BECOMING AN NIE: A STRATEGY FOR SRI LANKA

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Introduction

"We hope to join the ranks of the Newly Industrialized Countries (NICs) by the year 2000," declared the Prime Minister of Sri Lanka in a recent statement,[1] a seemingly ambitious goal for a country whose manufacturing sector presently accounts for just 16 per cent of GDP (1989), as compared with 26 per cent to 30 per cent in Korea and Taiwan (1989), and whose manufactured exports contribute around 50 per cent of total exports (1989) as compared with 96 per cent to 98 per cent in Korea and Taiwan (1987). Nevertheless, an indicative target of this kind is an invaluable spur to the immense national effort that needs to be launched now if this deadline were not to slip by much. The manufacturing base of Korea and Taiwan as late as 1965 - at around 18 per cent of GDP - was not much larger than Sri Lanka's is now. It is not unreasonable, therefore, to hope that what East Asia has done, Sri Lanka can do too, within a roughly similar time frame of 20 to 25 years. By the year 2000 A.D. certainly, Sri Lanka could be well on the way to becoming a NIC, even though parity with today's achievements of the East Asian NICs may not be reached until early in the 21st century—given, of course, the implementation of the right policies from now on.

What precisely are the policies that Sri Lanka needs to pursue. There is obviously a good deal to learn from the successful experience of East Asia as well as from the experience of failure in much of Asia, Africa and Latin America, and indeed of the formerly centrally planned economies of the former Soviet Union and Eastern Europe. It is however important to ensure that the right lessons are learnt. What might these lessons be?

A useful starting point is the mainstream—the so-called moderate— 'neo-classical' view which has been cogently argued in the World Bank's **World Development Report** of 1991.[2] In this important document, World Bank economists have tried to distil from the development experience of the last four decades what may be termed the elixir of successful development. The central analytical argument of the report is that economic growth is determined essentially by the growth of total factor productivity of capital and labour. The report's analysis comes to the conclusion that (i) the more open an economy, (ii) the greater the degree of competition, and (iii) the higher its investment in education, the greater would be its growth of total factor productivity, and hence its overall economic growth. Although the significance of the international economic environment is recognised, a major argument of the report is that the domestic policy matters far more for raising per capita income than do external economic conditions. The centre-piece of the report's policy conclusions is its recommendation of a so-called 'market-friendly' approach to development. The report states: "Economic theory and practical experience suggest that (government) interventions are likely to help provided they are market-friendly."[3] Market-friendly is defined to mean the following:

a) Intervene reluctantly. Let markets work unless it is demonstrably better to step in. It is usually a mistake for the state to carry out physical production, or to protect the domestic production of a good that can be imported more cheaply, and whose local production offers few spillover benefits.

b) Apply checks and balances. Put interventions continually to the discipline of international and domestic markets.

c) Intervene openly. Make interventions simple, transparent and subject to rules rather than official discretion.

The state's role in economic development in this 'market-friendly' approach is regarded as being important, but best limited to providing the social, legal and economic infrastructure, and to creating a suitable climate for private enterprise—in brief, a kind of 'night watchman's role.' The report implicates other development economists in its policy recommendations by suggesting that there is now a growing consensus around the 'market-friendly approach' to development.[4] Since 1977, Sri Lanka has adopted a set of policies which can be described as 'market-friendly' precisely in the above

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sense.[5] Does this then mean that Sri Lanka is on the way to fulfilling its aspiration to join the ranks of the NICs, and that all it needs to do now is to correct any deviations from the 'market-friendly' path? Or, is there a need for taking additional measures, even measures that may conflict with some of the tenets of the 'market-friendly' approach? That is the question I shall address in this paper.

I shall argue that while the market and competition must be allowed to determine the basic environment within which development is to take place, an unthinking allegiance to what has been christened as the 'market-friendly' approach may not be wise. The essential point can be put simply as follows. The 'market-friendly' approach is exclusively concerned with the structure of incentives; it seeks to ensure that economic actors perceive the correct signals, and have the incentive to act accordingly. But there is more to development than the provision of correct incentives. There are bottle-necks on both supply and demand sides and the elimination of these bottle-necks will typically call for actions which not only go far beyond the 'minimal activism' advocated by the market-enthusiasts, but may also conflict with some of the specific principles of the 'market-friendly' approach. I shall discuss these issues in the specific context of Sri Lanka. To set the scene, let me begin by giving a brief description of the policy regimes pursued in Sri Lanka in the last four decades.

Trade and Industrial Policies of Sri Lanka

(1) The Inward-Oriented Phase (1948-1977)

The policy regime that existed up to 1977 can be described as inward-oriented and interventionist. The first comprehensive exchange controls were introduced in 1960 by the Sri Lanka Freedom Party (SLFP) government. These were gradually accompanied by a whole array of restrictions on foreign trade and private sector industrial activity.

First, a variety of high tariffs, ranging from 100 per cent to 300 per cent, were introduced on a large number of imported consumer goods and some raw materials and intermediate goods. Later, quotas were adopted instead of tariffs as the major instrument of protection. By the mid 1960s, stringent quotas covered all imports except basic food items, pharmaceutical, fertilizers, and petroleum products.

Second, the government became directly involved in trade and industry by nationalizing private enterprises, and setting up public manufacturing enterprises (PMEs), and public service enterprises (PSEs). Through quotas and import licensing in the 1960s and 1970s, many PME s and PSEs were provided with near exclusive access to imports of construction materials, spare parts and capital equipment.

