

Trade and Industrialisation Revisited

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I. LSS AND SUBSEQUENT EVENTS

In 1970 the book *Industry and Trade in Some Developing Countries* by myself, Tibor Scitovsky and Maurice Scott was published (referred to henceforth as LSS). It exposed the bad effects of the import substitution policies which had been the prevailing mode of industrialisation in developing countries for a long time. It advocated the elimination of quotas and a uniform tariff of 10–15 percent. The exchange rate should be adjusted to ensure that exports were competitive. If any industry was, exceptionally, to receive more promotion than that implied by the low tariff, this should be by some form of subsidisation which should not exceed another 10–15 percent of domestic value-added. LSS is, I believe, still the most quoted work on the subject.¹ It was quite closely related in theory to the methods of cost-benefit analysis proposed by Little and Mirrlees (1974) (referred to henceforth as LM).

While the influence of LSS on the development literature was extensive, neither it nor LM would seem to have had any influence whatever on the policies of most developing countries for a decade. This is, perhaps, the normal fate of policy-oriented books. Korea and Taiwan continued with the export policies they had already initiated. Admittedly these policies eliminated the bias against exports inherent in protective policies, a bias that LSS had castigated. But Korea, and to a lesser extent Taiwan, also reverted in the 1970s to the selective promotion of some mainly capital intensive industries (referred to as Heavy and Chemical Industries (HCI) in Korea) producing tradables. In Korea, towards the end of the 1970s, it is possible that LSS played some part in the modification of the HCI drive. But only in Chile was the policy of a low uniform tariff, as advocated by LSS, wholly adopted. Chile has stuck to this policy.

Elsewhere in the developing world the new availability of international finance at very low interest rates during the 1970s resulted in public sector investment booms. Fifteen out of 18 countries studied in Little *et al.* (1993), experienced

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¹It was followed by Bhagwati (1978) and Krueger (1987), works which further explored the relationship of trade regimes and development, and used the same comparative country research as LSS.

these booms. Some of them resulted in almost incredible rises over periods of 2–4 years in the ratio of public investment to GDP. In Morocco and Nigeria, the ratio more than trebled. It doubled (approximately) in Côte d'Ivoire, Mexico, Pakistan, Thailand, and Sri Lanka.

Poor choice of investments, with little or no attention paid to their ability to earn or save the foreign exchange needed to service the loans was a major contributory cause of the debt crisis that ensued at the beginning of the 1980s. More generally, inward looking policies combined with heavy foreign borrowing was a recipe for disaster. Eight of the 18 countries studied *both* experienced severe recessions in the early 1980s *and* rescheduled their debt.

I shall, later in this lecture, be paying particular attention to East Asia. None of the three East Asian countries studied in Little *et al.* (1993)—Korea, Thailand and Indonesia—rescheduled. They remained credit-worthy. Korea and Indonesia had brief recessions in 1980 and 1982 respectively, but after a few years recovered famously. All three showed flexibility of macroeconomic policies. The heavy industry investment booms were cut back, Korea in particular reverting to much less selective investment policies. All devalued, ensuring competitive real exchange rates, and liberalised imports. Their recoveries were based on very rapidly expanding exports of manufactures—over 20 percent pa—from 1982–1989 in dollar terms. These countries certainly moved in the 1980s towards LSS policies.

The same is widely true elsewhere, the main exceptions being the countries of the French Franc zone which eschew flexible exchange rates.² Most developing countries have adopted flexible exchange rates, and have reduced import quotas and tariffs. Most also go some way towards offsetting the anti-export bias implicit in their remaining protection. Even India, the arch-protectionist, has been making major reforms since 1991. Thus during the 1980s there has been a strong movement towards LSS policies. Only Chile is exactly there, and has been for a decade or more. But Korea, Taiwan and Singapore are virtually there, after a decade of slowly reducing the remaining protection of their domestic markets. Hong Kong, of course, has always been a free-trader.

This is not to say that the policy-makers who may have absorbed the logic of LSS when they were 20–25 years old are now in power and putting into effect what they then learned. More probably the recasting of economic policies in favour of exports, and higher trading, has mainly occurred as a result of the debt crisis. Countries were more or less forced to improve the current account of their balance of payments. This could not be done by reducing imports, without creating recession. Only by increasing exports could they avoid a recession, or climb out of one. Every cloud has a silver lining.

²But the CFA franc was devalued by 50 percent in December 1993.

After this highly condensed account of the course of economic development since 1970, I turn to another question. Has anything occurred either in the realm of ideas, or in the experience of development, in the past twenty-five years to make one want to modify the guidelines of LSS (or LM), and hence to question the wisdom of the movement towards liberal policies in the 1980s? This is no empty question, for there are some strident critics of what they term the neo-classical model (which I am supposed to embrace with blind fervour), who call for 'a new paradigm'.

II. NEW IDEAS

Perhaps the most important advance since 1970 in the realm of ideas is the so-called New Growth Theory, associated in the USA mainly with the names of Romer and Lucas. The distinguishing feature of the new growth theory is that technological progress is endogenised, and not left as a residual (or error) in growth equations. [As yet this theory has hardly been applied to developing countries, though there is a recent article, in which Lucas' (1993) is mainly concerned to modify growth theory so as to permit episodes of *miraculous* growth such as he believes to have occurred in Korea. Since this article is not closely relevant to my main theme I shall pass it by (though his conclusions are sympathetic to uninhibited trading.) But I shall be using an earlier version of the New Growth Theory, attributable to Scott (1989), later in this lecture.

The notion of asymmetrical information, attributed to J. Stiglitz, has been of importance. It has become clear that the concept of perfect competition cannot be applied to most credit markets. Lenders will often ration credit rather than let the interest rate rise to clear the market, because of the possibility that high interest rates result in adverse selection. Under certain circumstances the peculiarities of credit markets may make it advisable to cap interest rates.³ This argument has been used by some writers to justify credit allocation by government, and indeed to attribute miraculous growth in Korea and Taiwan partly to such allocation. But it does not follow that it is better for government to direct the rationing of credit by commercial banks rather than to allow them and other lenders to be guided by expected profitability in arranging their portfolios. This, however, seems to be presumed by those authors who see an alliance of government, the banks, and very large companies (the *chaebol* in Korea) as analogous to intra-firm planning in large companies, basing themselves on recent industrial organisation literature. There is no doubt that in Korea credit allocation was influenced by such tripartite consultation, but those who stress this feature of the economy calling it 'government led internal organisation' (GLIO) offer no evidence that the results were good, let alone better than what

³See McKinnon (1990).

the banks would have done in pursuit of profits.⁴ GLIO theory cannot be applied to Taiwan, for there are no very large private companies in Taiwan and the government had no policy of close consultation with private firms, or credit allocation (nor, of course, can it be applied to Hong Kong).

Next we have to consider the 'new trade theory'. It points out that even a small country which cannot generally affect the world price of commodities, may nevertheless by imposing a tariff be able to secure a reduction in the cif price when the foreign supplier is a monopolist. (It is perhaps contestable as to whether there is anything new in this argument.) Paul Krugman, one of the main progenitors of the new trade theory, after admitting the difficulties of realising any advantage from this theoretical possibility has written 'Imagine a small country with a highly competent and honest administration. Would it be unreasonable for such a country to centralise its purchases of a few commodities when we know that large buyers are able to negotiate substantial price discounts?'⁵ India, which in terms of economic theory is a small country, did just that, though for more than a few commodities. I know that a former chairman of the Indian State Trading Corporation, a friend of mine, would regard any claim that India thereby got its imports more cheaply as laughable.

