The Department’s Working Paper series seeks to provide readers with access to current research on international relations. Reflecting the wide range of interest in the Department, it will include topics on global international politics and the international political economy, the Asian–Pacific region and issues of concern to Australian foreign policy.

Publication as a ‘Working Paper’ does not preclude subsequent publication in scholarly journals or books, indeed it may facilitate publication by providing feedback from readers to authors.

Unless otherwise stated, publications of the Department of International Relations are presented without endorsement as contributions to the public record and debate. Authors are responsible for their own analysis and conclusions.
The Australian economic policy community has vigorously championed an interpretation of Northeast Asia’s economic success that sees that success through the prism of conventional neo-classical economics. The leading voices in that policy community have argued that selective governmental assistance to targeted industries has been neither a necessary nor a sufficient condition for the economic success of the Northeast Asian market economies (Japan, South Korea and Taiwan); that in cases where targeting could be considered to have been successful, the targeting was ‘market conforming’; and that where governments have attempted to promote and assist particular industries the results have been as harmful as they have been beneficial.

This paper critically examines these claims. It questions the evidence used by the policy community, particularly its excessive reliance on a small number of studies based on econometric modelling and its marked reluctance to acknowledge and confront empirical evidence that challenges a neo-classical interpretation. It also highlights the inadequate treatment of externalities and technology in the neo-classical approach.

The paper presents evidence, much of it from industrial case studies, to show that none of the Northeast Asian governments has been content to trust the course of economic development exclusively to the market. Intervention to facilitate the acquisition, adaptation and diffusion of technology has been pervasive. All three countries have consciously targeted industries that were perceived to be strategic for the economy’s future growth—industries that were skill- and capital-intensive, industries that were expected to generate technological spillovers and other externalities, and industries whose products were identified as having high elasticities of demand. This evidence fits better the interventionist rationales of strategic trade theory and new growth theories than it does the so-called market-conforming rationale of neo-classical economic theory. Northeast Asian governments have used trade and industrial policies to achieve two ends: (i) to assist domestic firms to become internationally competitively enabling them to realise scale and learning economies; and (ii) to generate externalities that benefit a wide range of leading-edge industries.
The shift in the world’s centre of gravity towards East Asia has brought with it large changes in the international economic and geo-political systems, as well as in the analytical and ideological prisms through which people all over the world view reality.


The Australian economic policy community’s interpretation of industrial policy in the Northeast Asian economies has been inextricably caught up in the debate over domestic economic policies. Advocates of the level playing field have been determined to ensure that their simple policy prescription should not be complicated by an acknowledgement that industrial policies have worked elsewhere. This is seen in a number of official reports. Take Ross Garnaut’s *Australia and the Northeast Asian Ascendancy*. This report firmly placed on the political agenda the importance to Australia of the phenomenally rapid and sustained rates of economic growth in Northeast Asia. By viewing the Northeast Asian success through a conventional neo-classical economic prism, the Garnaut Report is tellingly silent on the issue of state assistance to targeted industries.

This interpretation—viewing Northeast Asian success through the prism of neo-classical economics—is one that has been vigorously championed by the economic policy community in Australia. In official reports, academic papers, speeches, interviews, and newspaper articles, the leading voices in that policy community have argued that the Northeast Asian economies demonstrate:

- that selective governmental assistance to targeted industries has been neither a necessary nor a sufficient condition for the economic success of those economies;
- that in cases where targeting could be considered to have been successful, the targeting was ‘market-conforming’; and
- that attempts by government to promote and assist particular industries are as likely to be harmful as beneficial.

---

The policy community has also been at pains to refute claims being made by Australian advocates of selective industrial intervention that the Northeast Asian economies demonstrated that new developments in international trade theory (‘strategic trade theory’) could work in practice. The policy community has argued that strategic trade theory rests on fragile assumptions unlikely to hold in practice and too intimidating to be a practical guide to action.

The most influential statement of these claims is the Industry Commission’s study Strategic Trade Policy: The East Asian Experience, and it is that study which we will use to exemplify the economic policy community’s interpretation of Northeast Asian economic growth. It is an appropriate text to use for that purpose. The Industry Commission published the study to refute claims being made by Australian advocates of selective industrial intervention that strategic trade theory offered an intellectual justification for such intervention and that the Northeast Asian economies constituted evidence that the new theory could actually work in practice. Even though the Industry Commission’s study was entirely derivative and contained no new empirical work, economists and economic commentators in Australia have frequently cited the study as an authority to support their arguments that strategic industrial assistance contributed little (or nothing) to the strong economic (and export) performance of the Northeast Asian economies. The study has also attracted attention outside of Australia. We first examine each of the above four claims.

(i) that selective assistance to targeted industries has been neither a necessary or a sufficient condition for the economic success of those economies.

The IC study draws on the experience of five economies in the region—Japan, South Korea, Taiwan, Singapore and Hong Kong. It claims that strategic targeting cannot be taken as a common factor in East Asia’s economic success since it was not

---


present at all in Hong Kong, ‘the most outstanding and robust example of the benefits of free markets’. Hong Kong provides ‘the most convincing evidence’ that exceptional economic performance can be achieved without the help of government intervention.\(^5\)

The report also refers to econometric and statistical evidence to suggest a ‘mixed picture’ concerning the effectiveness of targeted industrial policies in Japan and Korea.\(^6\) It acknowledges that in Japan in the 1950s and 1960s the output of the machinery industry, including the targeted motor vehicle and computer industries, grew at rates well above the manufacturing average. But it points to Japan’s metal finished goods and the consumer electronics industries\(^7\) to indicate that good performance is possible without assistance, and to the targeting in the 1950s of Japan’s iron and steel industry—which experienced a growth rate below the manufacturing average in that period—to demonstrate that government assistance does not guarantee success.\(^8\) The Industry Commission advances a similar case for Korea. Broadly based statistics are presented to show that several of the industries that were targeted during the heavy industrialisation drive of the 1970s were already growth leaders in the 1960s (such as transport equipment and iron and steel). While the growth in those two industries was greatly boosted following the extensive targeting of heavy industry in the 1970s, ‘similarly high growth was also achieved in the same period by industries not included in the heavy and chemical industries drive, such as leather products, footwear, fabricated metal products, and electrical and scientific equipment’.\(^9\) In short, econometric and statistical evidence is used to draw the conclusion that government intervention is neither a necessary nor a sufficient condition for achieving above average rates of growth: ‘some assisted industries became international successes, others failed. And some industries succeeded without government intervention’.\(^10\)


\(^6\) ibid. pp. 54–6.

\(^7\) The IC report (p. 57) cites Wolfgang Kasper’s claim that ‘names like Sony, Honda, Canon or YKK owe nothing whatever to bureaucratic promotion, but everything to innovation, rivalry and low cost’.

\(^8\) Arndt also mentions motor cars and consumer electronics as examples of successful Japanese industries in the 1960s that ‘succeeded on their own without special government support’. See H.W. Arndt, *Industrial Policy in East Asia*, Reprint Series, National Centre for Development Studies, Australian National University, Canberra, 1989, p. 41.


\(^10\) ibid. p. 59. This, as a Treasury study indicates, is the very same assessment that was made by the US Council of Economic Advisers in its *Economic Report to the President* of February 1984. See Department of the Treasury, ‘Strategic Targeting for Industrial Economic Round-up’, January, 1990, pp. 3–13.
To the authors of the Industry Commission’s study, the evidence points to the conclusion that strategic interventions to assist industries are ‘unimportant in explaining success’ compared with a number of other factors that each of the East Asian economies faced. They include:

- a period of crisis before the rapid growth phase;
- a strong social consensus in favour of growth;
- strong governments that were able to ensure that the legal, social and institutional frameworks necessary for the effective operation of markets were in place and to resist the pleas of special interests;
- an unusual opportunity to exploit technological catch-up;
- vigorous domestic and international competition.
- a plentiful, flexible, and competitive labour force.

But even in the case of industries that succeeded with government intervention, the Industry Commission cautions that the existence of these common factors makes it difficult to isolate the contribution of state assistance.\(^\text{11}\)

There are serious weaknesses in this depiction by the economic policy community of the role played by industry-specific assistance in the Northeast Asian capitalist economies.

First, in arguing that ‘there is no convincing evidence that targeting was crucial to good economic performance’, the Industry Commission’s study reveals its own narrow notion of evidence. It places excessive reliance on a small number of neo-classical econometric studies while at the same time choosing to ignore much of the rich case study literature that challenges a neo-classical interpretation. Moreover, its reliance on growth rate indicators to compare the performance of sectors is questionable in that these are heavily dependent on the size of the base from which growth occurs. There is also a question of what is the relevant comparison: with the average growth rate of all industries, or with what that industry might have achieved in the absence of intervention?

Second, by insisting that analysts must show that ‘other factors were of minor importance’ before they can conclude that governmental targeting was an essential ingredient, the Industry Commission’s study not only wrongly requires a necessary condition to be a necessary and sufficient condition but also fails to consider the possibility of joint and cumulative causation. After all, policies of industrial

\(^{11}\) Few in the policy community were as extreme as Ian McLachlan: ‘Japan's success is due more to plain hard work than to any miraculous government intervention’. See Ian McLachlan, ‘The Price We Pay for Pathological Protectionism’, *Australian*, 21 October 1991.
targeting may well have been effective precisely because of the accommodating environment in which they were implemented. It is not necessary to deny the relevance of such factors as quiescent trade unions, a trading regime that encouraged exports, and a domestic consensus in favour of growth to argue that industry-specific policies were an important factor in the success of some industries in some of these countries. And it is quite beside the point for neo-liberals to point to the success of ‘laissez-faire’ Hong Kong as if that constituted a refutation of the claim that state intervention has played a decisive role in other countries at certain stages of their development.

(ii) that in cases where targeting could be considered to have been successful, the targeting was ‘market-conforming’.

The Industry Commission makes much of the argument that industrial policy interventions in Northeast Asia were ‘market-conforming’. Curiously, given the centrality of this concept to its interpretation, nowhere does it provide a definition of ‘market-conforming’ or an indication of the criteria by which policies might be judged not to have conformed to the market.