Third, the exchange control regulations, by limiting transfers of dividends and profits, also discouraged foreign direct investment (FDI) in the Sri Lankan economy. Further restrictions of FDI were introduced through legislation.

Thus, the gradual strengthening of import and exchange controls, domestic price controls, and the establishment of a large number of public sector enterprises set in motion a classic import substitution industrialization (ISI) strategy for Sri Lankan industry. The salient characteristic of the ISI strategy was that it biased trade and industrial incentives towards production for the domestic market and against exports.

There was an attempt at partial liberalization of the system of import controls and the promotion of non-traditional exports during the period 1965 to 1970 when the United National Party (UNP) government held office. Important policy reforms included: devaluation of the rupee in 1967; adoption of a dual exchange rate system; and reintroduction of the open general license system for imports.

But the preliminary moves towards liberalization were largely abandoned in 1970, following the election of the new United Front (UF) government. Over the subsequent seven years there was an intensification of trade restrictions, and increased state participation in industry. The trade regime was tightened significantly as quantitative restrictions were brought back. At the same time, public manufacturing enterprises (PMEs) rapidly increased their size and role in economic activity.

Nearly two decades of an ISI strategy left a deep imprint on Sri Lankan industry. There is a general consensus that Sri Lankan industry had the following features during its inward-looking period: it was (i) highly protected and inefficient; (ii) oligopolistic in structure; (iii) operating substantially below full capacity; (iv) dependent on capital-intensive technologies with a limited job creating capacity; (v) dependent on imports on intermediates and capital goods and vulnerable to foreign exchange constraints; and (vi) above all, characterized by a bias against industrial exports.

(2) The Outward-Oriented Phase (1977 to the present)

After 1977, the newly elected United National Party government signalled a break with the past; for the first time since independence in 1948, Sri Lanka was set to embark upon a development strategy emphasizing economic growth based on a rapid growth of industrial exports from private firms, and a greater reliance on the price mechanism to allocate resources. In this respect,

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Sri Lanka attempted to emulate the success of the newly industrializing countries (NICs) of East Asia.

In November 1977, the government introduced a package of policy reforms. It

a) reduced direct intervention in foreign trade, exchange and financial markets by removing most import quotas and replacing them by a system of import tariffs, devaluing the rupee, and raising interest rates;

b) sharply reduced consumption subsidies (especially on the staple food, rice), eliminated other price controls, and encouraged private sector investment (through tax breaks, and infrastructural development, including setting up a 200 square mile Free Trade Zone, symbolically the same size as Singapore);

c) initiated a privatisation programme for PMEs.

The outward-oriented strategy, introduced in 1977, sought to reform trade and industrial policies (particularly, tariff and exchange rate policy) so that they did not selectively discriminate between production or the domestic market and exports. Elimination of the bias against exports corresponds to a situation of policy neutrality, following which, resources shift away from formerly protected sectors into alternative sectors, and output and exports of the latter sectors increase. A neutral policy was deemed to be desirable in principle because it approximates the condition of free trade.

An Analysis of the Post-1977 Policies

The immediate effect of the new policy regime was decidedly favourable to manufacturing in general, and manufactured exports in particular. Real manufactured exports tripled between 1979 and 1989, and their growth averaged over 16.0 per cent per year between 1984-1989. Several features of this growth spurt are worth noting.

First, a significant improvement was recorded in the ratio of manufactured exports to gross manufactured output. In 1989, manufactured exports accounted for 43.9 per cent of manufacturing output in Sri Lanka, compared to the 1977 ratio of 20.2 per cent.

Second, there was a shift in the export structure away from a reliance on primary commodities towards manufactures. The share of manufactures in total exports in Sri Lanka rose from 7.4 per cent in 1970, to 12.3 per cent in 1977, and 50.6 per cent in 1989. If petroleum exports are excluded, manufactures accounted for 46.7 per cent of Sri Lankan total exports. This represented a major structural change. As late as 1970, over 90 per cent of Sri Lanka's exports were of agricultural products (primarily tea, rubber and coconut), but this share fell by more than half by 1989, to 43 per cent.

Third, Sri Lanka's manufactured exports have slowly gained a world market share in the 1970s and 1980s. For example, in the case of OECD manufactured imports, Sri Lanka's share rose from 0.008 per cent of the total in 1969 to 0.07 per cent in 1989.

These trends indicate that Sri Lanka's manufacturing output has become more export oriented since 1977, its export structure has become less reliant on primary commodities, and that its manufactured exports have become more competitive in world markets. They testify indeed to the effectiveness, so far as they went, of the 'market-friendly' economic reforms introduced in 1977, which transformed the structure of economic incentives. The overall effect of these reforms was to enable Sri Lanka to capitalize upon a distinctive comparative advantage built up during the previous two decades of dirigiste policies. Sri Lanka's pioneering role in, and commitment during this period to, what are today termed Human Development Strategies, had resulted in the creation of an exceptionally literate, and healthy, labour force for its level of per capital income. By 1972, Sri Lanka's expenditure on education in relation to total budgetary expenditure was at 13 per cent, very nearly that of South Korea and Taiwan which was 14.5 to 15 per cent respectively. By 1965, Sri lanka was again in the same league as South Korea and Taiwan in registering virtually 100 per cent enrollment of the eligible age group in primary education, and around a third in secondary education.