The second main line of argument of the new trade theorists is known as 'strategic trade policy'. It is held that government by some subsidisation may play a role in securing oligopolistic or monopolistic rents for their country that might otherwise accrue to other countries. It can apply only where a very few firms compete for the world market. The obvious example is large passenger aircraft. Nuclear reactors may be another. The UK has practised strategic trade policy in these two fields since 1945, some forty years before the idea entered the trade-theoretical literature. In civil aircraft the UK tried many times to jump ahead of the USA, and earn the supposed rents of being first or early in the field. This policy started with the Princess Flying Boat, the idea being that one could only reach across some long distances by landing on water (on Lake Victoria or Nyasa in the case of flights from Europe to South Africa). Then came the first jet-liner, the ill-fated Comet. Then came the VC10, a fine aircraft hopelessly eclipsed by the far more economical Boeing 707. Then the Concorde, another beautiful folly whose development was hugely subsidised by the poor British taxpayer. It was the same with nuclear energy. The UK was early in the field spending huge sums on the

⁴See Yoon and Hellman (1993). I have elsewhere questioned whether the inevitable departure from perfect competition that is to be found in most credit markets should be called market failure. It should perhaps be noted that the idea of comparing economic management in Korea to that of a large corporation is not new. To quote 'The management of the Korean economy resembles the operation of a business corporation with the leaders of the Government and of private business sitting in the management board and jointly deciding the strategic choices, and the execution of these choices' [Datta-Chaudhuri (1981)]. For a critique of credit allocation policy in Korea see Dailami and Kim (1991).

⁵Krugman (1989).

wrong technology expecting to monopolise the world market:⁶ I do not know that we have exported a single nuclear power plant. Beware strategic trade policy!

III. INFANT INDUSTRY REVIVED

The strategic trade idea is related to the infant industry argument. Economies of scale or learning by doing are closely involved: otherwise the premise of only a few suppliers for the world market would not be realised. It is essentially the infant industry argument that is invoked by recent 'revisionists', the most influential of whom seem to be [Amsden (1989) and Wade (1990)]. They claim that government intervention especially in the form of the selective protection or other promotion of industries was an essential element in the success of Korea and Taiwan, a fact that was wilfully ignored by such neo-classical writers as myself. The infant industry argument is not necessarily linked to exporting. But these and other authors who favour government intervention in industrial development feel the need to dissociate themselves from the inward-looking protection policies pursued by almost all developing country governments until recently. They therefore stress the need to achieve *international competitiveness* (presumably without subsidies). Since they also stress 'heavy', increasing-return, and high technology industries where learning by doing is important, it seems that their arguments are closely akin to those of strategic trade policy. Indeed one of the industries in which Korea's achievement is most praised is ship-building, and Korea and Japan are now much the largest suppliers of big ships to the international market. So are Korea's ships great rent-earners, or are they more like British aircraft? I shall be suggesting the latter.

Although the subject of transfer of technology does not involve any new theoretical ideas, and has always been part of the development literature, I should note that it has attracted a lot of empirical work since 1970. This too is closely related to the infant industry argument. Westphal for instance has argued that developing countries starting up an industry that is new for them, may lag far behind in total factor productivity, even though the 'best practice' technology can be imported. It may require heavy protection or subsidisation for as much as a decade before 'international competitiveness' is achieved. The cost of this may be so great that a country should not think in terms of thus protecting or promoting more than a very few lines of activity [Westphal (1982), p. 267].

The presumed growth in productivity is a necessary condition for public promotion as an infant industry, but it is not sufficient. It also has to be shown that eventually the returns will be high enough to offset the decade of losses, and that the private entrepreneur for one reason or another cannot or will not take advantage of

⁶British losses incurred in developing Concorde and the Advanced Gas-Cooled Reactor have been estimated in Henderson (1977).

this. Westphal accepts this and recognises that the proper test is the social rate of return. Elsewhere he (with Howard Pack) has written of Korea "Our knowledge of the evidence leads us to conclude that the average social rate of return on investments in selectively promoted infant industries has been relatively high if the most serious mistakes made in pursuit of objectives unrelated to market performance are omitted from the valuation".⁷ Presumably the main unrelated objective was increased self-reliance in the manufacture of armaments. One does not know what investments he would omit on the grounds of being related to non-market objectives. Nor do the authors tell us what *ex-post* social cost benefit analyses of promoted and other investments constitute the evidence referred to. I shall later give some evidence on social returns, and some guesses.

The revisionists give no evidence of high social returns. They seem to think that it is enough to show (a) that there was a good deal of specific intervention by government in Korea and Taiwan in favour of particular industries, and (b) that some of these promoted industries survive, and export. They also, like the technology buffs, point to the rapid acquisition of technological expertise in these countries, attributing at least some of this to government institutions. This seems to support the idea of infants growing up. Apart from this, and appeals to market imperfections, the revisionists, especially Wade, try to buttress their case by entirely unjustified and easily refutable attacks on some 'neo-classical' writers for falsifying the development story of Korea and Taiwan by ignoring protection and other forms of government intervention.⁸

IV. KOREA AND TAIWAN—THE ISSUES

The reader cannot but have noticed the close focus on Korea, and to a lesser extent Taiwan, on the part of those who want to prove the value of industrial policy, [that is of having government choose industries to develop, while implementing this

⁷Pack and Westphal (1986).

⁸I give in refutation three quotations from Little (1979). The first two concern Taiwan, and the third Korea.

"The effect of the new policies [late 1950s and early 1960s] was not to create *laissez faire* conditions for the whole of industry, let alone the whole economy. They created a kind of dual economy in which exports, but only exports, could be manufactured under virtually free trade conditions—a policy soon copied by Korea."

"Although import controls were being reduced [1963–1973] there was no reform of the tariff structure, which remained, potentially, highly and erratically protective."

"The degree of planning in Korea is probably greater than in Taiwan. There the Economic Planning Board controls the budget, unlike the Economic Planning Council in Taiwan. Taiwan has no equivalent to the Korean Development Institute, a parastatal body concerned with economic research and planning. There is the same promotion of capital-intensive intermediate industry. Import controls have probably been more extensive, still persist, and are used selectively to promote favoured domestic industries such as recently the machine tool industry..."

Other quotations from such authors as M. FG. Scott and G. Ranis, could be adduced.

policy either by creating the industries in the public sector or by using incentives or guarantees to secure their development in the private sector]. The reasons for this obsession with Korea are clear. The Korean government directed the process of industrialisation to a greater extent than any of the other fast-growing Far Eastern economies, though her rate of growth of GNP per head has been a little lower in the period 1960–85 than those of Hong Kong, Singapore and Taiwan.⁹ However, many other countries directed the process of industrialisation through protection and in other ways, to a greater extent than Korea: indeed until recently this is arguably true of almost all developing countries, perhaps most especially India; and it is, of course, true of all the ex-Communist countries. It is now hardly controversial that these policies retarded growth with no countervailing advantage in terms of equity, independence, or any other objective. So logic seems to suggest that the proper question to ask is why Korea succeeded with policies that failed elsewhere.