The closest the report comes to providing a definition is to suggest that ‘Industry assistance policies were combined with competition measures and intervention-induced distortions to prices were not allowed to go on indefinitely’. We would agree with both components of this statement. Contests, to use the World Bank’s terminology, were important either domestically as in the fierce rivalry keiretsu, or internationally as in the Korean government’s insistence that its targeted industries compete on world markets. And it is true that ‘the government did not offer permanent protection’. But neither of these statements addresses the issue of whether the policies substantially conformed to market signals in key periods of industry policy activism. Mercantilists would not be surprised that protectionism was not maintained indefinitely: to support an industry until it is sufficiently strong to compete on world markets in its own right would be a classic mercantilist strategy. Even on the issue of the length of time for which protection was provided, however, the Industry Commission’s own evidence contradicts some of its claims. The report argues that ‘where success was observed, any specific support was broadly market conforming and was normally withdrawn within a relatively short period of time’. But Table 20 of its report records that government intervention in Japan in the car industry was ‘High’ from 1952 to the early 1970s; in computers it is similarly listed as ‘High’ from the mid-1950s until the mid-1970s. Much obviously depends on the interpretation of a ‘relatively short

12 Industry Commission, Strategic Trade Theory, p. 40.
13 ibid. p. 15.
For another industrial policy sceptic, the World Bank, the market-conforming nature of economic policies in Northeast Asia is demonstrated by a comparison of domestic and international prices. The prices of traded goods in Northeast Asian countries, it suggests, were closer on average to international prices than those in other developing areas.\textsuperscript{14} There are several problems with this analysis. First, the use of averages disguises considerable inter- and intra-country variation. Second, the data in the analysis are for 1985, reflecting the substantial liberalisation that had occurred in the tariff policies of the Northeast Asian countries since the industrial policy heyday. Again, the data provided elsewhere in the report undermine the ‘market-conforming’ argument. These show that in the late 1960s transport equipment, iron and steel, and textile products all received effective rates of protection in Japan in excess of 30 per cent. The Bank cites Robert Wade’s data for Taiwan in 1972 that show that a significant percentage of items was subject to nontariff barriers and two-thirds of potential imports faced nominal tariffs above 30 per cent: this figure had fallen only to 40 per cent of potential imports by the end of the decade. In Korea, the Bank concludes, even by 1983 ‘most sectors were still protected by some combination of tariffs and nontariff barriers’.\textsuperscript{15} Even if the divergence between domestic and international prices in Northeast Asia was not as great as in most less developed countries, the policies can hardly be termed ‘market-conforming’.

Finally, consider another definition of market-conforming policies. This argument accepts that interventionist policies distorted some prices but asserts that offsetting measures such as exempting exporters from duties and taxes on components created a neutral trade regime. Two points are relevant here. First, the evidence suggests that the Northeast Asian countries did not maintain neutral trade regimes but that the combination of export incentives and undervalued exchange rates, in the Industry Commission’s own description of Korea, ‘strongly favoured producing for export as opposed to domestic markets’.\textsuperscript{16} Second, even if one accepts the argument that the trade regime was neutral, in itself this does not refute suggestions that governments frequently intervened ‘to get prices wrong’ when pursuing sectorally-specific policies including, for example, provision of subsidised loans or inexpensive land.\textsuperscript{17}


\textsuperscript{15} ibid. p. 297.

\textsuperscript{16} Industry Commission, \textit{Strategic Trade Theory}, p. 22 (authors’ emphasis).

\textsuperscript{17} Ironically, given the distaste with which his work is viewed by the Australian economic policy community, Chalmers Johnson was one of the first commentators to suggest that Japan’s industrial policies have been ‘market-conforming’. For Johnson, market-conforming methods of intervention refer to ‘a government-business
(iii) that government intervention to promote and assist particular industries is as likely to be harmful as beneficial.

The economic policy community is highly sceptical of government intervention. This attitude is reflected in the Industry Commission’s comment that one of the ‘valuable lessons’ that Australia can learn from the Northeast Asian experience is that intervention to promote and assist particular industries is as likely to be harmful as it is to be beneficial. And it is a ‘lesson’ that other Australian economists and economic commentators have echoed. As one economist states, government was as much a hindrance as a help in developing the Northeast Asian economies. Two arguments are advanced.

The first states that the Northeast Asian evidence shows that even in those ‘miracle’ economies ‘government failure’ exists and that governments lack the capacity to ‘pick winners’. Here the Industry Commission and other Australian critics of industrial targeting make much of three stock examples to show that even Japan’s Ministry of International Trade and Industry (MITI) has been associated with policy failures. They mention MITI’s misguided attempt to promote the production of a people’s car, a single model to be manufactured by one officially designated company; MITI’s aborted attempt to prevent Honda from entering motor vehicle production; and, unable to foresee the value of transistor technology, MITI’s myopic attempt to hinder Sony’s acquisition of that technology. Korea’s heavy industrialisation drive is also offered as an example of gross government failure, a failure that ‘left scars on the economy in terms of distorted credit markets, overly-indebted firms and a very high concentration of economic power’.

Helen Hughes doubts whether governments can play any useful role in fostering strategic technologies: ‘For every case of public sector success, there are hundreds of cases of relationship that both enabled the government to achieve genuine industrial policy and also preserved competition and private enterprise in the business world’. See Chalmers Johnson, *MITI and the Japanese Miracle: The Growth of Industrial Policy, 1925–75*, Stanford University Press, Stanford, 1982, p. 29.


failure, even in East Asia.\textsuperscript{21} Hughes, however, does not trouble the reader with any examples of these ‘hundreds of cases’.

The second line of argument rests on the belief that all forms of selective intervention impose costs on others—taxpayers and competitors—and that the costs will normally outweigh the benefits. In the words of a former chairman of the Industry Commission (and subsequent head of the Treasury): ‘Increases in exports from assisted industries are offset by losses in exports from other industries’.\textsuperscript{22} Similarly, Ian McLachlan, when he was shadow minister for industry, frequently asserted that there was no evidence to show that a nation can protect or help one industry without harming another.\textsuperscript{23} Hughes has claimed that direct government intervention in East Asia did not offset market failures, but simply raised costs of production; moreover, attempts to offset the costs of the distortions introduced by inappropriate policies ‘led to many additional intra- and inter-sectoral distortions,\textsuperscript{24} For that reason: ‘Government intervention can be a far more serious cause of market failure than domestic or international market imperfections’.\textsuperscript{25} Even the Industry Commission’s study, which concedes that the ‘ultimate test’ is whether a protected industry generates enough extra national income to compensate for the costs,\textsuperscript{26} falls back on static notions of allocative efficiency when questioning the success of particular targeted industries. It is unwilling to concede that POSCO, the Korean steel giant—‘considered one of the world’s most efficient producers’—could be considered an example of successful government targeting for it ‘may not be efficient in an economic sense’ because it was developed with highly subsidised capital.\textsuperscript{27} Likewise, it argues that it is wrong to cite Japan’s targeting of steel as a success (despite Japan’s later emergence as a major exporter of steel) for ‘the policy was actually a failure when judged by more

\begin{thebibliography}{99}


\bibitem{23} McLachlan, ‘The Price We Pay for Pathological Protectionism’, and interview with John Mellor.

\bibitem{24} Hughes, \textit{Is There an East Asian Model?}, Working Paper, Economics Division, Research School of Pacific Studies, Australian National University, Canberra, 1993, p. 22.

\bibitem{25} ibid. p. 5.

\bibitem{26} A view also expressed by an associate commissioner on the Industry Commission; see Gary Banks, ‘A Comment on Determining Industrial Policy’, \textit{Australian Journal of Management}, vol. 17, no. 1, 1992, p. 188.

\bibitem{27} Industry Commission, \textit{Strategic Trade Theory}, p. 58.
\end{thebibliography}
appropriate criteria’—namely, the rate of return achieved by the industry, ‘which
was relatively low compared to manufacturing in general’.  

The critics link government failure to rent seeking. They believe that because
industry policies provide rents for their recipients, they tend to be hijacked by the
assisted industries. That, Arndt asserts, is the reason why infant industries almost
always never grow up. A clear expression of the unease with industry-specific
intervention is seen in this warning by a senior economic bureaucrat: Even when
there is a clear case in principle for intervention to overcome an obvious market
failure, ‘the risk of government failure increases according to the extent of detailed

No proponent of industrial policies would claim that the state is infallible. But
just as there are examples of state failure in Northeast Asia so there are plenty of
illustrations of private failure both there and closer to home. Australian
commentators need look no further than Australian banks’ experience with bad
debts following the private sector extravagances of the 1980s. There is no a priori
case that the private sector will inevitably pursue more economically rational
policies than the state and such a conclusion is a much contested one among
economists. In concluding that ‘in general, the assertion that the government can
do no better than the market is simply false’, the distinguished American
economist, Joseph Stiglitz, suggests that the state has several advantages over
private sector actors that enable it to play an effective role in overcoming market
failures. It is not enough for critics of interventionist policies to point to individual
cases of failure as evidence that selective policies have hindered sectoral or
national growth. Policy failures must be seen in perspective. How frequent and
typical are the failures? Do the failures outweigh the successes? Is failure to be
measured by the yardstick of static allocative efficiency or by the yardstick of
dynamic efficiency (that is, in terms of the policy’s effectiveness in promoting
growth and technological innovation)? Again, there is a question of what is the
relevant comparison—with the average rate of return on investments within the
country, with the performance of the same industries in other countries, or a proper
(but impossible to measure) counterfactual: the performance that the industry
would have achieved without state intervention?

---

28 ibid. p. 57.
29 Arndt, Industrial Policy in East Asia, p. 33.
30 Michael Keating, ‘The Influence of Economists’, in King and Lloyd (eds), Economic
Rationalism, pp. 71–2.
31 These include its powers to tax, to proscribe, and to punish far more severely than
penalties in private contractual arrangements. In addition, the state may be better
equipped to overcome transaction costs problems. See Joseph E. Stiglitz, The
At one level, the argument that support for one sector comes at the expense of the rest of the economy is a truism. If a static snapshot of the economy is taken, government support to one industry through, for instance, research allowances or tariff protection, must penalise other sectors of the economy that are taxed for this purpose, or which suffer higher input costs. At any given point in time, economies are a zero-sum game: gains for one sector inevitably come at the expense of others. But economies are not static. Once we adopt a framework that examines the dynamics of economic growth, the fallacy of this economic rationalist argument is exposed. Taken to its logical conclusion, a position advocated by some extreme economic rationalists, there would be no role for the government in the economy whatsoever. For government provision of education, of health services, and of roads and railways requires that productive sectors of the economy be taxed (either immediately, or at some later stage as interest payments on government borrowings become due).

