

information, and textile industries, and robotic technology. Country studies on Japan, Korea, China, Indonesia, Malaysia, Singapore, Canada and New Zealand are also presented. Obviously, because their contents are so varied, no brief summary statement is feasible. Instead, this reviewer is content to point out that the studies contained in Parts II and III are summarized in the volume's concluding part. In it, the co-editors and David McKendrick aim "... to draw out the main issues emerging from each chapter and to highlight the main points raised ..." (p. 299). An example of points that they draw out follows,

There are two types of link between export-oriented strategy and technological development. One, small countries are likely to develop a strong specialisation in a few export commodities or services. A lot of effort is placed on developing new technologies in these sectors. Two, export-oriented industries are likely to be aware of and use the latest technology in the industry to keep their competitive edge. (p. 332).

With this basic point in mind, the summary chapter takes note of a warning against using a rigid concept of countries climbing a technological ladder at different levels of development. The paper on New Zealand, as well as the paper on Malaysia, indicate that considerable technological gaps can exist within the same country. And while a country might possess frontier technology in certain niches, it is difficult to predict which particular niches will develop. Indeed, they often develop because of historical and geographical factors. For instance, how much of the development in R&D in natural resources is an effort to renew comparative advantage in response to increased risks due to external shocks?

They further extend their line of reasoning by pointing out that resource-rich countries may have greater difficulty in choosing niches. But the advantage for densely-populated countries without natural resources is that it is easier for them to see ahead, and this makes selecting and adopting specific technologies easier. Resource-rich countries will not go through the same sort of progression. Their niches will lie in their natural resource base, but at some point some

manufacturing will have to take place. Selecting these manufacturing niches is more problematic for these countries (pp. 322–23).

Numerous points of caution against simplistic thinking appear throughout the volume. For example, Sir Frank Holmes points out that a major lesson to be learned is that,

... having more technology is less important than introducing the right kind of technology and using [it] efficiently. Furthermore, an inhospitable trading environment may severely test both niche players and government policy-makers, with many unintended consequences. (p. 323)

In summary, then, the volume is theoretically well-grounded, empirically rich in both industry and country studies and policy-oriented in its main thrust and focus. The contributors are distinguished, their topics important, their insights pertinent, and hopefully this review gives potential readers some notion of the useful nature of their ideas. The volume features consistency and intellectual linearity even though its contents are varied and stratified. It is a book that this reviewer strongly recommends to scholars and officials concerned with technology's role in development processes in Asia-Pacific and elsewhere.

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Towards Full Employment Strategy For Accelerated Economic Growth. Edited by I. Getubig and H.T. Oshima. Kuala Lumpur: Asian and Pacific Development Centre, January 1991.

The book analyses the examples of post-war economic growth in Japan, the Four Dragons, and eight other South and Southeast Asian countries, supporting a theory for employment-led, accelerated growth. It may require more than one review in order to establish to what extent such a theory would be applicable to other regions of the world, such as Africa or Latin America, for example.

What the book convincingly does is to introduce the European visitor, curious for analogies in Southeast Asia to the European Community's (EC) own model of growth and economic co-operation, to a region which is a vast mosaic of differences caused by diverging colonial heritages.

There are parts of the former Japanese Empire, such as Taiwan and South Korea, which benefited from land reform imposed on them by the victorious Americans after 1945. Oddly enough, similar reforms were not imposed on the big landowners in American's own former colony, the Philippines.

There are the city-states of Hong Kong and Singapore, where the British Empire had left a valuable service infrastructure that made both harbours crossroads of international trade, within the Commonwealth and beyond. The British and Dutch East India Companies left their marks in Ceylon/Sri Lanka as well as in Indonesia, yet both countries, once independent after World War II, dealt differently with their respective heritages. The one major Southeast Asian country that never had been colonized, Thailand, went its own way of economic development, apparently less influenced than others by factors external to its own traditions.

The book also convinces by observing that government policies geared to building their respective national economies from grassroots up, rather than implementing them from the top downwards, have been more successful in generating employment-led growth, and thus in reducing poverty, at least in the Asian countries under review here.

There are the extreme examples of the Philippines and Sri Lanka, both heirs to once flourishing, privately managed sugar and tea plantations. The Philippines, where the big landowners are still in control, missed the opportunity for land reform in order to counter the post-war population growth. Those sugar plantations, operated by reluctant employees, declined while elsewhere in Thailand and Taiwan peasant-owned smaller plots began to export sugar produced more productively. Sri Lanka experimented with successive leftist governments, which first taxed the effectively run British tea plantations almost out of business (in order to pay for ambitious

welfare programmes), and eventually took them into state ownership. More recently, Sri Lanka's authorities realized that they too need motivation and productivity at grassroot levels, as without them it is impossible to maintain even a lesser amount of welfare spending in the longer run.