These accomplishments of the 1960 s which Sri Lanka enjoyed in common with the leading East Asian NIC's at the time, had to await the economic reforms of 1977 before they could be capitalized upon. The availability of cheap, literate, and trainable labour meant that the incentive package of 1977 was sufficient for Sri Lanka to be able to make a headway relatively quickly in those sectors of manufacturing where low labor costs linked with high labour productivity gave the country a significant comparative advantage. Thus, by 1989 the export of garments alone accounted for as much as 60 per cent of Sri lanka's manufactured exports, with diamonds and jewellery coming a distant second with 12 per cent—the two together accounting for over 70 per cent of total manufactured exports.

The other side of the coin of these favourable changes was that Sri Lanka failed to progress beyond light industry into areas of high-technology manufacturing, which alone provide the dynamic comparative advantages needed to gain market share in world markets. First, as noted, Sri Lanka's export growth has been dominated by a handful of light industries—garments and jewelry— rather than a diversified range of manufactured exports. The share of light industry as a whole in total Sri Lankan exports increased from 6.9 per cent in 1970 to 35.3 per cent in 1987, while that of heavy and chemical industry rose more modestly, from 0.5 per cent to 12.9 per cent. In

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contrast, between 1970 and 1987, the share of heavy and chemical industry in total exports of South Korea increased from 15.8 per cent to 55.0 per cent, and in Taiwan from 31.4 per cent to 46.6 per cent, while the share of light industry in both economies fell markedly. As a consequence, unlike Sri Lanka, South Korea and Taiwan evolved high technology-intensive, and diversified, export structures.

Secondly, again as noted, Sri Lanka's share of the value of OECD manufactured imports remained modest over the two decades from 1969 to 1989, rising only from 0.008 per cent in 1969, to 0.07 per cent in 1989. In this respect, South Korea performed significantly better. South Korea's share in OECD manufactures imports increased from 0.4 per cent to 3.4 per cent in the same period. This aspect of the differential performance between Sri Lanka and East Asia is, in fact, linked to the first. For, it was the boom in heavy industrial exports that permitted the two East Asian NIEs to capture impressive world market shares of many machinery, transport, and electronic products including ships and boats, passenger cars, telecommunications equipment, television, transistors, and automatic data processing equipment.

In short, while the pace of Sri Lanka's export expansion has increased since the introduction of the policy reforms of 1977, there is little doubt that as far as diversification and technological upgrading of manufactured exports are concerned, Sri Lanka did not emulate the two outward-oriented NIEs. What explains this relative failure, and what can be done to enable Sri Lanka to fulfil its aspirations, to become a NIE early in the 21st century?

Import - Substitution

The standard explanation of this relative failure is that Sri Lanka did not go far enough in embracing the outward-looking strategy. It has been pointed out, for example, that the tariff burden still remains high and variable, that the real exchange rate has been allowed to remain above the market equilibrium rate, and that state control of manufacturing production still remain strong. In other words, it is the remnants of the erstwhile import-substituting industrialization strategy that are deemed to be holding Sri Lanka back from transforming itself into a full-fledged NIC. The policy advice that follows from this analysis is that Sri Lanka should root out the remnants of import substitution, and go all the way towards implementing the 'market-friendly' strategy of development. Analysis of this kind is supposedly based on the successful experience of Est Asia. But is this really the lesson of East Asian experience, for Sri Lanka in particular, and South Asia in general?

The belief that it is so seems to be based on two perceptions. First, the contrast between the relatively slow-growing South Asia and fast-growing East and Southeast Asia, is seen primarily as a consequence of the emphasis given to import substitution in the former and to export-orientation in the latter. Secondly, the export dynamism of the latter group of countries is seen as the outcome of liberalizing the domestic trade and industry regime, i.e. the creation of an incentive structure in which import-competing industries would not get an undue advantage relative to the export-oriented industries. These two perceptions imply that in order to achieve rapid growth the South Asian countries too, like the neighbors in the East, must liberalize their trade and industry so as to bring about the desired export-orientation.

As already mentioned, the need for a measure of import liberalization cannot be questioned. What can, however, be questioned is the perception that liberalization and the resulting export orientation will automatically generate the kind of export dynamism that reformers are aiming for. It is this perception which in my view, is based on a misunderstanding of both facts and theory.

The first factual error lies in the popular belief that the export economies of East Asia were 'wise' enough to avoid the kind of import substituting industrialization that has plagued both Sri Lanka and South Asia generally. Even those who are aware that these countries did go through a period of import substitution before they turned towards export orientation tend to think of this earlier phase as being an aberration, or at best an unavoidable 'evil' that simply had to be endured during the earliest stages of development. The really important accomplishment of East Asia, according to this view, is the fact that this 'evil' phase was terminated as soon as possible, instead of being glorified into a strategy of industrialization as in South Asia.

I would, on the contrary, be inclined to argue that this view represents a misreading of history. Far from being an aberration or an unavoidable 'evil', import substitution was an integral part of the growth strategy that was pursued in East Asia. The traditional view fails to see this because it tends to think of import substitution and export orientation as being inherently antagonistic to each other. The fact is, they can be antagonistic under some circumstances but there is nothing inherent about this antagonism. Under appropriate conditions, the two processes can be genuinely complementary, and the key to the success of the East Asian economies lies in their capacity to exploit this complementarity in a highly imaginative way. This is true not only of the established NICs such as Korea and Taiwan, but also of the aspirant NICs such as Malaysia and Thailand, and also of the principal model from which they drew inspiration, namely Japan.