Not surprisingly, this extreme position is usually rejected. Maintaining an educated and healthy population and providing a country with good transport facilities are regarded as sound investments of current expenditure in that they provide the foundation for higher rates of economic growth in the future. It is often argued that these forms of government intervention provide public goods that benefit all sectors of the economy: governments are not attempting to pick winners by favouring some sectors over others. Historically, of course, this has often not been the case: technical education has been tailored to the perceived requirements of local industry; railways were built specifically to open up areas for wheat growing or to facilitate coal exports. To tax existing productive activities to improve economic growth in the future provides a justification for other areas of selective government intervention. Again, to take a local example, Australia maintained its pre-eminence in world wool markets in part because of the support provided to the industry through the research conducted by the CSIRO, research funded in part by taxpayers’ money; in other words, by other sectors of the economy. Australia, like all other industrialised economies, has a long history of selective intervention in support of some sectors of the economy in the expectation that the long-term returns will offset the immediate costs imposed on others. Some industries are expected to contribute more to future growth than others.

The Industry Commission itself provides an answer to arguments that industrial policies inevitably lead to state failure in which policy is captured by rent-seeking elements. In asserting that the success of industrial policy in Japan owed much to the temporary nature of protection, the Commission comments that ‘The fact that the government was able to reduce support to industry significantly over a relatively short period also suggests that it retained considerable autonomy
from the demands of special interest groups'.

In Northeast Asia, governments forced infant industries to grow up. Contrary to the arguments of some members of the Australian economic policy community, the World Bank’s recent major study of the East Asian NICs concluded that their governments showed a remarkable degree of policy pragmatism, that they reversed course when policies did not bring the desired results, subjected domestic firms to performance criteria through various ‘contests’, and reduced assistance once firms became internationally competitive.

(iv) that strategic trade theory rests on fragile assumptions which are unlikely to hold in practice and which policy makers will find too intimidating to be a practical guide to action.

Three distinct strands of strategic trade theorising have been developed within mainstream economics. The first is based on game-theoretic considerations of strategy and credible commitments; it suggests that governments can help domestic firms to establish a dominant position in international markets and so earn excess returns ('economic rents'). The second incorporates notions of increasing returns to scale, and is an elaboration of traditional arguments for infant industry protection. The third focuses on externalities. In addition to this work within the mainstream framework, a fourth strand of theorising has been developed which builds on the literature on technological change. This last strand, which we have labelled the strategic technology approach, places at the centre of its analysis the dynamic and cumulative impact of technological change on inter-country competitiveness and economic growth.

In its critique of the intellectual underpinnings of strategic trade theory, the Industry Commission questioned the policy relevance of economic rents and externalities. It cast doubt on whether significant economic rents exist and, even if they do exist in many markets, whether they are large enough to be a major object

---


33 World Bank, *The East Asian Miracle*. Contrast the comments of Helen Hughes: ‘The exploitation of technological opportunities requires imagination, risk taking and speedy decisions. Because some technological judgments will be wrong, some firms will go bankrupt. For all these reasons the public sector, which cannot take risks and where bankruptcy is almost impossible to implement, cannot play a useful role in this area.’ Hughes, ‘Catching Up’, p. 141.

of national policy.\footnote{Industries Assistance Commission, ‘Appendix 5: Strategic Trade Theories’, in Annual Report 1988–89, Australian Government Publishing Service, Canberra, 1989, pp. 81–2.} Citing work by trade economist Avinash Dixit, it argued that any excess returns not eliminated by competition probably reflect the higher returns necessary to compensate firms for higher than average risks in a market—and so are merely an ordinary component of production costs rather than an instance of economic rents. This debate over the significance of rents has, however, remained inconclusive. Estimating the extent of industry rents is particularly difficult in that some of the abnormal profits may not show up in firms’ accounting statements as profits but be retained within the firm and utilised for new investment, employment of new staff, increased research and development expenditure, and so on—the very elements that strategic trade advocates see as providing an advantage to oligopolistic firms. Studies that rely on firms’ reported after-tax rates of profits to deny the extent of rents thus may fail to capture the concept. Indeed, a large portion of industry rents may not go to shareholders but may instead be captured by labour. Evidence in support of this proposition is provided by studies that show that there are significant differences in the wages paid to labour for the same type of job in different sectors of the economy—and that these differences between industries are consistent across time and across countries.\footnote{William T. Dickens and Kevin Lang, ‘Why it Matters What We Trade: A Case for Active Policy’, in Laura D’Andrea Tyson, William T. Dickens and John Zysman (eds), The Dynamics of Trade and Employment, Ballinger, Cambridge, MA, 1988, pp. 87–112; Avinash Dixit, ‘Optimal Trade and Industrial Policies for the US Automobile Industry’, in Robert Feenstra (ed.), Empirical Research in International Trade, The MIT Press, Cambridge, MA, 1988, pp. 141–65; Lawrence F. Katz and Lawrence H. Summers, ‘Industry Rents: Evidence and Implications’, Brookings Papers: Microeconomics, vol. 1, 1989, pp. 209–90; R.H. Thaler, ‘Anomalies: Interindustry Wage Differentials’, Journal of Economic Perspectives, vol. 3, no. 2, 1989, pp. 181–93.}

The Industry Commission also questioned whether externalities, even if they are generated by assisted industries, can be confined to national boundaries.\footnote{Industries Assistance Commission, ‘Appendix 5: Strategic Trade Theories’.} This criticism of externalities (also advanced by the Treasury\footnote{Department of the Treasury, ‘Strategic Targeting for Industrial Development’.) has, however, been blunted by the recent reassessment of the importance of externalities by economists who were once sceptics. Paul Krugman, for example, now emphasises

...that meaningful externalities occur not only when there are direct technological spillovers, but in any situation in which there are increasing returns and [where] market size matters. That means almost everywhere. In other words, the marginal social benefit of a dollar’s worth of resources is not, as conventional theory would have it, equal in all activities except
for a few exceptions. Divergences between social rates of return are pervasive. There are good industries and bad, good jobs and bad, and the optimal policy is to subsidise the good and tax the bad.\textsuperscript{39}

Externalities and the dynamic gains from learning by doing are, however, not captured in the studies that the Industry Commission and the Treasury cite in support of their negative evaluations of strategic trade (and industrial) policies. These econometric studies (often using ‘calibrated’ models\textsuperscript{40}) are cast within partial or general equilibrium frameworks that fail to factor into the equation links with other industries or gains over time. One such study, cited by the Treasury in arguing against the view that Japan offers an example of the successful use of strategic trade theory, models the effects of Japanese government support for the semiconductor industry. The study’s authors, the United States’ economists Baldwin and Krugman, examine Japanese policies to target the production and export of computer memory chips—through promoting strategic early entry into the industry by Japanese firms and assisting R&D in the learning curve stage—and conclude that the policies only served to reduce economic welfare by raising average costs and prices.\textsuperscript{41} This study, one of several by these authors that are frequently cited as reasons for rejecting the policy implications of strategic trade theory, fails to address some of the most significant issues raised by the strategic trade literature, notably benefits derived from increasing returns to scale, from technological externalities and from the dynamic and cumulative impact of technological change on a country’s competitiveness and economic growth.\textsuperscript{42}

\begin{flushright}
\end{flushright}

\begin{flushright}
\end{flushright}

\begin{flushright}
\end{flushright}

\begin{flushright}
\textsuperscript{42} As is acknowledged by one of the authors in a subsequent reflection on this work. See Richard Baldwin, ‘High-Technology Exports and Strategic Trade Policy in Developing Countries: The Case of Brazilian Aircraft’, in Gerald K. Helleiner (ed.), \textit{Trade Policy, Industrialization, and Development: New Perspectives}, Clarendon Press, Oxford, 1992, pp. 225–53.
\end{flushright}
The case for intervention in economic theory

For neo-classical economists, government intervention is only justified when market failures occur. Even the Australian Industry Commission, one staff member notes, has itself made recommendations for intervention on such grounds. But economists tend not to believe that such failures are extensive or that governments have the capacity to correct them without at the same time causing other problems. As an Australian economic rationalist has commented, intervention ‘is fraught with the...danger that government failure will be worse than the supposed market failure the intervention is meant to overcome’. Economic planners in Japan, Korea and Taiwan in the 1950s and 1960s evidently believed that market failures were more likely than neo-classical economists predicted. Whether the possibility of market failure was the real reason for state intervention or whether this derived from more old-fashioned mercantilist concerns to promote rapid industrialisation for purposes of both security and wealth is debatable. But whatever the motives for state intervention—and those commentators who assert that industrial policy has played a significant role in the economic success of the Northeast Asian countries often note wryly that their economic planning agencies were staffed primarily by engineers rather than economists—Northeast Asian countries demonstrated that industrial policies could work in practice which economists have only recently shown to work in theory.

A number of economists have recently acknowledged that markets are far more prone to failure than was previously believed. Joseph Stiglitz comments that whereas the traditional literature ‘characterized market failures as exceptions to the general rule that decentralized markets lead to efficient allocation’, a revisionist view suggests that ‘it is only under exceptional circumstances than

And market failures are even more common in less developed countries. In recent years, neo-classical orthodoxy has come under attack not only for its views on the efficiency of markets. New theories of growth and trade have challenged other core elements of neo-classical theory including the assumption of constant returns to scale, the treatment of technology as exogenous

43 Banks, ‘A Comment on Determining Industrial Policy’, p. 188.
(that is, that technology is static and freely available to all countries); and the
supposition that the rate of growth cannot be increased by raising the investment
rate. These alternative approaches suggest a role for state intervention that goes
beyond the correction of market failures.