Obviously, the reformed land tenure in Japan, Korea and Taiwan provided their agricultural sectors a beneficial stimulus, as the new small landowners now worked for their own account, diversifying mono-cultures like rice into income-elastic crops of fruit, vegetables and livestock, processed and eventually exported by small rural industries, thus building up incomes and rising standards of living. Similar industries arose in the textile, and then in the electrical home-appliance sectors, producing for domestic and foreign demand.

Entirely different starting conditions were found in Hong Kong and Singapore. Hong Kong benefited from a multitude of Chinese refugee entrepreneurs leaving the mainland after 1949, using the available service infrastructure to produce and sell, cottage-industry fashion, textiles, consumer goods, and eventually high-technology products to domestic and foreign markets. Singapore, which originally was linked to Malaysia, took a similar turn after its complete independence in 1965.

Malaysia and Indonesia, both rich in natural resources (oil, rubber, tin, palm-oil, etc.), apparently in order to become less dependent on highly mobile commodity prices, were tempted to try import-substitution (transport equipment, consumer durables) by attracting capital-intensive foreign investment supposed to produce for the domestic market. The authors of the book suggest that the experience in both cases has not been conclusive. This kind of investment, according to them, needs protection until strong enough to face competition. It means restriction to other investment, hence to the generation of employment, and stifles innovation. The ease of reserved domestic markets makes them unfit to compete on foreign soil, and, the authors stress, employment is only switched from labour-intensive to capital-intensive sectors (new opportunities destroying old ones), thus eliminating desirable rural employment. Given a long period before reaching

maturity, this type of investment also constitutes a drain on national finance as long-term debt has to be serviced.

In contrast, Thailand did not embark on similar adventures. According to the authors, a fairly effective national bureaucracy stimulated peasant-owners to diversify their agricultural produce, as well as downstream industries to manufacture for domestic and foreign markets. A build-up similar to the one observed for Taiwan took place. Eventually, Japan and others would have electrical appliances assembled in Thailand and re-exported to world markets, but the Thai Government has no comparable long-term debt, which elsewhere is a substantial burden on national budgets.

Such are the main conclusions emerging from this book, quite revealing as it were to the European visitor (and admirer of Southeast Asian efficiency). However, it remains to be seen whether the authors' formula for employment-led growth will apply equally under different circumstances, notably those of Africa or Latin America, regions more poverty-stricken than Southeast Asia, where up to three crops per year may be harvested. Yet, one might visualize that it would help in cases such as Brazil, where massive investment in Amazonia (iron-ore in Carajas) threatens the environment and tribal communities. But the new "economic corridors" in Malaysia should be carefully scrutinized for environmental damage, as the public uproar over the negative aspects of the Trans-Amazonian Highway and road-induced misdevelopment along the Bolivian border would suggest.

One may also sympathize with the authors' view that threshold countries should not seek to introduce, at any cost, automobile assembly on their territory, while one would not exclude entirely that market-driven forces (rising wages in Japan) may prompt Japanese manufacturers to assemble in larger markets like Brazil or Indonesia. It has happened between the United States and Canada, when part of Detroit's production was eventually assembled north of the border.

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Energy Systems and the Environment: Approaches to Impact Assessment in Asian Developing Countries. Edited by Peter Hills and K.V. Ramani. Kuala Lumpur: Asian and Pacific Development Centre, 1990.

The overall objective of Peter Hills and K.V. Ramani's work is to provide "a (better) foundation for future regional and national training efforts directed to facilitating the integration of environmental considerations into the national energy planning process".¹ In this, the editors have set themselves a very timely and important, but also a very ambitious task.²

Like in other parts of the world, some of the Asian and Pacific governments have started to react to the increasing public concern for the environment. In some countries, the pertinent legislation has come under review. Some of the responsible authorities in the region are now also requesting Environmental Impact Assessment (EIA) Studies to be carried out by developers of environmentally controversial projects. According to the EIA philosophy and concept, final project approval is conditional on government and public acceptance of the anticipated environmental effects.³ EIA studies may at the same time also be used by governments to determine feasible environmental protection measures.

All energy projects, including the exploration of resources, primary energy production as well as all electric power projects have significant environmental impact. International organizations and governments in the region, therefore, see the need to introduce and improve environmental impact assessments as part of the decision making process for energy projects. The overall governmental objective of enhancing sustainable development would actually suggest conducting even more comprehensive environmental impact assessments, not only for individual projects, but also for the national energy programmes as a whole. This would also include aspects of fuel end-use [in]efficiency. In theory, cost-benefit analysis as well as EIA studies offer themselves