Japanese Model

The Japanese model is therefore worth elaborating in more detail. At the end of World War II, the bulk of Japanese exports consisted of textiles and light manufac- →

tured goods. In the view of the Ministry of International Trade and Industry (MITI), although such an economic structure may have conformed to the theory of comparative advantage (Japan being a labour-surplus economy at the time), it was not viable in the long run. It is worth quoting in full Vice-Minister Ojimi's rationale for the Ministry's industrial policy:[6]

> The MITI decided to establish in Japan industries which require intensive employment of capital and technology, industries that in consideration of comparative cost of production should be the most inappropriate for Japan's industries such as steel, oil-refining, petrochemicals, automobiles, aircraft, industrial machinery of all sorts, and electronics, including electronic computers. From a short run, static viewpoint, encouragement of such industries would seem to conflict with economic rationalism. But from a long-range viewpoint, these are precisely the industries where income elasticity of demand is high, technological progress is rapid, and labour productivity rises fast. It was clear that without these industries it would be difficult to employ a population of 100 million and raise their standard of living to that of Europe and America with light industries alone, whether right or wrong, Japan had to have these heavy and chemical industries. According to Napoleon and Clausewitz, the secret of successful strategy is the concentration of fighting power on the main battle grounds; fortunately, owing to good luck and wisdom spawned by necessity, Japan has been able to concentrate its scant capital in strategic industries.

The government used a wide variety of instruments to bring about the extraordinary structural transformation of the Japanese economy between 1950-73, the period of its most rapid growth. The most important of these were import controls and protection, bank finance and directed and subsidised credit, restrictions on entry and exit of firms in the domestic market, control over foreign exchange and importation of foreign technology.

Japan not only used these methods of intervention to concentrate resources to promote specific industries. Its role in the country's industrial development was deeper and even more intrusive; it extended to the level of the individual firms. MITI accorded favourable treatment in a variety of ways to the specific firms which were thought to best fulfil its aims and were therefore in its good books. As for the 'transparency' of this intervention, it was the exact opposite of the 'market-friendly' specification. Thus Professors Caves and Uekusa[7] have described the operation of Japan's industrial policy as follows:

> Each sector of the Japanese economy has a clientele relation to a ministry or agency of the government. The ministry, in addition to its various statutory means of dealing with the economic sector, holds a general implied administrative responsibility and authority that goes well beyond what is customary in the United States and other Western Countries. While the Ministry of International Trade and Industry (MITI) plays the most prominent role, its operations are not distinctive. "The industrial bureaus of MITI proliferate sectoral targets and plans; they confer, they tinker, they exhort. This is economics by admonition to a degree inconceivable in Washington or London. Business makes few major decisions without consulting the appropriate governmental authority; the same is true in reverse."

The application of this Japanese model to developing countries was given an explicit official blessing in an important recent article by Masaki Shiratori, Japan's Executive Director in the World Bank, published in Japan's leading daily newspaper[8] under the caption 'Development Support Policies for the Developing Countries: Japanese Model rather than Market Orientation'. Shiratori argues:

> For the economic development of a country, it is necessary to develop private sectors and make efforts to create entrepreneurship and improve productivity, and for this purpose, it is most effective to utilize market mechanisms. But, at the same time, it is also important that the government complements the market mechanism and prepares the environment in which such a mechanism works efficiently. The successes of Japan and the newly industrializing economies owe a great deal to this cooperation between the private sector and the government.
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> But the present aid policies of the World Bank give a strong impression that by putting too much emphasis on the market mechanism, they try to make the government role as little as possible.

Following the Japanese example, import substitution along with selective state interventions in support of it, was not merely characteristic of an early phase of industrialization in the East Asian NIEs; it was an integral part of every phase. They carried out import substitution in stages, going through successive product cycles involving an increasing degree of technological sophistication. When the first stage of import substitution was completed, they started exporting the products which they had learned to produce at that stage, while simultaneously embarking on a second stage of import substitution. When that stage in turn had been completed, they again began to export the products that had been mastered at that stage, and at the same time inaugurated a third stage of import substitution. In this manner, import substitution and export expansion went hand-in-hand throughout their

development, with each stage of import substitution laying the foundation for a subsequent stage of export expansion.

East Asia / South Asia

Thus, the difference between South Asia, including Sri Lanka, and East Asia is not that the former adopted import substitution while the latter did not. The difference is rather that unlike in East Asia, import substitution in South Asia has not so far succeeded in laying the foundation for subsequent export expansion in stages. Why did South Asia fail in this regard? In order to understand the reason for this failure, one has to see what exactly was achieved by import substitution in East Asia. What East Asia succeeded in achieving was 'the capability to export.' In a liberalized environment, 'the capability to export' depends on raising productivity to internationally competitive levels. But when latecomers to industrialization borrow technology from the developed world, they find it hard to compete immediately in the world market despite having the advantage of cheaper labour. The lack of experience of producing with borrowed technology typically outweighs any labour cost advantage. Therefore, for every product that is produced with borrowed technology it is, in general, essential to have an initial learning period, during which production is geared towards a protected home market rather than the world market. Import substitution provides precisely this opportunity for 'learning by doing.'