The assumption of constant returns is fundamental to the neo-classical model.
Yet it is one that does not sit well with reality, as has long been recognised, for
example, by Adam Smith and Alfred Marshall. For the most part, however,
increasing returns were ignored by economic theory until a model was devised in
the early 1980s that incorporated increasing returns to scale derived from
specialisation. Alfred Marshall much earlier had made the important link
between scale economies and benefits accruing to other parts of the economy. He
suggested that external economies take two forms: those that increased the size of
the local market enabling the realisation of economies of scale in the production of
an industry’s inputs; and the spillover of knowledge and technology to other firms.
Any doubts there might be about the importance of such external economies can be
dispelled simply by observing the tendency for firms in the same industry to locate
within a narrowly-defined geographical region. This geographical concentration—
not merely of high-technology companies as in Silicon Valley or in the North
Carolina research triangle, but of many industries irrespective of technological
sophistication—is clear evidence of the pervasive influence of localised
externalities.

The damage that relaxation of the assumption of constant returns does to the
neo-classical model is difficult to exaggerate. For rather than there being a single
equilibrium point on the production function, the presence of increasing returns
opens the possibility of multiple equilibria. Consequently, the neo-classical model is
unable to provide any guidance as to which combination of capital and labour is
optimal for economic growth. And if multiple equilibria are possible, there is a
variety of trajectories that an economy may experience. The actual development
path that an economy takes may be determined to a significant degree by historical
accidents and/or by expectations of its future growth path that become self-
fulfilling prophecies. Companies and countries that are the early movers in a field
may gain advantages that prove very difficult for rivals to overcome. As Paul
Krugman noted, ‘small beginnings can have large consequences’.

48 Wilfred J. Ethier, ‘Decreasing Costs in International Trade and Frank Graham’s
50 Paul Krugman, ‘Trade, Accumulation and Uneven Development’, Journal of
Development Economics, vol. 8, 1981, p. 156. See also Elhanan Helpman, ‘The
World Bank Annual Conference on Development Economics 1989, World Bank,
The role of historical accidents and early mover advantages in shaping countries’ growth trajectories points to the centrality of technology in economic development. The inadequate treatment of the role of technology is one of the principal weaknesses of neo-classical models of growth and trade. Technological progress is regarded as being exogenously determined, fortuitous and, when it occurs, freely available to all countries within the system. This inability to explain technological change is all the more unfortunate when studies conducted within the neo-classical framework found that a major contribution to the growth of national output came from the residual in the regression equations—which measures total factor productivity or technological progress.\(^{51}\) The World Bank estimates that technological progress contributed more than a third of the growth of Japan, Korea, Hong Kong, and Taiwan, a much larger percentage than in other less developed countries.

Recent work within mainstream economics on endogenous growth models abandons the assumptions of the early neo-classical growth model by attempting to allow for imperfect competition and the role of technology.\(^{52}\) The new growth and endogenous technology models thus bring the mainstream approach much closer to the studies that have been produced over several decades by theorists of technological change. These have demonstrated that, contrary to the neo-classical model, technology cannot be considered as a commodity that is universally available as if it is embodied in a set of blue-prints. Rather, technological knowledge is often specific to individual firms, is dependent upon the prior expertise that they have built up, often evolves through a process of learning-by-doing, and comprises much tacit (that is, uncodifiable) knowledge that is embodied in the personnel employed by a particular company.\(^{53}\) That companies spend a

---


larger percentage of their research and development budgets on developing products than on research is seen as indicating the importance both of learning-by-doing, and the tacitness of technology.\textsuperscript{54}

To the extent that techniques are company-specific and cumulative in nature, a country’s economic trajectory will be heavily influenced both by the past performance of its companies, and by the extent to which the necessary competence for the exploitation of scientific and technological opportunities has been developed. As firms and countries alike vary greatly in their accumulated competence and therefore in the range of technical choices that they may feasibly adopt, the international diffusion of technology does not keep pace with the generation of innovations. In consequence, a relatively wide productivity gap develops between countries. Intersectoral differences in technological levels within countries are smaller than such differences between countries. Consequently, absolute advantages are more important in explaining international trade than the concept of comparative advantage, much beloved in neo-classical theory.\textsuperscript{55}

The emphasis in the new theories of growth and trade on the importance of technology and on how growth trajectories are determined by what goods a country produces is similar to the nineteenth century arguments of List and Hamilton that emphasised the advantages of specialising in the production of manufactures rather than primary products. The new arguments suggest a role for government that goes beyond the protectionism/free trade dichotomy that too often dominates the industry policy debate in Australia (although protection was pervasive in Northeast Asia at critical stages of some industries’ development, and important in providing companies with a domestic market in which they could realise economies of scale and learning-by-doing advantages).

With the acquisition of technology being the key determinant of a country’s growth trajectory, there is in the strategic technology literature a central role for governments to implement selective measures that foster the development and application of new technologies. Here particular emphasis is given to ‘leading’

---

\textsuperscript{54} Giovanni Dosi, Keith Pavitt and Luc Soete, \textit{The Economics of Technical Change and International Trade}, Harvester Wheatsheaf, Hemel Hempstead, 1990.

\textsuperscript{55} Dosi, Pavitt and Soete (ibid. p. 81) estimate that 60 per cent of companies’ R&D budgets is devoted to product development.

In other words, the ‘dominant difference between countries rests in the “different production functions” that they have, and not in different “factor combinations” along the same production function’ (ibid. p. 63, emphasis in original; see also pp. 11, 151). For further discussion see Glenn N. MacDonald and James R. Markusen, ‘A Rehabilitation of Absolute Advantage’, \textit{Journal of Political Economy}, vol. 93, no. 2, 1985, pp. 277–97.
industries, ones that ‘drive and mold economic progress across a broad front’, in other words, industries that generate pervasive technological externalities for a broad spectrum of other sectors. The target should be industries judged to be in the country’s long-term comparative (and absolute) advantage, those whose products have high income elasticities of demand. Nelson terms them ‘strategic’ industries, for it is upon their strength that a country’s economic progress and its international competitiveness depend.

But why should government intervention be necessary? Why would a rational profit-maximising firm not pursue strategies that maximise the possibility of innovation and technological dynamism? The answer lies in market imperfections. First, imperfections in capital markets can give rise to ‘short-termism’—the desire to see immediate high returns on investments. This myopia may flow from the structure of capital markets. In countries where companies are more dependent on equity than on long-term bank lending to finance major investment projects, corporate managers will be under pressure from their shareholders to deliver high returns in the short term. It may also flow from the highly uncertain and risky nature of high technology R&D, and the tendency of the market to discount heavily the possibility of future profits from technological breakthroughs. Uncertain about the technological feasibility of a project and the time it will take, about its total cost, and about the commercial viability of the planned new product, private capital markets are often unwilling to invest in high technology R&D. This unwillingness will be the greater if a country lacks a vigorous market in venture capital. Second, in imperfect product markets characterised by increasing returns, current market signals can be misleading indicators of future profitability. Third, as Scitovsky pointed out many years ago, under investment from market failures also occurs because market signals do not reflect the ‘untraded interdependencies’ that exist among investment decisions when reciprocal externalities are present. Future profits in one industry may be inseparable from the successful establishment of another industry and vice versa—but as the market does not consider the two together, the necessary investments are not made.

The possibility that market signals may fail to yield socially optimal outcomes for the nation is a strong justification for government intervention to target ‘strategic transformative’ technologies. For the targeting of strategic industries,

---


even if it is temporary, may have permanent effects on the future trajectory of a country’s economic development and its technological progress. In Northeast Asia, policies to promote high technology industries have been motivated by just such a Schumpeterian perspective. Governments have played a critical role in establishing institutions that have helped to overcome market failures and to set their economies on a favourable technological trajectory.

**Strategic intervention in Northeast Asia**

In this section of the paper we present evidence—much of it from industrial case studies—to show that the state in Northeast Asia has intervened decisively at various times over the last forty years to change the structure of incentives for particular industries in a manner that has significantly affected the pattern of economic development in those economies. This evidence, we contend, fits better the interventionist rationales of strategic trade and new growth theories than it does the so-called market-conforming rationale of neo-classical economic theory. Indeed, much of the evidence is consistent with an interpretation that suggests that these governments have used trade and industrial policies (and deliberately ‘got prices wrong’) so as to achieve two ends: (i) to assist domestic firms to become internationally competitive by enabling them to realise scale and learning economies; and (ii) to generate externalities that benefit a wide range of leading-edge industries.

**Import protection as export promotion**

One strand of strategic trade theory demonstrates that protection of the domestic market may enable firms to capture scale and learning economies sufficient to give them a cost advantage on foreign markets.\(^{59}\) The assumption is that the protected industry is characterised by economies of scale whereby unit costs of production fall as output rises. If a government closes off its domestic market to foreign competition the domestic producer will enjoy longer production runs than would otherwise be the case and thus reap economies of scale. These ‘static’ economies may be reinforced by a firm’s ability to ‘learn by doing’. The larger the domestic market, the greater the potential for realising such benefits. The lower production costs that are gained from exploiting a protected domestic market—or that come from subsidies to the domestic industry—may then enable the domestic producer to compete more effectively in foreign markets.

Because of its large domestic market, Japanese companies have tended to benefit more than their Korean counterparts from such policies, and Korean companies in turn have benefited more than Taiwanese firms. It should be noted, however, that whereas in Japan vigorous competition has characterised most protected industries, in Korea and Taiwan governments have sometimes allowed monopolies in protected infant industries. Assistance given to the Japanese steel, automobile and colour television industries illustrates the way in which protection of the rapidly growing home market enabled those industries to achieve impressive scale economies and to be well placed to capture export markets when capacity began to outstrip domestic demand.

Promotion of the steel industry lay at the heart of Japan’s postwar program of ‘heavy and chemical industrialisation’. In 1950 the Ministry of International Trade and Industry devised a policy for the development of a modern and internationally competitive steel industry. Under that plan, MITI (and the Ministry of Finance) intervened directly during the 1950s to boost the capital that the industry had for investing in the most advanced steel making technology. The government ensured that the banking system made available to the industry ample capital at favourable rates; provided steel producers with generous depreciation allowances; allocated scarce foreign exchange to the industry for the purchase of the latest equipment and technology from abroad; and extended preferential low-interest loans to the industry, which acted as a green light to other lenders. Although governmental subsidies declined in importance after 1960, the government continued to guarantee much of the private lending. Investment poured into the industry, resulting in a massive increase in gross crude steel capacity.