Some commentators do indeed claim to give reasons why industrial policy in the form of protection and subsidisation was beneficial in Korea (and Taiwan) but not elsewhere. They all perceive in Korea some facet of their own speciality—be it credit, trade, industrial organisation, or technology—that suggests market failure and a role for government leadership. They do not question the proposition that industrial policy was successful. To quote [Wade (1990), pp. 305–6], ‘...the balance of presumption must be that government industrial policies, including sectoral ones, helped more than hindered. To argue otherwise is to suppose that economic performance would have been still more exceptional with less intervention *which is simply less plausible than the converse*’. Since the less interventionist Hong Kong, Singapore, and Taiwan grew faster than Korea, it is unclear why Wade thinks it simply less plausible that less intervention would have been better, given also the widespread failure of government industrial policies elsewhere. I find it simply more plausible that Korea grew fast despite its industrial policies, than because of them. I shall be giving some positive reasons for this view later.

Thus, it is claimed that those who have ascribed Korea’s or Taiwan’s rapid growth largely to the reform around 1960 which undeniably led to the rapid development of labour-intensive low-technology industry and exports, a development right in line with the Heckscher-Ohlin explanation of comparative advantage (a scarcity of capital and abundance of labour) wore blinkers, and neglected the role of government in creating comparative advantage.

Very few economists now contest the view that the reforms which resulted in the removal of the bias against exports were of great importance, and that the rapid growth in exports was in large measure the cause of the rapid growth in output. What is at issue is partly the extent to which some export industries were more

⁹See World Bank (1993). Figure 2.

favoured than others, whether by protection of the home market, or by subsidies, or by superior export incentives, but mainly about whether such discrimination between sectors was beneficial for growth or welfare.

[On the first point, the revisionists suggest that the government's purposeful distortion of the market has been large and perhaps not even much less than in many other developing countries. The evidence seems to be against this view at least for the early 1970s. For 1973, [Lal and Rajapatinaha, (1987)] calculated accounting ratios (essentially ratios of import or export prices to local prices) for 56 traded commodities in Korea. The mean ratio was .883 with a standard deviation of .178. For India a similar calculation gave a figure of .675 with a standard deviation of .294. This indicates both higher protection in India, and greater variability of protection. Balassa's figures for effective protection show relatively low rates for both Korea and Taiwan [Balassa (1982)]. Howard Pack reviewing the evidence in the case of both Korea and Taiwan refers to 'the relatively low variance in protection across sectors [Pack (1992a), p. 296]. In the case of Taiwan he writes "Thus old and new sectors grew because of relatively neutral incentive policies, new ones also benefiting from some promotional measures" [Pack (1992), p. 83], and again "Anecdotal evidence collected by Wade (1990) and often cited in journalistic accounts suggest that in some selected sectors effective rates of protection have continued to be very high up to the present time. The absence of systematic evidence precludes analysing the possible anomaly of rapid and efficient growth in sectors that have continued to be protected" [Pack (1992), p. 84]. Presumably 'up to the present time' must mean, say, 1987 or 1988 since Wade's book was published in 1990. One might add that in very recent years, that is in the 1990s, it seems that there is very little protection left in either country.]

The precise degree to which some industrial sectors were protected or subsidised relative to others does not perhaps matter very much. No one doubts that such discrimination existed in these two countries. That being the case one can search for evidence as to whether, first, the relatively highly promoted sectors expanded faster than others, and secondly, if so, whether such expansion was beneficial for the growth of GNP per head. *The East Asian Miracle* (1993) (henceforth *The Miracle* for short) seeks to answer the above two questions, and hence to establish whether industrial policy made an important contribution, or indeed any contribution, to the supposedly miraculous growth of the high performing Asian economies (HPAEs) as the *Miracle* terms them.

V. IS THERE A MIRACLE?

Before we examine the *Miracle's* argument concerning the possible contribution of industrial policy to miraculous growth, we logically need to establish

whether there was anything miraculous about East Asian growth.

The HPAEs have grown exceptionally fast, from about 1958–1973 in the case of Japan, and from about 1965–1989 or later in the case of the other seven. If, however, this high growth can be attributed to very high ratios of investment to GDP and a very rapid growth in the quality and quantity of the labour input, that is to conventional inputs, then there is nothing very mysterious. There would be no need to posit superior industrial policy. What would need to be explained is how very high levels of investment, education, and training, could be achieved. However, if this is *not* the case, then the enquiry is opened up to more difficult and elusive factors such as what governs the efficiency of investment, and the allocation and use of resources more generally. The *Miracle* does have a good deal to say about levels of savings and investment, and education and training, but it also seeks to establish that these conventional inputs do not explain everything. This it does in two ways.

First, it does a 113 country cross-economy regression analysis of real per capita income growth (1960–85) on the following five variables (1) relative GDP to that of the US in 1960—this is a ‘*catch-up*’ variable introduced on the assumption that the poorest countries have the greatest opportunities to grow, by copying the methods and techniques used, or once used, by the richer countries, (2) primary school enrolment 1960, (3) secondary school enrolment 1960, (4) growth of population, (5) the average investment ratio to GDP.¹⁰ The resulting coefficients are then applied to the same variables for the HPAEs. It is found that, except for Hong Kong (44 percent) between 60 percent and 87 percent of growth is explained. This compares with a R^2 of .43 for the whole sample. On this basis it could be said (but is not) that there is *relatively* little that is not explained by the growth of capital, by labour inputs, and by a rise in the quality of the labour force (the educational variables are, presumably, meant to be proxies for the latter).

[However, it is argued that little of the *difference* of growth between the HPAEs and the countries of Latin America (17 percent) or Africa South of the Sahara (36 percent) is explained by differences in the variables. This suggests (though it is not said—after all the authors want to explain the Far Eastern ‘miracle’) that what most needs explanation is the relatively poor performance of Latin America, and the extremely poor performance of Africa South of the Sahara (where a good many countries had *negative* growth despite positive investment and often quite high expenditure on education).]

However I do not believe one can put much trust in this regression. For many of the 113 countries the figures for *all* of the variables must be extremely unreliable.

¹⁰See Table 1.8 of the *Miracle*. The variables are not well defined. The table reads ‘growth of population’ and the text ‘growth of economically active population’. Presumably the latter is intended as a crude measure of labour input. It is not stated whether the investment variable is gross or net.

Nor do they all measure what is wanted. Thus 'growth of population', even if it means 'growth of the economically active population' is a poor measure of actual labour input, since average hours worked per annum can change markedly. More important perhaps, primary and secondary school enrolments in 1960 can hardly be considered to indicate relative improvements in the quality of the labour force from 1960–85 which is what is wanted. Although primary school enrolment turned out to be highly significant it is not clear what this is telling us, especially as recorded primary school enrolments may bear little relation to the numbers that complete primary schooling or even a year of it. For instance the 90 percent primary school enrolment recorded for India in World Bank data is a gross exaggeration of the quantity and quality of primary schooling. It is not surprising that the fit of the equation is poor ($R^2 = .35$). Given these weaknesses I am not sure that any significance should be attached to the different extents to which individual country performances differ from those predicted by this regression.

Secondly, there is an analysis of total factor productivity (TFP); or, in other words, of the residual left after 'explaining' growth by the stock of capital, the stock of 'educational attainment', and the growth of the labour force:¹¹ the coefficients being differences in the stock of capital, educational attainment (human capital), and labour use which have been calculated from a Cobb Douglas cross-country (87 countries) production function. The coefficient for capital was very low for the whole sample. Since this result was strongly affected by the thirteen developing countries with negative growth, the production function was re-estimated on the basis of the high income countries only.

The coefficients thus calculated were then applied to the eight HPAEs. The results are shown in Table 1.