Important policy considerations arise at this point. What needs to be done to ensure that 'learning by doing' is both rapid and efficient? In an ideal world of perfect markets, it could be argued that nothing in particular needs to be done by the state, for markets will provide the necessary incentives for engaging in efficient learning. But we live in a world that is far from being characterised by perfect markets. The markets for the acquisition of technological capability are especially imperfect. The acquisition of this capability is not simply a matter of picking up the most efficient technology from the shelf and then applying it mechanically. All technological acquisitions require adaptation, even if no new innovations are involved. But what constitutes the right kind of adaptation is seldom known a priori; it has to be learnt through practice. This process involves conscious effort, cost and risk of failure. It is therefore necessary to adapt policies which will make this process attractive and profitable for the entrepreneurs. These policies fall broadly into two groups— the so-called 'supply side' and 'demand side' policies respectively.

IV. Supply Side Policies

The acquisition of technological capability can be facilitated by the state if it provides certain externalities on the supply side. In this context, there are three main areas in which concerted state action is needed. These are: policy measures to encourage physical investment including investment in the necessary infrastructure, human capital formation, and technological effort.

The importance of physical investment and associated infra-structure development is too well-known to be stressed here. But investments in human capital are also vital for industrial upgrading and diversification. Such investments refers to education and training at all levels provided by the formal education system as well as on-the-job training in enterprises. In the early phases of export development, and this corresponds to Sri Lanka's experience since 1977 - basic literacy and general education are probably more important, given an adequate incentive structure, and there is less need for specialized technical training (although certain high-level skills are continually required). As more complex industries are established, the need for specialized technical training increases markedly. In particular, an adequate supply of scientific and engineering skills becomes essential for success as countries move up the scale of export activities.

Human capital and technological efforts are complementary. The returns on investments in human capital are only fully realized in industry only when they are combined with investments in technological effort to assimilate and to improve on imported technologies. While technological effort is regarded as the cornerstone of international competitiveness in industrialized countries, it is downplayed in most developing countries. Nevertheless, technological effort has been increasingly associated with rapid productivity growth and the creation of dynamic comparative advantage in the NICs. As the following discussion will show, Sri Lanka's achievements since 1977 in respect of all three of these areas of action are significantly below those of East Asian NICs, though perhaps superior as compared with many other third world countries.[9]

(a) Investment and Infra-Structure Development

So far as physical investment is concerned, between 1965-1980. Sri Lanka accomplished a respectable 11.5 per cent annual growth rate of gross domestic investment (GDI), as compared with 15.9 per cent in South Korea and 15.7 per cent in Taiwan. The decade of the 1980s was however very volatile. The various external shocks had different impacts on different countries and stimulated a variety of responses. Taiwan recorded a negative sign on its growth rate of GDI during 1980-1985 (but recovered to 14.4 per cent during 1985-1987). South Korea, on the other hand, attained an impressive GDI growth rate of 11.6 per cent.

Despite the setbacks of the 1980s, Sri Lanka experienced an increase in its investment coefficient (the ratio of GDI to GDP) between 1965 and 1989 essentially because of →

the substantially enhanced levels of foreign aid attracted to Sri Lanka by the economic reforms of 1977. A large share of aid was earmarked for infrastructure development in power and irrigation so that the investment coefficient peaked at over 30 per cent of GDP in 1980. It fell by 1989 to 21 per cent of GDP, given Sri Lanka's relatively stagnant level of domestic savings, fluctuating around 12 per cent of GDP, as these projects were completed. As a result, real GDI declined over the period 1980 to 1989. Sri Lanka thus suffers by comparison with East Asia, where domestic savings were much more buoyant. In 1989 South Korea, for example, had an investment coefficient of 35 per cent of GDP, and was a net exporter of capital to the tune of 3 per cent of GDP so that domestic savings amounted to as much as 38 per cent of GDP.

More important than the volume and growth of investment was the fact that Sri Lanka had a much lower efficiency of investment compared to East Asia. Efficiency of investment is typically measured by the incremental capital-output ratios (ICORS) which show the relation between increments to the capital stock and increases in output. Comparable ICOR s for Sri Lanka and South Korea for the periods 1965-1980 and 1969-1989 are available from Syrquin.[10] Sri Lanka's ICOR rose from 4.5 to 6.1 in the two sub-periods while South Korea's ICOR increased from 2.8 to 3.1. The tendency of efficiency to decline during the 1980s is noticeable in the higher ICORS in the two countries for that decade. Nevertheless, Sri Lanka achieved a lower efficiency of investment compared to South Korea.

Few studies have investigated the efficiency of investment in Sri Lanka. One recent attempt[11] suggests that the allocation of a substantial part of investment funds to public sector projects with long gestation periods lay behind the deterioration of Sri Lanka's ICOR in the 1980s. Most notable amongst these was the giant Mahaweli irrigation and hydroelectric project (which absorbed over 50 per cent of public sector fixed capital formation).

Two conclusions thus follow regarding physical investment in Sri Lanka. First, despite an increase in the volume of physical investment between 1965 and 1989 (measured by investment coefficients). Sri Lanka performs relatively poorly by Asian standards. Second, Sri Lanka also comes out poorly in terms of efficiency of investment.