MITI was determined that the Japanese mills be of optimal size to exploit the economies of large scale characteristic of the industry. In targeting the industry, MITI favoured the very largest firms. Under the first steel plan (1951–55), 70 per cent of government funds flowed to only four of the forty-four steel firms. It feared that left to themselves, competition between the six major steel companies would result in an excess of new projects below the optimum size. To prevent this form of market failure, MITI encouraged investment coordination among the largest

---


companies to enable them to ‘take turns’ in building completely new integrated mills. As a result of this official encouragement of huge new ‘greenfields’ facilities, Japanese mills were soon among the largest and most technologically advanced in the world. By the mid-1970s, Japan led the world in the use of large capacity furnaces, continuous casting techniques, and computer-controlled production processes. There is little doubt that MITI’s intervention in investment decisions greatly assisted Japan to exploit early-mover advantages to enable it to become by 1970 the world’s most efficient steel producer.

Having made these massive investments, Japan’s oligopolistic steel producers needed some assurance of market stability. The government provided that assurance, by allowing the formation of recession cartels and by protecting the domestic market from imports. In fact, throughout the entire postwar period the import of steel products into Japan has been almost negligible. In the 1950s and early 1960s, the ‘extremely high’ levels of tariffs and the system of rationing foreign exchange for imports were effective import barriers. In later years, private non-tariff barriers effectively discouraged imports. As a result, the protected and rapidly growing home market enabled the industry to achieve impressive scale economies and to be well positioned to capture export markets when, by the late 1960s, capacity began to outstrip domestic demand. In addition, Japan reaped two other benefits: a falling domestic price for a crucial intermediate input and, because of steel’s relatively large share in export demand, a rise in national income relative to its trading partners.

Policies to assist the Japanese automobile industry during the high-growth era also illustrate the mechanism whereby import controls can act as export promotion measures. As in the case of steel, the automobile industry was designated in the early 1950s as a strategic infant industry to be fostered by the government. From then until the late 1960s, the industry benefited from a bundle of promotional and protectionist policies. Among the former, the government supplied low interest


loans through government-affiliated financial institutions, granted subsidies for technological development, exempted necessary machinery and equipment from import tariffs, and, despite the severe foreign exchange restrictions, approved the import of essential foreign technology. And to secure efficient mass production, MITI subsidised the Nissan–Prince, Toyota–Hino and Toyota–Daihatsu mergers.66

At the same time the government sheltered the industry from foreign competition. It did so by means of protective tariffs, an excise tax which discriminated against foreign cars, foreign exchange controls on imports, and severe restrictions on foreign direct investment. Sheltered from foreign competition, the domestic industry—a competitive oligarchy characterised by product differentiation—was able to entrench itself in the home market. Because the protection was known to be temporary, designed to give the local industry just enough time to prepare for liberalisation, the threat of future competition spurred the local manufacturers to accelerate their investment in ever-expanding productive capacity and to avoid excessive price competition. Faced with an expanding domestic demand, investment surged, permitting the manufacturers to exploit considerable static and dynamic scale economies and to engage in further capacity-expanding investment. By the time passenger car imports were liberalised in 1964, the Japanese automobile industry was internationally competitive in terms of costs and quality. And by the time foreign investment restrictions were lifted in the 1970s, foreign producers found that the high-capacity domestic firms had pre-empted the market. When domestic demand began to slacken in the early 1970s, the irreversible effects of these time-bound protective measures were strong enough to give the Japanese producers a decisive competitive advantage in foreign markets.67 That exports were able to leap from 100,000 in 1965 to over 1.8 million units in 1971 indicates the success of the government's strategy.68

Of Japan’s achievements in the high growth period, one of the most dramatic was the rapid emergence of the colour television industry and its swift capture of export markets. As already noted, some observers see the success of the Japanese colour television industry on world markets as owing little to government targeting. One Australian economist even asserts that a firm like Sony owes ‘nothing whatever to bureaucratic promotion, but everything to innovation, rivalry and low cost’.69 But to depict the industry in that way is to disregard the degree to which the surge of colour television exports was made possible by a combination of

67 Itoh, et al., Economic Analysis of Industrial Policy, ch. 11.
69 Kasper, ‘Competition and Economic Growth’.
government policies: import tariffs and quotas, controls on direct foreign investment, lax enforcement of antitrust measures, tax incentives for exports, and a government coordinated and financed R&D program. As a leading specialist in Japanese industrial policy, has argued, these unique policy incentives ‘cannot be ignored’ in any explanation of the Japanese producers’ success in capturing a large slice of the American market.\textsuperscript{70} In fact, policies to protect and financially assist the industry served also to develop the industry’s capacity to succeed in capturing export markets.

The fledgling industry benefited greatly from import protection. Tariff rates ranged between 20 and 30 per cent until 1968. Despite trade liberalisation after that date, imports in 1980 amounted to no more than a minuscule 0.1 per cent of the domestic market.\textsuperscript{71} As in the case of automobiles, the industry also benefited from another form of effective market closure: restrictions on foreign direct investment.\textsuperscript{72} Those restrictions prevented United States’ firms from establishing subsidiaries in Japan or from acquiring the smaller Japanese producers and using their facilities for manufacturing portable sets.

The closed market enabled the seven major Japanese manufacturers to reap the advantages of scale economies, especially for small sets. It enabled them to cartelise the domestic market and to collude in setting high domestic prices. The closed market also compelled the United States’ manufacturers, who were excluded from the Japanese market, to license their technology to the Japanese, a move which speedily closed the technology gap between the two industries. Special governmental grants and long-term low interest loans made it easier for the Japanese companies to purchase this foreign technology, as did the high domestic earnings.

The scale economies and the high-profit base not only permitted the Japanese manufacturers to upgrade their production processes and incorporate new technological developments, they also ‘provided the firms with the motivation and means to sell their products on world markets at prices below those commanded at


home—possibly below the cost of production'. The Japanese manufacturers sold on the American market at prices far below those charged in Japan. This dumping occurred with the connivance of MITI, which sanctioned the industry's legal export cartel and its system of common minimum prices for exports.

The importance of the Korean experience is that it shows that import-substitution policies need not be incompatible with an export-oriented development strategy. By providing firms with a protected home market and by using subsidies to socialise the risk of large scale investments, the Korean government enabled firms to achieve scale and learning economies based on large and expanding production volumes. This in turn allowed firms to exploit their falling cost curves to capture export markets from foreign competitors. It also made it possible for the government, once export markets had been staked out, to wind back its subsidies and the level of protection. Korea in this respect followed the Japanese model: it supported at any one time only a ‘narrow moving band’ of infant industries, providing protection until a targeted industry was internationally competitive, then moving on to the next target. Exporting, in turn, enabled further economies of scale to be exploited, thus further reducing unit costs of production and leading to lower domestic prices than would occur in its absence.

Neo-classical economists frequently depict Korea as a pre-eminent exemplar of export-oriented industrialisation. They argue that because the Korean government maintained the exchange rate near the free trade level, exempted intermediate inputs and export sales from indirect taxes, and granted exporters unrestricted and tariff-free access to imported inputs, it provided a virtual free trade regime for exporters. But to depict Korea's industrialisation strategy as essentially one of export-promotion based on non-selective policies of ‘unshackling exports’ is to tell but half the story. It fails to acknowledge that the Korean

---


government has since the early 1960s actually pursued two proximate industrial objectives. These have been (i) to encourage exports from industries where Korea has an established or readily attainable comparative advantage and (ii) to promote infant industries. While measures without any discernible trade or industry bias were used in attaining the first objective, protection and other selective measures, including many genuine subsidies, were used to attain the second.

Protection was the main promotional incentive for designated infant industries. In the early 1960s, these industries included cement, fertilisers, synthetic fibres, and oil refining. They were followed in the late 1960s by steel and petrochemicals. In the 1970s, under the plan to promote self-sufficiency in the ‘heavy and chemical’ industries (HCI) and to upgrade Korea’s export potential in capital and intermediate goods, import protection was extended to nonferrous metals, shipbuilding, heavy machinery, transport equipment, motor vehicles and, although they were neither heavy nor chemical, consumer durables and electronics. Although the HCI drive was abandoned in 1979, the automobile and electronics industries continued to be protected. Import restrictions were still used as late as 1987 to protect high-tech products such as computers, electronic amplifiers, cameras, VCRs, integrated circuits, teleprinters, and colour TVs.

The selective allocation of credit, however, has had the most impact on Korea’s industrial structure. Through its control of the entire credit system (the banks were not privatised until the 1980s), the government has been able to direct the commercial banks to accord designated ‘strategic’ industries preferential access to ‘policy loans’ at substantially subsidised rates. In this way, and because of the highly leveraged nature of Korean industry, the government has been able to determine not only the level and rate of industrial investment but also its direction. In the 1970s, for example, investment was directed into the export sector, the chemical and heavy industries, and the large conglomerates (known in Korea as

---


78 The reliance on subsidies sits uneasily with the neo-classical depiction of the Korean economy. These subsidies included tax reductions on export earnings; accelerated depreciation allowances on capital used in export production; generous wastage allowances on duty-free imports of raw materials; preferential rates on electricity and rail transportation; and, most importantly of all, preferential access to short- and long-term credit for exporters. As Nam writes, Korea pursued its outward-oriented strategy by following the export-subsidy, not the free-trade, route. See Chong-Hyun Nam, ‘Export Promotion Strategy and Economic Development in Korea’, in Chris Milner (ed.), Export Promotion Strategies: Theory and Evidence from Developing Countries, Harvester Wheatsheaf, Hemel Hempstead, 1990, pp. 165–83.

