3.7	2.4	2.7	70.7
Thailand	1.7	3.4	2.2	2.1	66.8
Philippines	2.1	4.2	2.7	2.5	70.1
Indonesia	1.9	4.3	2.8	2.4	59.7
South Asia	2.2	5.2	3.6	2.4	59.6
India	1.8	4.8	2.9	2.1	58.6
Sri Lanka	1.8	3.4	2.3	2.2	72.0
Burma	2.3	5.3	3.6	2.2	61.9
Nepal	2.6	6.3	5.4	2.5	51.9
Bangladesh	2.3	6.0	3.7	2.9	53.4

Sources: World Development Report 1985, IBRD, Tables 19, 20, 21. These projects are based on updated computer printouts of the UN World Population Prospects as Assessed in 1982, from the most recent issues of the UN Population and Vital Statistics Report and International Migration: Levels & Trends and from the World Bank, the Population Council, the US Bureau of the Census Demographic Statistics (Eurostat 1984), and national censuses. The estimates of the sectoral distribution of the labor force are from International Labor Organization (ILO), Labour Force Estimates and Projections, 1950-2000 and from the World Bank. Life expectancy at birth from UN World Population Prospects as Assessed in 1982, Table A-15.

Note: Unweighted simple averages.

Table 4 Average Years of School Completed of Employed Persons in Occupation

Occupation	Japan		Taiwan		Korea		Hong Kong		Singapore*	
	1960	1979	1970	1980	1970	1980	1971	1981	1970	1980
Professional	13.5	14.3	12.4	13.4	13.7	14.5	13.9	13.6	9.8	10.9
Administrative	12.3	13.0	10.4	11.3	12.6	13.9	8.6	12.5	9.3	10.5
Clerical workers	12.0	12.6	10.9	11.9	12.7	12.7	8.8	11.2	7.2	7.6
Sales workers	10.0	11.9	6.4	8.4	8.3	9.6		7.7	6.2	4.6
Service workers	9.6	10.4	8.2	7.4	7.9	9.1	5.5	6.4	6.1	3.9
Agricultural workers	8.5	9.8	4.3	5.5	4.4	5.3	2.4	3.7	6.0	2.9
Production workers	9.2	10.6	6.1	7.7	8.2	9.6	6.0	7.1	6.1	4.5
Others	9.4	10.7	3.5	10.9	11.9	10.9	6.6	8.7	7.5	7.8
Total	9.7	11.5	6.5	8.5	6.8	8.5	6.8	8.0	6.7	6.0

Sources: Respective national census of population and labor force survey. */ The fall in 1980 in this and the next table for Singapore is puzzling and we need to look into this in the future.

Continuation of Table 4

Occupation	West Malaysia 1967-1968	West Malaysia 1980	Thailand 1971	Thailand 1981	Philippines 1970	Philippines 1980	Indonesia 1971	Indonesia 1980
Professional	10.4	11.3	6.6	5.1	13.3	16.2	9.3	10.7
Administrative	8.2	11.0	8.8	8.6	9.3	14.1	8.3	10.5
Clerical workers	9.3	10.4	10.5	9.6	11.9	13.3	7.4	9.3
Sales workers	5.4	6.7	5.2	6.0	6.6	8.5	3.1	3.7
Service workers	5.0	6.9	7.0	7.0	5.9	7.0	2.7	3.8
Agricultural workers	3.8	4.2	5.1	5.4	3.9	4.8	2.2	2.7
Production workers	5.4	6.7	5.6	6.0	6.0	7.7	3.5	4.2
Others	5.9	6.9	6.1	5.6	7.6	8.7	3.7	8.3
Total	5.0	6.6	5.3	5.8	5.6	7.1	2.9	3.7

Sources: Respective national census of population and labor force survey.

Table 5 Average Years of School Completed of Employed Persons in Industry

Industry	Japan		Taiwan		Korea		Hong Kong		Singapore	
	1960	1979	1979	1980	1970	1980	1971	1981	1970	1980
Agriculture	8.5	9.9	4.4	5.6	4.4	5.3	2.6	3.5	6.1	3.3
Mining	9.4	9.7	4.9	6.2	7.4	8.4	5.8	7.6	7.2	4.6
Construction	9.3	10.5	5.9	8.7	8.1	9.3	6.9	7.3	6.2	4.4
Manufacturing	9.9	10.8	7.1	11.3	8.9	10.3	6.3	7.5	6.4	5.7
Trade	10.0	21.6	6.4	7.5	8.4	9.7	8.0	7.8	6.4	5.2
Finance	12.2	11.6	11.2	3.7	12.1	12.2		11.6	7.8	8.1
Transport	10.4	12.8	7.6	9.2	10.3	10.9	7.0	8.2	6.4	5.7
Utilities	11.1	11.4	10.2	12.3	11.6	12.3	8.4	9.6	6.8	6.4
Personal services	11.1	12.1	9.3	10.6	10.4	11.9	7.9	9.2	7.3	
Public services	11.7	12.5								
Others			7.7				7.3	7.8	6.0	7.2
Total	9.7	11.5	6.5	8.5	6.8	8.5	6.8	8.0	6.7	6.0

Sources: Respective national census of population and labor force survey.

Industry	West Malaysia 1967-1968	West Malaysia 1980	Thailand 1971	Thailand 1981	Philippines 1961	Philippines 1965	Indonesia 1971	Indonesia 1980
Agriculture	3.5	4.4	5.1	5.4	3.7	3.8	2.2	2.7
Mining	5.3	5.8	5.3	5.8	3.4	5.7	5.8	4.4
Construction	5.6	6.4	6.0	6.1	5.7	5.7	4.0	4.4
Manufacturing	5.5	7.4	5.7	6.1	5.4	5.5	3.0	3.9
Trade	6.0	6.9	5.7	6.4	5.9	6.1	3.2	3.7
Finance		10.4					9.1	8.7
Transport	6.2	6.9	6.8	7.0	6.3	6.9	4.6	5.3
Utilities	6.6	8.5	9.9	8.5	7.2	6.6	7.2	8.0
Personal services	7.0	8.9	6.7	6.3	5.4	6.0	5.9	
Public services					10.0	10.4		6.6
Others	6.1	7.5	6.2	5.2	5.1	6.0	3.7	5.9
Total	5.0	6.6	5.3	5.8	4.6	5.0	2.9	3.7

Sources: Respective national census of population and labor force survey.