(b) Human Capital Formation

The picture is much better in respect of human capital formation, but there are some crucial deficiencies that need corrective policies. Sri Lanka had a solid human capital endowment as early as the mid-1960s. As already noted, it had almost achieved universal primary enrollments and over a third of the age group in the country was enrolled in secondary education. Sri Lanka's achievement nearly matched the primary and secondary enrollments of the East Asian NIEs in 1965, but the latter were ahead in tertiary education enrollments. During the period 1965-1988,m South Korea and Taiwan made great strides in secondary and tertiary education and drew substantially ahead of Sri Lanka. Today, South Korea and Taiwan are on the threshold of universal secondary enrollments and have about a third of the age group in each country enrolled in tertiary education. Sri Lanka, in contrast, has a respectable secondary enrollment ratio of 71 per cent, but its tertiary enrollment ratio is only 4 per cent. (See Annex Table 1.)

South Korea and Taiwan are also ahead in vocational training. Just over 3 per cent of their working populations are enrolled in such training. Meanwhile, under 0.25 per cent of the working population of Sri Lanka is enrolled in vocational training. (See Annex Table 1).

Sri Lanka's problem in technical educational attainments is not merely confined to low levels of supply: Engineering and technical education ratios have tended to behave erratically since the mid-1970s. The ratio of university engineering graduations to total graduations in the 20-24 age group, an index of higher-level engineering skills, did not display any significant signs of improvement between 1977 and 1986 and remained in the range 0.01 per cent to 0.2 per cent. There was no output of engineering graduates in 1987 and 1988, as the universities were closed. (See Annex Table 2).

The correct engineering specialization is probably as important for export performance as an adequate supply. It is generally believed in Sri Lanka that the country is adequately endowed with engineering expertise. But, the evidence suggests otherwise. Civil engineers are by far the biggest group in engineering graduation in Sri Lanka, accounting for 54 per cent of all engineers in 1985/86. But their skills are destined primarily for the service sector (particularly, building and construction) rather than industry. Critical engineering skills for manufacturing appear to be less well represented. Notably production engineers - who are essential for the process and industrial engineering functions in firms - comprise only 4.6 per cent of the total. Similarly, chemical and electronics engineers - which are key technical specialization for these branches of manufacturing - account for only 2.9 per cent and 7.2 per cent respectively. (See Annex Table 3.)

(c) Technological Effort

While there exist important gaps in human capital formation, the biggest gaps exist in the field of technological effort. Indeed, technology development did not even figure as an objective in Sri Lanka's 1977 policy reforms. It was only in the mid-1980s, that the Government of Sri Lanka began the process of formulating a technology policy to facilitate the acquisition of technological capabilities in manufacturing. In 1984, the National Science

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and Technology Planning Co-ordination Committee (NSTPCC) was appointed to develop an integrated science and technology plan for several sectors including industry. The final report of the NSTPCC issued in 1986, made the following policy recommendations: (1) to increase gross spending on Research and Development (R&D) to minimum of 1.0 per cent of GNP; (2) to promote closer interaction between R&D institutes, universities and industry; (3) to create a data base on R&D projects; (4) to improve technical training at the secondary and tertiary levels; and (5) to stem the brain drain of scientists and engineers.

The NSTPCC report and its implementation are preliminary steps towards introducing a coherent technology policy in Sri Lanka. The NSTPCC report, however, did not contain proposals for the expansion of in-house worker training, the repatriation of Sri Lankan technical personnel from abroad, imports of technology in non-equity forms, the restructuring of public R&D institutes and the provision of testing and quality control services.

The result of decades of neglect shows up in poor comparative achievements in Sri Lanka in the area of technological effort as measured by R&D expenditures. In 1970, Sri Lanka devoted 0.17 per cent of its GNP to R&D activities. In contrast, South Korea spent more than double that on R&D. In 1987, South Korea's R&D expenditures were only about 0.5 per cent less than those of the most advanced developed countries. (See Annex Tables 4 and 5).

National R&D expenditures do not fully convey the extent of R&D effort in industry. A better indication is R&D expenditure in the productive sector and the proportion financed by productive establishments. By this indicator, the technology gap between Sri Lanka and the two East Asian NIEs widens even further. In the mid-1980s, Sri Lanka spent 0.02 per cent of GNP on R&D in the productive sector, while South Korea spent 1.5 per cent and Taiwan 0.7 per cent. (See Annex Table 5).

Thus, in every respect, Sri Lanka made negligible investments in R&D activities to increase the productivity of its human capital. Sri Lanka's R&D investments, which were about half of Korean levels in 1970, have remained static since then. The technology gap between the East Asian NIEs and Sri Lanka has widened over time.

This analysis shows that Sri Lanka was deficient in several areas of national technological capabilities by East Asian standards in the 1970s and 1980s. In the case of physical capital, Sri Lanka was characterised by low investment coefficients (the ratio of GDI to GDP) and inefficient employment of physical investments. In addition, Sri Lanka's human capital expenditures have declined in recent years and have led to a relatively shallow endowment of technical skill. Furthermore, Sri Lanka has made limited investments in local technological efforts.

Sri Lanka's pattern of manufactured export performance so far seems to be related to its investments in capabilities at the national level. Its particular base of physical investment, human skills and technological effort was suitable for light industrial activities but not suitable for industrial upgrading and diversification. Concerted state action will be needed to address the prevailing gaps in policy that have been identified above. What is added above all is a coherent institutional framework to support export development to enable Sri Lanka to fulfill its aspiration of becoming an NIE early in the 21st century.