M. FG. Scott has cogently criticised the use of the conventional capital stock concept in such calculations of TFP, and the same remarks as made earlier about the regression apply to the measurement of labour inputs and to the general reliability and comparability of the figures for 87 countries. I cannot comment on the measure of 'educational attainment' (which presumably stands for the human capital stock) not having seen the source given. The large difference between the two columns also suggests that these estimates of TFP are worth little. With the full sample the coefficients of the three explanatory variables were (capital) 0.18, (educational attainment) 0.15 and (labour input) 0.67. With the high income sample they were 0.40, 0.27 and 0.33. Since the inclusion in the full sample of countries with positive investment and negative growth makes no sense it has to be presumed that the

¹¹The reference for the capital stock is Nehru, Vikram and Ashok Dharehswan (1993) *A New Database on Physical Capital Stock: Source, Methodology and Results*. World Bank, International Economics Department, and for 'educational attainment', Barro, Robert J., and Jong-Wha Lee (1993), "International Comparisons of Educational Attainment", World Bank.

Table 1

Total Factor Productivity Growth from The Asian Miracle

Countries	Calculated from the Full Sample (87 Economies)	Calculated from the High Income Sample
Hong Kong	3.6	2.4
Japan	3.5	1.4
Taiwan	3.8	1.3
Thailand	2.5	0.5
Korea	3.1	0.2
Singapore	1.2	-3.0
Malaysia	1.1	-1.3
Indonesia	1.3	-0.8

second set of estimates, however bad, are more indicative of 'normal' elasticities of output, and therefore that the second column of figures for TFP growth are to be preferred to the first column. It should be noted that the figure for Korea is 0.2 percent. The unweighted average is 0.1 percent. It therefore seems misleading to state 'The final outstanding characteristics of the HPAEs is their rapid productivity growth' [Miracle (1993), p. 46]. This could be justified only by taking the 2.5 percent mean of the first column. I am not sure that TFP means anything more positive than simply 'error of estimate', but I am quite sure that no significance should be attached to TFP figures derived from a cross-country Cobb Douglas production function with observations of ill-measured variables taken from countries ranging from the USA to the least developed countries with the most unreliable statistics.

The upshot is that I am not sure whether there has been a miracle (in the sense explained). We know of course that there are huge differences in growth among developing countries that cannot be explained by differences in investment—the extreme examples are those with negative growth and positive investment. But it is not clear that returns to investment (or education) have been exceptionally high in the HPAEs *relative to the richer countries*, which did not, of course, suffer the debt crisis and deep recessions that plagued many developing countries (but none of the HPAEs) in the 1980s.

I shall return to the estimation of investment returns after describing the *Miracle's* attempt to assess the value of industrial policy.

IV. THE INDUSTRIAL POLICY FINDINGS OF THE *MIRACLE*

Despite the above criticism we now accept for the sake of argument the claims that growth was miraculous. It therefore becomes a possible hypothesis that the miracle was in part due to the industrial policies pursued. First it is asked whether the policies were effective.

[Did promoted industries grow faster than might have been expected? Consider the pattern of development in Japan, Hong Kong, Korea and Singapore as compared with 'normal' patterns based on GDP per head and size (in terms of population).¹² Two sectors (out of nine), textiles and clothing, and metal products and machinery, stand out as super-normal in their *shares* of GDP, in all four. The super-normality of the share of textiles and clothing increased from around 1970 (1963 in the case of Japan) to around 1990 in all four countries, while that of metals and machinery rose only in the case of Korea. The typically 'heavy' sectors, chemicals, non-metallic minerals and base metals, were at or below normal at both dates in all four countries, the only exception being basic metals in Korea in 1988.¹³

In the period considered textiles and clothing were not specially promoted. Korea at least was trying to reduce its dependence on exports of textiles and clothing. However, some elements in the sector 'metal products and machinery' were promoted. There is some ambiguity in terms of capital intensity. Some parts of textiles (man-made fibres) are capital intensive, and some parts of metal products and machinery are very labour intensive (e.g., the assembly of calculators). For this reason the *Miracle* probed a little deeper.]¹⁴

Tests were carried out in the case of Japan and the four 'tigers' to discover whether sectoral growth (at the two-digit ISIC level) seemed to accord with simple Heckscher-Ohlin expectations. Did the share of the labour-intensive sectors rise as exports exploded? If industrial structure is determined primarily by market forces, low wages and low capital intensity at the beginning of the period of active industrial policy will, despite intervention, predict the pattern of growth. If industrial policy to promote capital- and knowledge-intensive sectors were successful then high wages (a measure of human capital intensity) and high capital intensity at the end of the promotion period should 'predict' changes in industrial structure. The results were inconclusive for various reasons in the case of Japan, Hong Kong, and Singapore. In Korea, the most interventionist country, the sectors that grew most (in the period 1968-88) were the more labour intensive low wage sectors. Government

¹²The norms are taken from Syrquin and Chenery (1989).

¹³They were also mostly below normal in Indonesia, Malaysia and Thailand, the exceptions being chemicals in Singapore and non-metallic minerals in Thailand.

¹⁴Possibly also because the Syrquin and Chenery norms are themselves affected by industrial policies.

intervention in favour of the capital and skill-intensive sectors was evidently not strong enough to prevent this. In the words of *The Miracle* (p. 333), 'the quantitative importance of government intervention to alter the structure of production is not confirmed at the sectoral level'.

Nevertheless it does not follow that industrial policy had no effects. [First, the comparison with Syrquin-Chenery norms does not show this, because the 'norms' are not patterns produced by *laissez faire*. Almost every developing country had an industrial policy of import-substitution.] Secondly, common sense tells one that the timing, scale and pattern of investment in heavy industry—especially cars, shipbuilding, and petrochemicals, was markedly different from what would have occurred under *laissez faire* (or under some non-selective industrial promotion).

We can therefore usefully ask, as the *Miracle* does, whether the promoted sectors had greater productivity growth than others, as measured by total factor productivity (TFP). Sectoral growth rates of TFP are available only for Japan and Korea. In the case of Korea 'there is no simple correlation between TFP and promoted sectors', (*Miracle*, p. 335), and 'The major reason for Korea's manufacturing success lay in high individual values [of TFP growth] for most sectors in most periods' (*Miracle*, p. 336). In the case of both Korea and Japan, the metal products and machinery sector (ISIC 38) grew abnormally fast, and exhibited relatively high productivity growth. Since some branches of this sector were promoted, it was calculated how much less overall manufacturing TFP growth would have been if ISIC 38 growth had been normal. In both countries there would have been a small reduction in TFP growth: since, however, only some branches of this sector were promoted one cannot be sure that this small contribution to TFP growth (and very small contribution to VA growth) was the result of promotion. Promotion aside, Dollar and Sokoloff (1990) show that TFP growth in the most capital intensive sectors was less than half that in the most labour-intensive sectors. Electrical goods; rubber, leather and plastic products; furniture; and clothing and footwear all show above average TFP growth.

The degree of correspondence of domestic and international prices¹⁵ is highly significant for the growth of TFP in cross-country regressions (51 observations) (see *Miracle* Table A6.3). This was taken as a measure of openness. It could also be taken as a measure of the efficiency of the use of resources. Neoclassical authors and common sense would, of course, claim it was both. The proportion of manufactured exports in total exports was also significant.¹⁶

¹⁵As measured by Dollar (1990).

¹⁶I would have thought that the proportion of manufacturing output exported could have been a more relevant determinant of TFP growth. In 1973 Taiwan, Korea and Singapore exported 40-50 percent of manufacturing output (sales/value-added). In Argentina, Brazil and Colombia, this share was 3-8 percent.