79 World Bank, Korea: Managing the Industrial Transition. (Volume I: The Conduct of Industrial Policy), ch. 3.
The government also used the credit system to increase Korean ownership and control in key sectors. By favouring the chaebol, the government’s planners hoped to set up a small set of very large, domestically owned and controlled, diversified enterprises amenable to governmental direction and capable of surmounting the high entry barriers in the HCI sectors and of maximising scale economies in production, R&D, and exporting. For example, the chaebol were given preferential access to concessionary credit to establish general trading companies modelled on Japan’s sogo shosha in order to achieve scale economies in exploring new markets and in establishing overseas sales networks.\(^80\)

In fact, what is quite distinctive about these various measures to protect and promote domestic industries is that they have been crafted in such a way as to be export promoting. The government required assisted infant industries to meet closely monitored export targets; it allocated preferential credit on the basis of export performance; and it allowed exporters to practise discriminatory pricing at home as a means of subsidising export sales. Its closely monitored export targets virtually compelled established export industries, and assisted infant industries alike, to keep expanding their exports.\(^81\) The result, as Westphal writes, is that ‘infant industry’ has been a less apt characterisation in Korea than ‘infant\(^82\)’

It was this insistence on making exports ‘a compulsion rather than a choice’\(^83\) that enabled the Korean planners to elicit from the recipients of governmental subsidies progressive increases in production volumes, in quality, and in productivity. The insistence that infant industries compete in international markets also helped the planners to achieve the elusive balance between economies of scale, often requiring monopolised or oligopolistic market structures, and competition.\(^84\) Targeted industries soon became leading export industries. This group includes a number that were direct beneficiaries of the HCI drive, such as

---


\(^81\) ibid.


steel, shipbuilding, electronics, and automobiles.\textsuperscript{85} Even the export success of the semiconductor industry, often said to have been the result of private initiatives, stems in part from the policy of the HCI years to promote the large diversified conglomerates: by the mid-1980s they had attained the market power to internally cross-subsidise the development of the semiconductor industry, to surmount the high entry barriers, and to provide the marketing know-how.\textsuperscript{86}

\textit{Externalities and transformative technologies}

In Northeast Asia, governments have turned the market failures associated with technology to the advantage of their economies. These failures include the public good nature of technology, and imperfections in the international market for technology, in the market for risk capital, and in the flow of information between firms. Intervention to facilitate the acquisition, adaptation and diffusion of technology has been pervasive. All three have targeted industries and technologies perceived to be strategic for the economy's future growth—industries that were expected to generate pervasive externalities for a broad range of other sectors and which would set their economies on a favourable technological trajectory.

Consider first the acquisition of technology. The international market for technology is often characterised by oligopoly and monopoly. In all three countries, the state used its controls over foreign direct investment and over foreign exchange to improve the bargaining position of domestic corporations \textit{vis-à-vis} foreign owners of technology. Foreign direct investment was discouraged, the state preferring instead to force foreign companies to license their technology to domestic producers. Where foreign investment was permitted, the foreign corporation was usually required to enter a joint venture with a local company, assuring that technology and production skills would be transferred. Wholly foreign-owned enterprises were extremely rare in Japan and Korea.\textsuperscript{87} Where a licensing agreement was to be


\textsuperscript{87} On Japan, see Dennis J. Encarnation, \textit{Rivals Beyond Trade: America Versus Japan in Global Competition}, Cornell University Press, Ithaca, NY, 1992; on Korea, see Russell Mardon, ‘The State and the Effective Control of Foreign Capital: The Case of South \textit{World Politics}, vol. 43, no. 1, 1990, pp. 111–38. The Taiwanese state has been less hostile towards foreign direct investment than its counterparts in Japan and
arranged, the state sometimes insisted that local firms be represented by a single negotiator, sometimes a single licensee, to maximise the domestic bargaining leverage.\textsuperscript{88}

Moreover, because capital market failures are a major barrier to technological development, the state in Northeast Asia developed a variety of mechanisms for financing technology acquisition. These included loans at concessional rates; equity participation by the state (especially in Taiwan\textsuperscript{89}); and the establishment of institutions to fund high risk, high technology R\&D by the private sector. Examples of the latter include the Japan Key Technology Centre (JKTC) and the Korean Technology Advancement Corporation (KTAC), and the Taiwan Bank of Communications. The JKTC lends government and private funds at preferential rates to consortia and firms conducting R\&D in 'key technologies', primarily microelectronics, telecommunications, new materials, and biotechnology. The KTAC funds the commercialisation of technologies developed by government research centres. The Bank of Communications is Taiwan's government development bank and has a division for venture and risk capital which underwrites high technology investments.

Consider next the adaptation and diffusion of technology. In neo-classical economics, one of the most pervasive market failures is the externalities arising from the inability of companies to exclude others from the benefits of their private research and development activities. Competitors are able to mimic improvements by reverse engineering, and knowledge of new production processes often leaks from the originating firm. Since firms fail to capture all the benefits of their research, the tendency is for under investment in such activities. Rather than attempt to strengthen the private ownership of technology, governments in Northeast Asia have acted to reinforce its collective good status. They have done this by promoting industry associations and encouraging them to share facilities.


\textsuperscript{88} A case in point was MITI's insistence that Nippon Kokan become the only Japanese licensee of basic oxygen furnace technology. To ensure that the new technology was disseminated to other steel producers, MITI arranged for them to share in paying the royalty costs in return for having access to the technology. This arrangement enabled the Japanese steel industry to gain access to the BOF technology at a considerably lower cost than their American competitors.

\textsuperscript{89} Two of Taiwan's leading semiconductor producers, United Microelectronics Corporation and the Taiwan Semiconductor Manufacturing Corporation, were created with the government holding a large equity stake. The Bank of Communications holds an equity position in the Taiwan Masking Corporation, which produces semiconductor masks. Howell, Bartlett and Davis, \textit{Creating Advantage}, p. 198.
They also created regional technology centres, established government research laboratories, and encouraged research consortia. Samuels notes that since the 1970s every government program in Japan designed to promote technology development has included incentives for collaborative research. Moreover, when the government issues contracts for high-technology research or goods, it ensures that the unsuccessful bidders are awarded part of the contract as suppliers to the primary contractor. In that way ‘Winners and losers “take all” together—though in different measure’.

The export-orientation of the developmental strategies of the three governments has also assisted those economies to acquire and diffuse technology. The emphasis on exports is in accord with arguments found in the new theorising on trade and growth that claims that substantial externalities for the domestic economy arise from the experience of producing for foreign markets. These spillovers arise, in particular, from impetus that international competition gives to improving quality, introducing new products, and keeping up with new technology. Evidence from Korea indicates that exporting has been a particularly important mechanism for acquiring technological mastery.

The rise of the semiconductor industry in Japan, Korea and Taiwan illustrates the way the state has forced the pace of technological learning. Over the last decade, semiconductor production has become the archetypical strategic industry.

---


92 ibid. p. 313.

Countries covet a flourishing semiconductor industry not only because its technology spills over to other advanced industries but also because it is seen as essential for a nation’s economic, technological and military strength. Because it is characterised by steeply rising scale and learning economies, by extremely short product cycles, by highly expensive R&D, by pervasive external economies, and by enormously costly start-up costs, ‘the semiconductor industry is about as far as one can get from the classical model of a perfect market’. Little wonder the industry is regarded by many as the ideal target for strategic trade policy.

In its ‘vision’ statement of how Japan’s industrial structure should change in the 1980s, MITI advocated a shift to a ‘knowledge-intensive industrial structure’ based on advanced technology. Woven through the text of MITI’s vision for the 1980s is a clear understanding of the major long-term ‘ripple effects’ of ‘epochal technological innovation’, of the bargaining leverage that possession of this technology will give Japan, and of the need for the government to promote these technologies when their development is ‘urgently needed by the economy and society’ and when it requires massive investment, R&D coordination among firms, and a long gestation period before results can be marketed. Central to this vision was the recognition of the semiconductor as just such a strategic transformative technology whose national importance demands state promotion. A similar recognition of the strategic importance of semiconductors occurred in Korea and Taiwan. Although Korea had no comparative advantage in the production of semiconductors in the mid-1970s, the Korean government targeted semiconductors in 1976 as a ‘strategic industry’ for promotion. In the mid-1980s, Taiwan’s government mapped out a strategy to shift the Taiwanese economy towards high technology industries. The promotion of the semiconductor industry became a central aspect of that strategy.

The erosion of United States’ technological leadership in semiconductors has been ascribed in large part to ‘the mobilizing, coordinating and rallying role of the —particularly the use of government-backed collaborative R&D projects. The goal of many of the earlier projects was to match or surpass the technical capabilities of the leading foreign firms, notably IBM. For example, the 1966-71 super high performance electronic computer (SHPEC) program was to catch up to IBM’s System 360 series; the 1972 76 3.5 Generation’ Project was in

---


reaction to IBM’s 370 series; the 1976–79 Very Large Scale Integration (VLSI) Project targeted the expected use of VLSI memory circuits in IBM’s Future Series.

In the 1980s, MITI based a further series of joint R&D programs on the VLSI model. These projects targeted certain new technologies such as optoelectronics, supercomputers, and future electronic devices. Having reached the technological frontier in many areas of computers and semiconductors, the problem facing Japanese companies at that stage was the uncertainty and risk inherent in ‘over the horizon’ R&D. MITI helped reduce these uncertainties. It did so by socialising the risk, by reducing the transaction costs of collaborative research, and by selecting, in close cooperation with industry, the technologies for development. MITI’s funds not only acted as a magnet attracting additional corporate investment into the selected areas, they were also important in their own right. Around 20 per cent of the research resources spent by certain firms on R&D projects with a time horizon of ten years or more came from MITI.97 But MITI shrewdly left the commercialisation of the technological advances to the firms. In this way MITI avoided the pitfalls of attempting to pick winning products and ensured that competition would have to centre on improving quality and lowering costs. Further, by providing the institutional context in which semiconductor producers could work with the producers of semiconductor fabrication equipment, the VLSI project helped to generate the technical synergies to be derived from ‘learning by using’.98

Observers generally credit the 1976–79 Very Large Scale Integration project with enabling Japan to close the technology gap with the United States, and indeed to achieve technological superiority in areas such as nonsilicon products, new materials, and high density memory devices. They doubt that Japanese firms would have been able, without the catalytic effect of the VLSI project, to commercialise the 64K dynamic random access memory (DRAM) chip as early as they did, or to capture 70 per cent of the world market for 64K chips by 1981–82.99

By providing incentives to encourage the leading semiconductor firms to participate in joint research, MITI and Nippon Telephone and Telegraph (NTT) were able to overcome the collective action problem deterring firms from

collaborating on R&D. But given the fierce rivalry among the largest firms, cooperation was often difficult to secure. One incentive was the mechanism of ‘distributed cooperation’, where research is carried out independently in each firm’s own laboratory, with the patents then shared. This enabled the participating firms to keep their competitors at arm’s length yet at the same time it permitted the diffusion of technological knowledge.\textsuperscript{100}