V. Demand Side Policies

The need for demand side policies arises from the fact that in order for 'learning by doing' to be rapid and efficient, firms need to enjoy the dynamic external economies created by a growing market. This is an important dimension in which the experience of East Asia differs fundamentally from that of Sri Lanka in particular and South Asia generally. In each of the successful countries of East Asia, the home market has developed faster than in the countries of South Asia, due primarily to the differential rates of agricultural growth achieved by them. It is the fast growing home market that has enabled their import substitution industries to 'learn', to become efficient and thereby create the 'capability to export' subsequently. In the absence of this 'capability to export', a liberalized regime will still be able to give the economy an export orientation, but a mere change of orientation will not of itself result in a corresponding expansion of exports; this is the inherent weakness of the liberalization attempts so far in Sri Lanka that requires to be remedied by learning from East Asia.

To put bluntly, it is wrong to think that merely by liberalizing its economy, Sri Lanka can become a dynamic export-oriented NIE. A necessary condition for achieving dynamism in the export market is to begin with efficient import substitution, and a necessary condition for that is to ensure a rapidly expanding home market, or some surrogate for this.

Now, an expansion of the home market would come ordinarily from the rapid growth of agriculture, which still provides the bulk of national income in South Asia; but rapid agricultural expansion cannot be accomplished overnight and requires a wide range of supporting policies which take time to implement. In the special case of Sri Lanka, the domestic market is further limited by the prospect of reaching self sufficiency in rice, and by the limits to expansion in plantation crops. Regional co-operation therefore becomes indispensable for complementing Sri Lanka's limited domestic market by allowing import substituting industries to exploit a larger

and growing market outside the country - the regional market. This will require much freer trade between the countries of this region than is currently the case. Freer regional trade will also have the beneficial effect of ensuring competition between import substituting industries which are at a roughly similar level of technological sophistication, while sheltering them from the unequal competition with more advanced economies in the outside world.

In effect, what this analysis supports is the creation of an intermediate stage at the regional level between import substitution for the domestic market on the one hand and an export drive into the world market on the other. After an initial stage of pure domestic market-oriented import substitution. Sri Lankan industry will first be enabled to compete efficiently within the region before competing with the rest of the world. In a sense, the East Asian countries too went through this intermediate stage, but without recourse to a format framework of regional co-operation. Once they gained some experience in producing for the home market, they first exported to the other third world countries in somewhat ad hoc fashion before facing the stiffer competition involved in trying to enter the markets of the developed world. The development of a formal framework of regional co-operation can provide the intermediate stage that Sri Lanka needs to develop efficient import substitution on a systematic basis by providing a growing regional market that transcends national boundaries.

In this regard, two options appear to be available to Sri Lanka - a slow track and a fast track. Regional cooperation within the framework of SAARC involving all countries of the region is bound at the best of times to be a relatively slow process. The fast track option, on the other hand, would involve the establishment of a Reciprocal Preference Scheme, limited in the first instance to Sri Lanka and India, on the premise that the political climate for a mutually beneficial bilateral arrangement is capable of being generated relatively rapidly. If such a Reciprocal Preference Scheme were to be negotiated as a matter of urgency, it would constitute a powerful incentive for the attraction of foreign investment both to Sri Lanka and India based upon assured access to a joint market with an enormous potential for growth as the current economic reform process in India unfolds.

Conclusion

The principal conclusion of this paper is that the 'market-friendly' policies introduced with the economic reforms of 1977 cannot be relied upon exclusively to move Sri Lanka beyond its present phase of developing light industry into those areas of high technology industry, which have the capability of making significant inroads into international markets. It would appear necessary to more decisively in the direction of choosing the particular industrial sectors that are likely to succeed in world markets along the lines that have been pioneered by Japan and the East Asian NIEs, and to make the selective interventions in industrial policy that appear warranted by this strategy. A variety of 'supply side' gaps in the existing policy framework would need to be addressed. Particular importance attaches to developing the high level graduate engineering skills that the successful East Asian NIEs have been able to do. On the 'demand side', the establishment of a Free Trade Area, involving Sri Lanka and India in the first instance, would provide an intermediate basis for the industrial expansion needed to equip Sri Lanka to compete effectively in world markets, and evolve towards NIE status early in the 21st century.

Annexure

Table 1

Table 1: Education Expenditures and Educational Attainment of the Population in Selected Asian Countries, 1965 and 1988.

	South Korea	Taiwan	Sri Lanka
Education expand. per cent total expend.			
1972	15.8	14.5	13.0
1982	9.5	n.a	7.4
1989	18.5	17.4	10.7
per cent of age group enrolled in:			
Primary			
1965	101	97	93
1978	111	98	94
1988	104	99	107
Secondary			
1965	35	38	35
1978	74	68	52
1988	87	94	71
Tertiary			
1965	6	7	2
1978	12	11	1
1988	37	31	4
Tertiary students in GSE(b)			
No.(000's) mid-1980s	585	207	8
(per cent of urban pop.) mid 1980s	2.02	1.36	0.23
Tertiary students in engineering only			
No.(000's) mid-1980s	227.6	128.7	2.0
(per cent of urban pop.) mid-1980s	0.78	0.85	0.06
Students enrolled in vocational training			
No.(000's) mid-1980s	814.5	404.6	21.8
(per cent of pop. of working age) mid-1980s	3.06	3.24	0.23

→

Notes:

(a) 1985

(b) General Science and Engineering Fields.