On the above bases what does *The Miracle* conclude concerning selective intervention? "The most successful selective intervention in the HPAEs—the commitment to manufactured exports—was also the most general" (*Miracle*, p. 325). Eliminating the double-talk this should read "The least selective intervention in the HPAEs—the commitment to manufactured exports—was the most successful.

The above analysis of productivity which showed that the capital intensive sectors that have been proclaimed as infant industries exhibit below-average productivity growth are of course based on TFP estimates. We have earlier cast considerable doubt on TFP analysis. There is, however, a big difference between the country and the sectoral results. The estimates that purported to show that growth was miraculous in the HPAEs were based on inter-country production functions with all the problems of unreliable and incomparable statistics. The sectoral estimates of TFP for Korea are likely to be based on more reliable statistics. Furthermore conceptual and measurement errors in the explanatory variables are more likely to cause absolute errors in the TFP estimates than to affect the sectoral relativity of such estimates, and it is the latter which enter the argument.

VII. ESTIMATES OF INVESTMENT RETURNS

We saw earlier that what matters for growth and welfare are the social returns to investment. This is recognised by the *Miracle* and other authors cited, e.g. Westphal and Pack (1986). It is therefore strange that the *Miracle* tries to assess whether East Asian growth was miraculous, and the value of industrial policy, by the roundabout method of estimating total factor productivity growth. No attempt was made to estimate returns, and such estimates as exist were ignored.

I have calculated the returns to gross investment for the non-residential 'business' sector of Korea (i.e., excluding housing and government) for the period 1963–82 and some sub-periods from figures estimated by M. FG. Scott.¹⁷

The formula also due to Scott is

$$r = \frac{G_y - (G_{LA} \times \frac{WL}{Y})}{I/Y}$$

where r is the exponential rate of return, G_y is the fitted exponential growth rate of output, G_{LA} is the fitted exponential growth rate of the quality-adjusted labour input, WL/Y is the share of wages and I/Y is the gross investment ratio. It should be noted that *all* growth that is not ascribed to an increase in quality-adjusted labour is

¹⁷Mr Scott's figures are in turn based, on Kim and Park (1985). The raw figures are available on request.

ascribed to investment. The estimates for various periods are given in Table 2.

Table 2

Calculation of Returns to Investment in Korea

Years	G_Y	G_{LA}	WL/Y	I/Y	r (Exponential)	r (% pa)
1963–82	.0877	.0651	.523	.235	.228	25.6
1963–73	.0934	.0660	.545	.213	.270	31.1
1974–82	.0604	.0551	.496	.263	.126	13.4
1974–79	.0838	.0758	.503	.271	.168	18.3

In Table 3 the figure of 31.0 for Korea in the period 1963–73 is compared with estimates for Japan, UK, and USA, calculated from Scott (1989), Table 7.1, col 2, using exactly the same methodology for the same ‘non-residential business’ sector, for similar periods ending in 1973.

Table 3

Comparative Estimates for Returns to Investment—Percent per Annum

Korea	1963–73	31.1
Japan	1961–73	23.6
UK	1964–73	20.4
USA	1948–73	16.9

The order of Japan and the UK relative to the USA is as expected given a ‘catch up’ factor. For the same reason one might expect Korea to head the list provided that economic policies or some special features of underdevelopment did not dampen the process of catching up. However the Korean figure of 31.1 is certainly notable.¹⁸ But this notable performance applies *only* to the period 1963–73.

¹⁸Mr Scott has estimated a cross-country regression using the investment ratio, growth of the quality adjusted labour input, and as a catch-up variable (cu) the ratio of quality adjusted labour productivity to that of the USA, [see Scott (1989), p. 294, Equation (10.3)]. The USA (1948–73) and Japan (1961–73) lie almost exactly on the regression line, and the UK (1964–73) slightly above it [See *ibid* Table 10.2]. It is interesting to see where Korea lies. On the assumption that cu was the same for Korea in 1963–73 as for Japan in 1952–61, the figures already given for Korea show that Korea’s actual growth was nearly 1 percent below that indicated by the regression line. So Korea’s growth while noteworthy does not show any exceptional efficiency in the use of capital and labour.

The figure for the 1974–82 period of 13.4 constitutes a grave lapse into mediocrity. The investment ratio rose and the growth of output slackened. This is the period of the HCI drive. Towards the end of the period, in 1980, there was a recession (output fell 1.3 percent) largely caused by a fall in agricultural output, though probably to some extent the result of fiscal action to cool the overheating of the economy in 1979 that resulted from the HCI drive. The recovery of output in 1982 and 1983 was sluggish by Korean standards. Thus the low investment returns in this period were partly caused by macroeconomic disturbance, and are not therefore a fair measure of what the return would otherwise have been. For this reason we have estimated the returns in the period 1974–79 when the economy was booming. The returns at 18.3 percent pa are far below those of the decade 1963–73. It is possible that some fall in the rate of return was inevitable. Unfortunately I do not have figures for later years which would show whether or not high returns reappeared after the emphasis on heavy and chemical industries, and more generally on industrial policy, was reduced. Nevertheless the figures given above are bad news for heavy industry fundamentalists, and those who stress the importance and value of the government's industrial policies.

The high returns to investment in the period 1963–73 did not come as a surprise to me. In 1975 I led a small team which investigated on behalf of the Asian Development Bank the performance of 28 randomly selected medium-size firms which had received loans from the Medium Industry Bank (MIB). Since the MIB was government owned it might be thought that our sample firms were selectively promoted. This was not so. The government's guidelines to the MIB gave priorities which covered every kind of industry except non-traded luxury consumer goods. (The MIB agreed that confectionery was probably the only exclusion). This, incidentally, suggests that the extent to which the government directed finance (because it owed the banking system) is sometimes exaggerated by the revisionists. The average employment size of the sample was about 200 in 1969, rising to about 500 in 1974 (a 20 percent pa rate of increase!). About one-third were textiles or textile-related, another third miscellaneous metal products (zippers, cutlery, crown caps, bicycle parts etc.) and the rest very miscellaneous (special chemicals, paint, printing, electronic parts, toys). The unweighted average export ratio of sales was 44 percent. The unweighted average of the constant price rates of return of these firms over the period 1969–74 was calculated (earlier investments back to 1963 were recorded—very few had an earlier investment than that) to be 22 percent. The average shadow or social rate of return (using simplified LM procedures) was a little higher, 27 percent. The figure of 22 percent compares with that of 31 percent given above for investment in the business sector, over roughly the same period.

It was largely from the experience of conducting this survey, involving visits to the firms ranging from 1.5 to 3.5 hours, that my own impression of such matters

as the acquisition of technology and skills on the part of the labour force, of the intensity of work, and of marketing were formed. I also visited a number of high exporting medium size labour-intensive firms in Taiwan in 1976. I have recorded my conclusion on such matters in Little (1979). Two points are mainly relevant in the present context. First the technology was simple, non-proprietary and easily acquired.¹⁹ The suppliers of the standard machines which were quite often second hand, would teach the purchasers how best to lay them out and use them. Secondly, both Korean and Taiwan workers were very quick to learn. Employees would usually reach the expected high level of productivity within a few weeks. This would probably not have been the case if the standards of primary education had not been high.

Such little evidence as there is does not suggest high financial or social returns for those industries which believers in Korea's industrial policies mostly cite when they write about creating comparative advantage. These include shipbuilding and cars, petrochemicals and steel.