In a careful study of R&D consortia for superconductivity and engineering ceramics, Hane emphasises technological diffusion, rather than dramatic scientific breakthroughs, as the chief goals of the projects. Among these goals were: diffusing information about state-of-the-art to industry; establishing data bases that would help eliminate blind alleys and contribute to the codification of knowledge that had a strongly tacit character; allowing sufficient time for firms to take the technology through several generations of iteration for greater commercial attractiveness; and coopting end-users by lowering their risks through subsidies and incorporating them into the development of the technology.\textsuperscript{101}

By bringing together technical staff from the participating firms, the joint research projects also checked the tendency of the lifetime employment system, with its low labour mobility, to hinder the diffusion of technical knowledge among firms. Fransman singles out the synergistic effects of the improved flow of information among the participating firms and the economies of joint R&D (from pooling technical information, sharing costly non-divisible equipment, and avoiding wasteful duplication in research), as a distinct benefit that flowed from the VLSI project. To counter the argument that the market could have been relied upon to produce these benefits, he points out that not only did MITI have to force the firms to participate in the joint projects but that in the whole postwar period there were only two cases of spontaneous research cooperation among Japan’s major electronic firms not prompted or assisted by the government or a government agency such as NTT.\textsuperscript{102}

In Korea, the government has emphasised the role of public research institutes and collaborative R&D to enhance its own technological capacity in microelectronics. And as in Japan, it has given priority to raising the competence and competitiveness to a small number of the biggest firms in the industry, all of whom


\textsuperscript{101} Gerald Jiro Hane, Research and Development Consortia in Innovation in Japan: Case Studies in Superconductivity and Engineering Ceramics, PhD dissertation, Harvard University, 1992, p. 541.

\textsuperscript{102} Fransman, \textit{The Market and Beyond}, p. 279.
belong to three major conglomerates: Samsung, Goldstar and Hyundai. In 1976 the government established a public research institution, the Korea Institute of Electronics Technology (KIET). Its mission was to plan and coordinate semiconductor R&D, to import, adapt and disseminate foreign technologies, and to provide technical assistance to firms. KIET established contact with United States’ semiconductor firms and created a network among Korean scientists working in United States’ semiconductor companies. It took an active part in all technology transfer agreements between Korean and foreign firms. (The government has continued to use its de facto influence over foreign investment—influence obtained through foreign requests for tax benefits—to induce technology transfers from foreign to Korean companies.)

KIET also pioneered the fabrication of silicon wafers in Korea. By taking the initiative and backing those initiatives with sizeable funds, the Korean government ‘got different results than had the firms

Once the chaebol began to produce semiconductors and to conduct their own applied research, the government’s role changed. It took on more of a follower role. KIET’s role (and name) changed. Now known as the Electronics and Telecommunications Research Institute (ETRI), it focused more on promoting parallel basic research in semiconductors, computers and telecommunications and setting its R&D agenda in consultation with the major Korean companies. In the mid-1980s, ETRI was associated with subsidising and coordinating the VLSI Project, a Japanese-style R&D consortium to develop a Korean design for a four megabyte chip. It then moved on to target the development of 16M and 64M DRAMs through government-industry cooperation. Recognising the importance of spillovers and linkages, the government has in more recent years been using subsidies and administrative guidance to build a local supply infrastructure for semiconductor materials and an indigenous semiconductor equipment industry.

The dominance of small and medium sized enterprises in Taiwan, and their reluctance to enter the semiconductor business, explains the leadership role taken by the state in Taiwan in creating a semiconductor industry. The Electronics Research and Service Organisation was set up in 1975 with a government grant to design and produce integrated circuits. Focusing on application-specific integrated circuits, it provided a series of spin-offs for the whole information industry. In 1980 the state created Taiwan’s first semiconductor enterprise, United Microelectronics Corporation. A public corporation in which the government held a 44 per cent equity stake, UMC had the task of commercialising microelectronics technology

---

developed in the public research laboratories. The government also established the Taiwan Semiconductor Manufacturing Corporation, a foundry manufacturing semiconductors on a contractual basis for other companies, in which it held a 40 per cent stake. The government has set up state-owned technology research institutes to acquire and adopt foreign technology. Given the capital constraints and coordination difficulties faced by Taiwan’s proliferation of small-sized firms, and considering the high entry barriers resulting from short product cycles and steep learning curves in high technology sectors, government-supported R&D has been a particularly important measure in promoting ‘strategic technologies’ in Taiwan. Studies of government-initiated R&D in the machine tools and informatics industries—computers, semiconductors, telecommunications—indicate the crucial role played by the state in assisting these strategic industries rapidly to master, improve, disseminate, and commercialise the new technologies and to achieve international competitiveness.  

As Biggs and Levy observe, ‘externality-creating investments promoted (and sometimes undertaken directly) by government appear to have been unusually important in Taiwan’s successful industrialisation.’ Many of Taiwan’s selective trade and industrial policies can be interpreted as efforts by the Taiwanese authorities to stimulate the generation of external economies. By initiating investment in and directing capital towards consecutive sets of basic upstream industries, the government’s planners provided new profit opportunities intended ‘to spark an endogenous downstream expansion of private firms as a result of its initiatives’. These initiatives helped generate sequential externalities that contributed to the economy’s productivity and growth over and above the profits earned by the targeted upstream industries. These investment initiatives also generated simultaneous externalities—benefits that are contingent on the complementary and simultaneous decisions of interdependent actors, and which are often lost if left to the uncoordinated investment decisions of private

---


109 ibid. p. 383.
agents—by ensuring the concurrent expansion of related industries. Certain trade policies, such as the law of similars, fostered technological acquisition through ‘learning by using’. This measure, which prevented manufacturers importing particular intermediate products, in effect brought downstream users and local suppliers together and encouraged the latter to upgrade their production processes so that their products would meet the specifications demanded by the users.

**Conclusion**

The interpretation of the Northeast Asian industrial policy experience by Australia’s economic policy community has been inextricably caught up in the debate over domestic economic policies. Advocates of the level playing field have been determined to ensure that their simple policy prescription should not be complicated by an acknowledgement that industrial policies have worked elsewhere. At best they have been unable to conceptualise intellectually the dynamics that occur outside the paradigm in which they operate. At worst they have shown a marked reluctance to acknowledge and confront contrary evidence. This is seen in their deliberate silence on the role of sectorally-specific policies in the success of the Northeast Asian economies, and in their distorted accounts of such intervention.

With the publication of the World Bank’s *East Asian Miracle*,¹¹⁰ it is very difficult for even the most hard-line of economic rationalists to deny that the state played a role in the success of the Northeast Asian economies. Two of the principal contributors to the Bank’s report, which in general was hostile to industrial policies, summarise its findings as follows: ‘government interventions in many cases have not had the dire consequences that many would have predicted...The country studies leave no doubt that government intervention in picking winners was prominent in some East Asian countries.’¹¹¹ Not only was it prominent, our evidence for Japan, Korea and Taiwan shows many examples where government intervention in the form of sectoral trade and industry policies has occurred with the intention of realising externalities, of changing technological trajectories, and of shaping comparative advantage. None of the governments has been content to trust the course of economic development exclusively to the market. All three have consciously targeted industries that were perceived to be strategic for the economy’s future growth—industries that were skill- and capital-intensive, industries that were expected to generate technological spillovers and other externalities, and industries whose products were identified as having high income elasticities of

---

¹¹⁰ World Bank, *The East Asian Miracle*.

demand. A similar set of industries was identified in all three countries for government support—steel, heavy and chemical industries, automobiles, electrical and electronics, semiconductors, and most recently, bio-technology. The similarity in the industries assisted is unremarkable given, first, the importance of these sectors to modern industrialised economies and, second, the fact that both Korea and Taiwan consciously set out to emulate the Japanese model.

Various policies have been used to overcome the market failures, particularly coordination and information failures, that prevent externalities from being realised. Again, there are great similarities across the three countries. Governments have sponsored research and development activities designed to acquire and disseminate foreign technologies; they have used their powers over foreign investment to require technological transfer and/or to insist that foreign investors take on local joint venture partners. The net result has been to shift production to the local economies, production that would otherwise have been carried out overseas.

Northeast Asian governments have pursued various policies consistent with the variant of strategic trade theory that builds on the infant industry argument. This suggests that government intervention through protecting the domestic market and through facilitating exports may enable firms to capture the benefits of scale and learning economies. The larger the domestic market, the greater the potential for realising such benefits. Japanese companies thus have tended to benefit more than their Korean counterparts, which in turn benefited more than Taiwanese firms, from having a secure home market (although it should be noted that in most industries in Japan there has been vigorous competition in the protected domestic market between a number of companies, whereas Korea and Taiwan in some sectors have granted companies domestic monopolies). Governments in all three countries have also, however, utilised various policy instruments to enable domestic firms to realise scale and learning economies through penetrating foreign markets.

In short, the state has intervened decisively in Japan, Korea and Taiwan at various times to change the structure of incentives for particular industries in a manner that has significantly affected their patterns of economic development. The evidence cannot sustain the a priori case against government intervention that many Australian economists and economic commentators have presented. Conclusions about the replicability elsewhere of the East Asian experience with strategic trade policies must, however, be drawn cautiously. The success of the policies pursued by these states depended on the political and institutional contexts in which they were applied. To avoid state failure in the pursuit of similar policies in political systems that lack the normative consensus, the exclusionary characteristics, and/or the weak legislatures of Japan, Korea and Taiwan will be much more difficult. Similarly, to reproduce the elite planning agencies of these
countries elsewhere, without the supporting political and economic environments, is to invite very different results. The distinctive features of the Australian economy (not to mention the different political and bureaucratic context) cautions against any simple application of the Northeast Asian experience with strategic trade policy to Australia.

The Industry Commission makes several persuasive arguments why policies designed to shift rents to domestic firms may not work in Australia:

Even if significant economic rents exist, the small size of the Australian market places a major constraint on attempts to achieve international cost competitiveness by closing the domestic market. Further, while small size does not preclude the possibility that subsidies could enable Australia to dominate some markets...the importance of a country being at the frontier of competitiveness before intervention is attempted...raises the question of whether, in many of the industries identified by the proponents of strategic policy as worthy of assistance, Australia is too far behind for market domination to be feasible. Also, Australia’s relatively small market size means that the cost of (inevitably some) failed attempts at intervention would be substantial.\(^{112}\)

In addition, Australia has (outside the resources sector) few major firms in world-scale oligopolistic industries where there are significant barriers to entry and economic rents to be earned.\(^{113}\) In fact, very few firms that are large by Australian standards are large players by world standards. Apart from mining companies, only one manufacturing company, BHP, is an exporter of world class. Australian manufacturers lack the market power needed to participate in international strategic games in which the trick is to threaten to boost their size and output. Not only that, a large number of Australia’s top exporters are actually the affiliates of major foreign-owned multinational corporations and have limited autonomy to develop and market high value-added products outside of Australia.