Source: World Bank, World Development Report 1982, 1985, 1988 and 1990. Republic of China; Statistical Yearbook of the Republic of China 1978 and 1990, Taiwan; Lal(1991); CBC Review Economy (various): Dahlman and Brimble (1990).

Table 2

Indicators of Investments in Human Capital in Sri Lanka 1977-1978

Year	Education expenditure (per cent GNP) (a)	Combined primary and secondary enrollment ratio (b)	Students enrolled in vocational training No. (per cent of working age (d)		University science & engineering graduations (per cent of 20-24 age group (e)	University engineering graduations No (per cent 20-24 group) (e)	
1977	2.4	50.3	9,830	0.12	0.05	135	0.01
1980	2.7	62.9	14,492	0.17	0.05	213	0.01
1981	2.5	69.2	18,460	0.21	0.05	187	0.01
1982	2.7	68.3	19,723	0.22	0.06	205	0.01
1983	2.5	68.3	21,730	0.24	0.06	273	0.02
1984	2.3	69.2	21,690	0.24	0.07	340	0.02
1985	3.1	70.3	20,796	0.22	0.07	247	0.02
1986	2.2	71.1	21,771	0.23	0.06	286	0.02
1987	2.7	71.9	21,418	0.22	(c)	(c)	(c)
1988	2.9	72.9	20,673	0.21	(c)	(c)	(c)

Notes:

(a) Total current and capital expenditures on all levels of education in current prices.

(b) per cent of group aged 5-19 years enrolled in primary and secondary education.

(c) No final year exams in these years.

(d) Population of working age is defined as those in the 15-64 age group.

(e) Percentage of group aged 20-24 years receiving university level science and engineering degrees and engineering degrees only.

The discrepancies between the figures given here and similar figures given table 4.2 are due to differences in definition.

Source: University Grants Commission (1984). p.46; CBC review of the Economy (various).

Table 3:

Percentage Distribution of University Engineering Graduations in Sri Lanka, By Specialization, 1975-86

Field	1975/76	1980/81	1985/86
Civil	51.3	53.4	53.9
Electrical	20.9	7.5	14.2
Mechanical	22.7	20.5	15.9
Electronic	5.1	8.6	7.2
Production	0	2.2	4.6
Chemical	0	3.7	2.9
Material	0	3.0	1.2
Mining	0	1.1	0
Total	100	100	100

Source: Faculties of Engineering, Universities of Moratuwa and Peradeniya, Sri Lanka.

Table 4:

R&D Expenditure as a Percentage of GNP Selected Countries, 1970-1986

	1970	1975	1983	1984	1986
South Korea	0.39	0.42	1.05	1.26	1.80
Taiwan	n.a.	0.66(a)	0.94	0.99	1.04
Singapore	n.a.	0.20(a)	n.a.	0.60	0.90
Sri Lanka	0.17	0.18	0.20	0.19	n.a.
Japan	2.90	2.00	2.60	2.60	2.80
USA	2.60	2.20	2.60	2.60	2.70
West Germany	2.10	2.20	2.60	2.60	2.70

Notes:

(a) 1978

Sources: Dahlman and Sananikone (1990); Liyanage and De Silva (1987) and UNESCO (1989) for Sri Lanka.

Table 5:

R&D Efforts In Selected Asian Countries, Mid-1980s

Country	Year	R&D expend. (per cent of GNP)	R&D in productive sector (per cent of GNP)	R&D financed by productive sector (per cent of GNP)	Scien. & Eng.in R&D per million pop.
S. Korea	1987	2.3	1.5	1.9	1283
Taiwan	1986	1.1	0.7	0.6	1426
Singapore	1984	0.5	0.2	0.2	960
Sri Lanka	1984	0.2	0.02	0.03	168

Source: Lall (1991): UNESCO (1989) for Sri Lanka Sources for Annex Tables

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2. The World Bank, *World Development Report 1991: The Challenge of Development*, Oxford, 1991.
3. ibid. p.5.
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5. This paper draws extensively on research conducted under the auspices of the World Institute for Development Economics Research of the United Nations University (UNU/WIDER) on Sri Lanka's development strategies. See Lal Jaywardena, A. Massland and P.N.Radhakrishnan, *Stabilization and Adjustment Policies and Programmes; Sri Lanka*, UNU/WIDER Helsinki, 1987; Lal Jayawardena, 'What Can South Asia Learn from East Asia: The Case for a South Asian Free-Trade Area' (mimeo), Helsinki, November 1991; Ganeshan Wignaraja 'Trade and Industrialization Policies and Experience in Sri Lanka', a paper prepared for a UNU/WIDER Conference on 'Trade and Industrializaion Reconsidered' 24-27 November '1992, Paris, France, from which Annex Tables 1.5 of this paper have been extracted. See also Ajit Singh "'Close' vs. 'Strategic' Integration with the World Economy and the 'Market-Friendly Approach to Development' vs. an 'Industrial Policy': A Critique of the World Development Report 1991 and an Alternative Policy Perspective", a paper prepared for a Symposium jointly organized by UNU/WIDER, the UNCTAD G24 Project, and The World Bank scheduled for 6 February 1993, World Bank, Washington, D.C.
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