The main steel company, (POSCO, the only important state enterprise in the industries mentioned) has had low financial returns throughout its 20 year life despite heavy subsidisation of its non-traded inputs, including the real interest rate which has been negative throughout most of its life. It has also received protection (the import tariff on steel was 25 percent until recently). Despite this, pre-tax income as a percentage of assets averaged only 4.6 percent from 1973–87. Even that figure would be exaggerated if assets were not revalued with inflation. These figures suggest that POSCO may even have had negative social returns.²⁰

I visited in 1986 Hyundai's shipyard at Ulsan where operations began in 1973. I marvelled at their technological progress. A Scottish firm on the Clyde had taught them. The professor of marine engineering at Ulsan had studied at Glasgow University. He told me 'You British could teach us to make ships, although you could not make them yourselves'. However, there had been seriously mistaken investment decisions, and a top executive disclaimed economic success. They were still enjoying subsidised interest rates. Only this, together with much lower wage rates permitted them to compete with Japan.

It also seems very unlikely that Hyundai's cars have contributed much to the dynamism of Korean industry. I met the late George Turnbull, ex-Chief Executive of British Leyland, in Seoul in 1975. He was setting up production of the Pony car. He was amazed at the speed with which production in Korea could be initiated from

¹⁹For some confirmation of this see Westphal *et al.* (1981). Howard Pack also writes "...formal methods of knowledge acquisition were undoubtedly dwarfed by the ability to absorb non-proprietary knowledge in the relatively uncomplicated sectors that formed the basis of the early industrialisation drive", [Pack (1992), p. 82].

²⁰This paragraph is based on Auty (1991).

a 'green field' site. But ten years later exports were still subsidised and the domestic market was totally protected (imports of cars being banned). To quote "Hyundai initially exported at a loss to Asia in order to boost scale benefits and required large subsidies until the mid-1980s" [Auty (1993)]. Hyundai entered the Canadian market in 1984 with the help of a preferential tariff, but it earned a profit of only \$ 50 per vehicle [Auty (1993)]. It later in 1985 entered the US market helped by Japanese Voluntary Export Restraints (VERs). It was recently reported that 'in the US market its cars are a byword of poor quality' (Financial Times, June 3, 1993). The petrochemical industry is heavily protected. Naphtha-based plants can be internationally competitive only when the price of oil is very low. This applies in Korea despite her efficiency in plant construction. See Auty (1991).²¹

The doubts I have expressed concerning steel and petrochemicals in Korea apply also, perhaps *a fortiori*, to Taiwan, despite some glowing accounts of the progress of these industries.²² I visited the integrated steel plant of the China Steel Corporation in 1976. It was still under construction, so I was surprised to read in [Wade (1990), p. 99] that it 'came on line' in 1974. From a long interview with a very frank Vice-President I was able to make a back of the envelope cost-benefit analysis. Sales to exporters, especially shipbuilders, would have to be made at world prices. But sales to the construction sector, which was remote from exports, could be made at protected prices and it was expected that this together with low interest rates supported by Government guarantee, would enable the plant to be viable. I guessed that it might have a very low positive return at shadow prices. I also visited a petrochemical plant, which almost certainly produced negative value-added at world prices.

VIII. THE MOVE TO CAPITAL AND SKILL INTENSITY

It has been my contention that the outstanding success of Korea and Taiwan from the early 1960s to the mid-1970s was based on a phenomenal growth of labour-intensive manufactures. This branch of manufacturing took off because exports were highly profitable once the previous bias against manufacturing for

²¹Cost-benefit analysis of six promoted projects in Korea are reported in Stern (1990). These use the shadow prices given in Sabin and Kato (1989). These studies are not based on actual operating data. First there is a social cost-benefit analysis based on the project proposal. The project data are then corrected only for price changes, and a second estimate of social returns produced. As admitted, the latter is not an *ex-post* appraisal. It assumes that the *quantities* of all inputs and outputs are as originally projected. It therefore shows only the extent to which an appraisal may go wrong as a result of incorrect assumptions about future prices. For what they are worth, it is not claimed that the results contribute a good case for selective intervention. It may also be noted that the same paper categorises Posco and Hyundai's car production as successful. This categorisation is not, however, based on cost-benefit analysis or on financial returns. Indeed, the ascription of 'success' does not even follow from the discussion of the ventures.

²²For instance in Gold (1986).

export was removed. The high profitability also depended on a relatively well-educated hard working docile labour force which was, apart from the natural rate of increase, fed by a large movement out of agriculture (a process not very different from the famous Arthur Lewis model of growth with unlimited supplies of labour). High profits and increased earnings for recruits to the industrial labour force led to a very rapid rise in savings. There was thus a virtuous circle.

The *Miracle* agrees that the rise in savings is best explained by growth itself. It points to various government inducements given to savings and investment: but these are also widely prevalent in much less successful developing countries. The profitability of exports was a strong enough inducement to invest (and to save on the part of industrialists). Thus the principal role of government was to 'get the prices right' for exporters, and to give them confidence, by its own commitment to export-led growth, that exporting would remain profitable. It also helped to maintain the docility of the labour force by making strikes illegal and in other ways. It did little to assist in the acquisition of technology: there was no need.

But the need for a transition to more capital and skill intensive technologies, which might present problems of acquisition and learning, was obvious as real wages and savings rates rose in the 1970s. The issue is whether government intervention was needed to effect or speed this transition. We have seen that the Korean government thought so, and this was one of the reasons for the HCI drive. I met the same belief in Taiwan in 1976. I expressed my doubts about the wisdom of this, observing that every firm I visited had plans to 'make their operations more capital intensive [Little (1979), p. 504]. Of course one cannot prove that either Korea or Taiwan would have done better with less selective intervention, but the finding that returns have been very low in some of the main areas of promotion, together with the finding that productivity rose faster in the 'old' industries than in the infant industries must certainly count as evidence against selective intervention. The exception to these findings is light electrical and electronic machinery, largely consisting of consumer goods. Confusingly enough, these labour intensive activities count as heavy industry in Korea. They were promoted and were probably highly profitable, both from a private financial and a social point of view. But governmental promotion in this instance was giving a passing winner a pat on the back [Yoo (1990)]. It is interesting that the manufacture of semi-conductors at the high technology end of the electronics industry was developed without subsidy and apparently profitably by a private firm [Yoon (1992)].

There may be a case for the public promotion of institutions to facilitate the absorption of sophisticated foreign technology when the increasing scarcity of labour makes the most labour intensive modes of production obsolete. Korea and Taiwan have created such institutions, and are still struggling with the problems that arise when labour becomes scarce and demanding. Many other developing countries

have promoted institutes of technology, and supported research and development. There is certainly a *prima facie* case for this as research and development must often give rise to external benefits: and ultimately a country may and should want to go beyond absorbing foreign technology by developing an indigenous scientific or technological capability. What determines success in this area is beyond my knowledge. All I need to say here is that this kind of promotion of research and development is not a high priority in the early stages of industrialisation.

IX. CONCLUSIONS

The rapid growth of a number of East Asian countries is fully explicable in conventional economic terms, that is very high rates of both material and human investment, together with the absence of the macro-economic disasters that overtook many developing countries in the early 1980s.

However in Korea, and very probably Taiwan, the returns to investment were exceptional in the period 1963–73. This was because industrial capital was combined with a lot of labour. This in turn occurred because reforms to the system of incentives permitted these countries to realise their comparative advantage in labour intensive manufactures—a comparative advantage that was reinforced by a hardworking docile moderately educated labour force.