All of this suggests that the Northeast Asian experience with policies designed to assist targeted industries to capture economic rents or to realise scale and learning economies has very restricted relevance to Australia. The industries that come closest to meeting the characteristics needed for such policies include value-added processing of resource and agricultural commodities, custom-designed computer software (for example, for banks), and specialist equipment for mining and agriculture (where the Australian market is relatively large). Other Australian firms may be able to carve out niches in specialist markets, gain first-mover advantages and earn rents, but as the entry barriers to such industries are unlikely

\(^{112}\) Industries Assistance Commission, ‘Appendix 5: Strategic Trade Theories’.

to be significant for large overseas rivals, and the products may well be vulnerable to reverse engineering, such advantages may prove to be transitory.

While policies aimed at shifting rents to domestic firms may not succeed in the Australian context, these are but one small part of the strategic trade policy agenda. There are positive lessons for Australia from the Northeast Asian experience with other parts of the agenda. These are most notable in the success of governments in changing technological trajectories in Japan, Korea and Taiwan through the pursuit of policies consistent with what we have termed a ‘strategic technology’ approach. In Northeast Asia, intervention to facilitate the acquisition, adaptation and diffusion of technology has been extensive. All three countries have adopted policies to correct market failures hindering R&D activities—particularly failures associated with imperfect and asymmetric information. The use of government-sponsored R&D consortia illustrates how governments can overcome the collective action problem deterring firms from collaborating on R&D, can bring the potential users of a high-tech product and the manufacturers together in the R&D process, and, by involving a number of industrial sectors in the process, can promote more effective ‘technology fusion’. Moreover, all three have targeted industries and techniques that were expected to generate pervasive externalities for a broad range of other sectors, to lead to increasing returns at the economy level, and to set their economies on a favourable technological trajectory. Given Australia’s poor R&D performance, particularly by the private sector, government intervention can play two roles: to help overcome the market failures that have resulted in too little R&D; and, as the Bureau of Industry Economics has argued, to induce an attitudinal and behavioural change among Australian firms, ‘such that R&D becomes an ongoing element of company strategy’. With voices in the economic policy community now conceding that local empirical evidence exists linking R&D, innovation, and competitiveness, such a change is essential if Australia is to improve its international competitiveness.


DEPARTMENT OF INTERNATIONAL RELATIONS PUBLICATIONS

as at 1 June 1995

WORKING PAPERS:

Send all orders to:
Publications Officer
Department of International Relations
Research School of Pacific and Asian Studies
The Australian National University
Canberra ACT 0200 Australia
Phone: (06) 249 4451/279 8089 Fax: (06) 279 8010

WP1992/1  The Changing Central Balance and Australian Policy, by Coral Bell
WP1992/2  Agricultural Trade and Australian Foreign Policy in the 1990s, by Stuart Harris
WP1992/4  Analysing the Impact of International Sanctions on China, by Peter Van Ness
WP1992/5  Economic Change in the International System Implications for Australia’s Prospects, by Stuart Harris

WP1990/1  Middle Power Leadership and Coalition Building: The Cairns Group and the Uruguay Round, by Andrew Fenton Cooper and Richard A. Higgott
WP1990/2  The Soviet Far East, by Geoff Jukes
WP1990/3  The Environmental Challenge: The New International Agenda, by Stuart Harris
WP1990/4  India in Southwest Asia, by Amin Saikal
WP1990/5  Is Unilateral Trade Liberalisation the Answer? by Trevor Matthews and John Ravenhill
WP1990/6  The Politics of Baltic Nationalisms, by William Maley
WP1990/7  Peacekeeping in the South Pacific: Some Questions for Prior Consideration, by Greg Fry
WP1990/8  Informal Theories of Rationality, by James L. Richardson
WP1990/9  The Limits to Liberalisation in Industrialising Asia: Three Views of the State, by James Cotton

WP1991/1  International Trade, Ecologically Sustainable Development and the GATT, by Stuart Harris
WP1991/3  Continuity and Change in Cooperative International Regimes: The Politics of the Recent Environment Debate in Antarctica, by Lorraine M. Elliott
WP1991/4  Foreign Policy Analysis, International Relations Theory, and Social Theory: Critique and Reconstruction, by Ian Bell
WP1991/5  China as a Third World State: Foreign Policy and Official National Identity, by Peter Van Ness
WP1991/6  The Drawbacks of the Detached View: Russia, the USSR and the Pacific, by Artem Rudnitskiy
WP1991/7  ‘Civil Society’ and Nationalism in North Korea: Foundations for Political Change? by James Cotton
WP1991/8  Australia and the South Pacific: From ‘Strategic Denial’ to ‘Constructive Commitment’, by Greg Fry
WP1991/9  Implementing Foreign Policy: The Environmental Challenge, by Stuart Harris
WP1991/10  The Korean Nuclear Issue, by Song Young Sun

WP1992/1  After the Cold War and the Gulf War: Prospects for Security in the Asia–Pacific, by Andrew Mack
WP1992/2  Questions About a Post-Cold War International Order, by J.L. Richardson
WP1992/3  New Hierarchies in East Asia: The Post-Plaza Division of Labour, by Mitchell Bernard and John Ravenhill
WP1992/4  Federalism and Australian Foreign Policy, by Stuart Harris
WP1992/5  Moving Target—Korea’s Nuclear Proliferation Potential, by Peter Hayes
WP1992/6  The Economic Aspects of Pacific Security, by Stuart Harris
WP1992/7  The Gulf War and Australian Political Culture, by James L. Richardson
WP1992/8  The Case For a Nuclear Weapon-Free Zone in Northeast Asia, by Andrew Mack
WP1992/9  Nuclear Dilemmas: Korean Security in the 1990s, by Andrew Mack
WP1992/10  Arms Proliferation in the Asia-Pacific: Causes and Prospects for Control, by Andrew Mack

WP1993/1  The Practice of Common Security: China’s Borders with Russia and India, by Gary Klinkworth
WP1993/2  Strategic Trade Policy: The East Asian Experience, by Trevor Matthews and John Ravenhill
WP1993/3  Environmental Regulation, Economic Growth and International Competitiveness, by Stuart Harris
WP1993/4  The Environment and Sustainable Development: An Australian Social Science Perspective, by Stuart Harris
WP1993/5  Gaddis’ Lacuna: Foreign Policy Analysis and the End of the Cold War, by Valerie Hudson
WP1993/6  The Return of Practical Reason, by Hayward R. Alker, Jr.
WP1993/7  An American New World Order?, by James L. Richardson
WP1993/8  Concepts of Security in the Post-Cold War, by Andrew Mack
WP1993/9  Australian Security in the 1990s, by Andrew Mack
WP1993/10  Nuclear-Free Zones in the 1990s, by Andrew Mack

WP1994/3  Australia’s Regional Security Environment, by Stuart Harris
WP1994/4  Policy Networks and Economic Cooperation: Policy Coordination in the Asia–Pacific Region, by Stuart Harris
WP1994/5  North Korea’s Nuclear Program: the Options are Shrinking, by Andrew Mack
WP1994/6  The Asia–Pacific: Geopolitical Cauldron or Regional Community?, by James L. Richardson
AUSTRALIAN FOREIGN POLICY PAPERS

Australian Foreign Policy Papers are published by the Australian Foreign Policy Publications Programme in the Department of International Relations:

Send all orders to:
Reply paid 440, Bibliotech
ANUTECH
Canberra ACT 0200 Australia
Telephone: (616/06) 249 3811/5662
Fax Order: IDD (616) STD (06) 257 1433

Australia's Alliance Options: Prospect and Retrospect in a World of Change, by Coral Bell $15.00
Coping With Washington: Players, Conventions and Strategies, by Davis Bobrow $10.00
The European Community in Context, by John Groom $15.00
Australia's Human Rights Diplomacy, by Ian Russell, Peter Van Ness and Beng-Huat Chua $15.00
Selling Mirages: The Politics of Arms Trading, by Graeme Cheeseman $15.00
The Search for Substance: Australia–India Relations into the Nineties and Beyond, by Sandy Gordon $15.00
Protecting the Antarctic Environment: Australia and the Minerals Convention, by Lorraine Elliott $15.00
Australia's Taiwan Policy 1942–1992, by Gary Klintworth $20.00
Australia and the New World Order: Evatt in San Francisco, 1945, by W.J. Hudson $20.00
The Beijing Massacre: Australian Responses, by Kim Richard Nossal $15.00
The Pacific Patrol Boat Project: A Case Study of Australian Defence Cooperation, by Anthony Bergin $10.00
Australia's Evolving American Relationship: Interests, Processes and Prospects for Australian Influence, by Henry S. Albinski $10.00

* Plus $3.00 postage and packaging per copy ordered.
DEPARTMENT OF INTERNATIONAL RELATIONS

Publications Order Form

WORKING PAPERS ONLY

Please Supply


* All Working Papers are $A5.

Method of Payment (please tick)

☐ Money Order
☐ Cheque (made payable to: The Australian National University)
☐ Mastercard/Visa Card Number ................................ ................................ ............................
    Expiry Date ................................ ...................... Signature ................................ ..................

For Overseas Orders: Payment by Mastercard/Visa or by Bank Draft in Australian Dollars only, payable to Australian National University.

Name/Organisation: ......................................................................................................................
Postal Address: .............................................................................................................................
Suburb: ................................ State: ......................... Postcode: ..............................................
Signature: ........................................................................................................ Date:..............................

Please forward completed form and payment to:

Publications Officer
Department of International Relations
Research School of Pacific and Asian Studies
Australian National University
CANBERRA ACT 0200 AUSTRALIA
Phone: (06) 249 4451/279 8089, Fax: (06) 279 8010
Email: robin.ward@coombs.anu.edu.au

* Standing Orders Welcome *