Selective intervention by the government was minimal in this first period. It later reduced the rates of return in Korea by premature promotion of heavy industry. The acquisition of technological capability was no problem in the early period. It became a problem later as more sophisticated techniques became appropriate. The extent to which government help may then be useful is an open question.

Many developing countries still have an abundance of labour that scratches a living in extremely unproductive activities. But their industrial development absorbs little labour. It is to the Korean and Taiwan policies of the early period that they should be looking. Apart from 'getting the prices right' what is most needed is an improvement in the quality of the labour force, and labour legislation that encourages employment.

Lastly let me revert to the trade policy recommendations of LSS with which I began. I have recently been trying to convince the Indian government that it should abolish quotas, institute a low uniform tariff, ensure that the exchange rate is such that the manufacture and export of tradeables is adequately profitable and rarely, if ever, subsidise particular industries—that is, in short, it should adopt the recommendations of LSS. This means that I have found nothing in either theory or experience in the past 25 years that makes me want to modify what was then recommended.

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Comments on “Trade and Industrialisation Revisited”

In 1970, Ian Little, Tibor Scitovsky and Maurice Scott (LSS for short) offered the following advice to the governments of developing countries:

“...the elimination of quotas and a uniform tariff of 10–15 percent. The exchange rate should be adjusted to ensue that exports were competitive. If any industry was, exceptionally, to receive more promotion than that implied by the low tariff, this should be by some form of subsidisation which should not exceed another 10–15 percent of domestic value-added.”¹

On returning to the issue nearly 25 years later, Little concludes: “...I have found nothing in either theory or experience in the past 25 years that makes me want to modify what was then recommended”.

His present paper can be seen, therefore, as a counterblast to the increasingly fashionable belief that some new set of industrial-science-technology policies is needed to replace the now-discredited older forms of government “assistance” to the economy and that this need is born out by the experience of the “high performance Asian economies” (HPAEs), in particular South Korea and Taiwan. Little pays particular attention to Robert Wade’s book *Governing the Market* and the World Bank’s publication *The East Asian Miracle*, but these are only representative of a growing body of literature to the same effect.

I

Little’s main thesis can be summarised in a simple analogy:

A number of people are in a room banging their heads against the wall with varying degrees of ferocity. They all suffer from severe headaches. After a while, a few people decide to bang much less hard

¹All quotations of Little are from his Islamabad paper.

and one or two stop banging completely. Everyone in this group finds their headaches moderating and those who have stopped banging completely find that their headaches have disappeared completely. An observer now enters the room and begins a study to find the secret of the miraculous headache cure invented by the few. Instead, he should be studying why the majority keep inflicting headaches on themselves by continuing to bang their heads against the wall.

In Little's view, the HPAEs merely stopped using the economic equivalent of head banging policies, such as selective import substitution, heavy selective subsidisation and exchange rate rigging. Having decided to follow sensible economic policies, their economies grew at catchup rates while those who continued to bang their heads against the interventionist wall stayed in the low or no growth league. In this view, there is no East Asian Miracle, just normal, expected results following from sensible economic policies and what requires explanation is "...the relatively poor performance of Latin America, and the extremely poor performance of Africa South of the Sahara (where a good many countries had *negative* growth despite positive investment and often quite high expenditure on educations)." As an example of answering the wrong question he quotes the World Bank report as saying "The most successful selective intervention in HPAEs—the commitment to manufactured exports—was also the most general" and he correctly observes that removing the "doubletalk" this amounts to saying "The least selective intervention in the HPAEs—the commitment to manufactured exports—was the most successful."

In making his case, Little reviews some of the new interventionist policies. He argues that these are just the latest of a series of self-delusions that seduce governments from the good advice of keeping policy broad-based in scope and simple in conception. I will mention just two of them.

First, endogenous growth theory in itself carries no case for intervention but, once ideas are recognised as the underlying driving force of growth, their publicly good nature gives a case, as Arrow long ago recognised, for some subsidisation of R & D. There is nothing in the theory, however, to suggest that this support should be selective.

Second, the new trade theory amounts, it seems to me, to nothing more than a belated recognition by trade theorists of what Industrial Organisation economists—to say nothing of almost all non-economists who study industry—have known for a long time: that manufacturing (and service) production is dominated by price setters, often operating in small-group situations. The "new" policy application is that governments may spot, early in the day, which industries will be the future earners of large oligopolistic profits and take interventionist steps to ensure that one or more of the firms will be established domestically rather than abroad. The whole point of

the returns to entrepreneurship, however, are that they are the returns to uncertainty (in Frank Knights's sense of the term) and we have no evidence that governments are better innovators in the face of uncertainty than are private entrepreneurs. It also seems to me that, since what one government can see and do many governments can see and do, the rush to appropriate future oligopolistic rents can all too easily lead to rushes of too many subsidised entrants into the latest faddish new development. Little correctly points out the British government's attempts to push such winners have resulted in large losses of taxpayers' money with few, if any, oligopoly rents to show in return. As the American historian of technological change, Paul David, has rightly pointed out: it is at the early stages of the development of some new technology where a small nudge by the government may have a big effect on the subsequent path-dependent nature of the technology's evolution; it is precisely at this critical stage, however, that we know least and, therefore, can make the biggest errors.

Little then goes on to consider both statistical evidence and the historical experience, particularly of South Korea. In all this, he makes a strong case that the efficacy of the old-fashioned, specific interventions, whether dressed in new or old theoretical guises, is not proven, while those countries that have ignored these policies most have prospered most. In short, we should ask why nations, such as India and Pakistan, are still banging their heads against the wall of interventionist policies, rather than why those who have stopped have undergone a "miraculous" growth. In the case of the apparent exception of South Korea, Little argues that it prospered most when it gave non-specific support to export industries and least when it tried to bias its growth in the direction of specific, heavy industries. This is also how I read Westphal's account of the same experience in the summer 1990 issue of the *Journal of Economic Perspectives*.

What countries need in Little's view is to get the political situation "right" (i.e., stable); to get background macro policies "right"; to get prices "right"; not to distort incentives with large specific subsidies or exchange rate manipulations; and to develop good labour force skills and organisations (including not overly militant unions).

If this is done, Little believes that growth will more or less take care of itself. It will start off in simple labour intensive industries in which the technology is easily transferred—often in terms of second-hand machinery whose sellers are able to provide sufficient operating instructions. The difficulties in diffusing more advanced state-of-the-art technologies due to the high degree of knowledge that is required—much of which is tacit—makes this an important part of the policy advice: do not try to move "up market" too soon; first let growth take a firm hold at the bottom end of the skill distribution and wage scale. (In spite of his excellent work on *The Competitive Advantage of Nations*, Michael Porter sells short the enormous power of early growth based on the advantages of well-educated, low-wage workers

operating with simple, easily diffused technology.)

II

All in all, Little's case is strong and well presented. It deserves to be read and considered carefully alongside of the interventionist literature such as the books by Wade and the World Bank.

This raises the question of how one should proceed if one is an observer of this debate wishing to see where the balance of evidence lies. I make two suggestions below.

The first is that we leave out all the detail and sophisticated argument as to who did what at the margin and what effect it had, and take a very broad perspective over the entire developing world to see if it is inhabited with Little's many "head-bangers" and a few reformed "non-bangers". At this broad level, it is very hard to disagree with the LSS side of the debate. On the one hand, the countries that came close to following LSS's advice have prospered relatively to those who did not, and the beginning of their raise above the pack coincided with their change in behaviour with respect to head banging. On the other hand, those who have remained in the head-banging camp have languishing, often relatively and sometimes absolutely. This does not suggest the victory of total *laissez faire* policies, as the students of the HPACs, including LSS as well as Wade, have reminded us. What the overall view suggests, however, is that the more general the interventions that do occur, and the stronger the mechanism for reversing mistakes (which is provided much more by an exported-oriented policy than an import-substitution one), the greater the "miracle".

The second approach is to look back and see other delusions which have seduced policy-makers into various forms of head banging. Think, for examples, of just three of the major delusions that have been important in this century: (1) the state can coordinate economic activity through central planning better and more efficiently than can decentralised markets; (2) farm production is most efficiently organised around large collectives in which ownership is vested in the state; (3) firms producing ordinary goods and services are more efficiently run, and will be more innovative, if owned and operated by the state compared with private ownership and control. If these delusions had been seen for what they were at the beginning of the century, untold human suffering and economic waste would have been avoided. Against the harm done by these and other similar delusions, the second-order issue of what the state can and cannot do to help the market-oriented economy in specific instances falls into insignificance.

Of course, these past examples can only provide cautionary tales. But they are important tales. People seem always to want to delude themselves into believing that collective action through the state can accomplish many specific things that evidence shows repeatedly that it cannot. What economic activities the state is

currently thought to accomplish better than markets is subject to fad and past fads of this sort have done incalculable harm to vast numbers of people. At very least, this should warn us to be careful of new arguments for an active part of the state in detailed market processes. No doubt, there are some things that only the state can do, and there are others things in which the state may be able to offer an effective helping hand to private agents, but the potential for harm from fad-driven, misguided, interventionist policies is so enormous that massive errors of the head-banging variety need to be guarded against at all times.

III

Finally, since I am supposed to be critical, I would add that Little in his desire to make a strong case for non-directive government policies omits some cases in which selective interventions may have worked—revealing thereby that the world of experience is never as simple as we would like it to be or that we make it out to be in our mental constructs!

First, most countries that have got onto sustained growth paths have had their initial buildup of industry under significant tariff protection. This includes Germany, the United States, Canada and most of the HPACs. The initial creation of an urban work force with urban values and work habits may require some protection from competition coming from countries which have already made that shift. But this calls for only a generalised protection of the whole manufacturing sector, not for the prediction in advance of which industries and firms will become high performers.

Second, there are some spectacular successes in particular industries and the path dependency of state-of-the-art product and process development may give a well-established early entrant a lasting advantage long after the initial reason for its successful location in the country are gone. The English government's attraction of the Flemish weavers established an industry that lasted for centuries. The Swiss chemical and pharmaceutical industries were originally established in response to its lax patent laws which allowed the processes developed in France and Germany to be copied (and then improved on) in Switzerland with impunity. The original success of Phillips Electric, first in Holland and then over the world, was essentially due to copying Edison's electric light principle without paying anything for it. These examples, all but the first of which come from Brenner and Saul (who also cite many others), show government prescience not in predicting the success of particular lines, but rather in creating transient attractive conditions which established lasting advantages.² Modern research on path dependent innovation has no trouble explaining how advantages, once created, may be very durable and this is

²R. Brenner and S. Saul (1982) *The Economic Development of Small Nations*. In C. Kindleberger and G. di Tella (ed) *Economics in the Long View*. New York: New York University.

what creates the potential gain from specific interventions at the right moment. But there is still nothing to suggest that governments can make better guesses than markets about which particular lines will become durable successes. Again this argues for general rather than specific policies.

Third, government research is particularly important both in agriculture and in industry. Since resources are usually scarce, someone must make non-market allocative decision on publicly funded R&D. Many of the poorer countries are developing non-traditional agricultural exports (non-wood, forest products are a typical concern). Policy decisions of a fairly specific nature are needed in deciding which direction to push research. In these, and many other similar cases, there is no way for governments to avoid taking specific views on the relative promise of different lines of development. The key to these cases is that pre-market R&D is involved and there is no alternative to non-market determination. This does not, however, conflict with the LSS advice that, once markets can take over, they, rather than bureaucrats, should make the allocative decisions.

Finally, I observe that Little's argument for general policies is, as he himself recognises, strongest at the early stages of development which are based on cheap labour with high standards of primary education, using technologies which are "simple, non-proprietary and easily acquired". As development proceeds, labour becomes scarce and wages rise. It is then necessary for the economy to move up the value-chain to higher-skill-using types of production. At this time, technology transfer becomes more important and more difficult. There is an active debate on the amount and type of public policies for technological transfer and diffusion that are needed at this stage. Although the circumstances may call for more intervention than a casual reader of LSS might assume, and although Little states "what determines success in this area is beyond my knowledge", the general LSS prescription is still applicable. I paraphrase it to fit this case as follows: "wherever the existence of market failures of one sort or another, including those related to the transfer of relatively sophisticated technology and its diffusion throughout the receiving country, call for government assistance, that assistance should be kept as general as possible, leaving as much of the detailed allocation among sectors, products, processes, and firms to be decided by the market."

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Comments on “Trade and Industrialisation Revisited”

Mr Chairman, Distinguished Guests, Ladies and Gentlemen:

It is a pleasure and honour for me to comment on the paper by Professor Ian M. D. Little.

Professor Little starts the exposition by pointing out that the 1970 book *Industry and Trade in Developing Countries* by Professors Little, Scitovsky and Scott had exposed twenty four years ago the bad effects of import substituting policies, and had advocated the elimination of quotas, and the adoption of flexible exchange rates and of uniform tariffs amounting to 10–15 percent. According to the author if any industry was, exceptionally, to receive more promotion than that implied by these low tariffs, this should be done by some form of subsidisation which should not exceed 10–15 percent of domestic value-added.

The policies advocated by Professors Little, Scitovsky and Scott were pursued by a large number of developing countries only after they were faced with balance of payments bottlenecks during the 1980s. Lately even India has adopted these policies.

Twenty four years have passed since the publication of the book *Industry and Trade in Developing Countries*. Professor Little asks whether anything has occurred during this time period in the realm of ideas and in the experience of development to make one want to modify the stated guidelines.

As new development Professor Little mentions the “strategic trade theory” of Professor Krugman. He points out that this theory is related to the infant industry argument, and mentions that according to Amsden (1989) and Wade (1990) government intervention especially in the form of selective protection or other forms of promotion of industries was an essential element in the success of Korea, a fact that was ignored by himself in his 1970 book.

Professor Little stresses that Korean government has directed the process of industrialisation to a greater extent than any of the other fast growing Far Eastern economies. He then asks whether relatively highly promoted sectors expanded faster than others, and if so whether such expansion was beneficial to the growth of GNP

per head. Professor Little points out that the recently published volume *The East Asian Miracle* by the World Bank (1993) tries to answer these two questions and to establish whether industrial policy made important contribution to the growth of high performing Asian economies. The World Bank study analyses these problems using total factor productivity analysis. It shows that the outstanding characteristic of the high performing Asian economies is the rapid productivity growth. But according to Professor Little no significance should be attached to total factor productivity figures estimated using the method employed by the World Bank study. To study the second question whether promoted industries grew faster than expected he accepts the claim that growth was miraculous. Considering the pattern of development with the "normal" pattern estimated using the methodology of Syrquin and Chenery (1989) he finds out that the sectors that grew most were more labour intensive sectors. Hence, according to Professor Little one cannot state as emphasised in the World Bank study that promoted industries grew faster than expected.

Professor Little concludes that he has found nothing in either theory or experience in the past twenty four years that makes him want to modify what was recommended. I fully agree with Professor Little.

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